

Oracle Utilities Network Management System

User's Guide

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Preface

This guide describes how to use the Oracle Utilities Network Management System application. It provides instructions for completing common tasks and also provides descriptions of the fields, windows, buttons, and menus you will use to perform those tasks.

Audience

This document is intended for users of the Oracle Utilities Network Management System application.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at

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Related Documents

For more information, see the following documents:

- Oracle Utilities Network Management System Product Fix Documents
- Oracle Utilities Network Management System Installation Guide
- Oracle Utilities Network Management System Configuration Guide
- Oracle Utilities Network Management System Adapters Guide

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Common Terminology

The following terms and acronyms are used in one or more adapter descriptions.

CIS	Customer Information System
DTD	Document type definition, used to define XML documents
Generic IVR Adapter	A Unix application that generally executes on the OMS server machine. It supports the Trouble Call, Event Status, Affected Customers, Callback Request and Callback Response Data Flows.
HA	High availability, where Oracle Utilities Network Management System is configured with a pair of redundant servers. This is usually in the form of a hardware cluster and a shared drive that contains the database.

ISIS	Clients access services and tools through a central concurrency management and messaging system called Isis. Isis is a real-time implementation of message oriented middleware and comprises the backbone of the system, providing access to the server for each client and the communication required between tools and services. Isis delivers the organized information to the client applications.
IVR	Interactive Voice Response system
JMService	Job Management Service. The Oracle Utilities Network Management System call processing and outage prediction engine.
MQSeries	A queue-based messaging system developed by IBM. This system has been renamed to WebSphere MQ.
NMS	Oracle Utilities Network Management System
ODService	Object Directory Service. ODService improves performance of the Oracle Utilities Network Management System system by caching large amounts of device information that is likely to be requested by applications. This caching allows the requests to be handled very quickly without directly accessing the database.
OMS	Outage Management System
SCADA	Supervisory Control and Data Acquisition system
SMSservice	System Monitor Service. SMSservice monitors the core processes in the system, essentially the services and interfaces.
XML	Extensible Markup Language
XML Schema	An XML standard for defining XML documents
XSL	XML Style Sheet, used to reformat XML documents

Chapter 1

Operator's Workspace

This chapter describes the Oracle Utilities Network Management System Operator's Workspace. It includes the following topics:

- **Getting Started With Operator's Workspace**
- **Using the Operator's Workspace Viewer**
- **Using the Operator's Workspace Control Tool**
- **Viewing Summaries**
- **Using the Model Validation Environment**
- **Using the Administration Environment Manager**

Getting Started With Operator's Workspace

The Oracle Utilities Network Management System is a software suite designed from the ground up to specifically meet the needs of utilities' distribution operations centers. Oracle Utilities Network Management System - Operator's Workspace is the foundation on which all other Oracle Utilities Network Management System applications are built. It provides the navigation and framework needed for the rapid task management required in a control center.

This section covers system features used by many modules in the integrated Oracle Utilities Network Management System product. While certain features described in this chapter are configurable or optional, the general behavior of the features is consistent throughout the Oracle Utilities Network Management System. Features unique to a window or module are described within the chapter specific to that window or module.

Operator's Workspace topics include:

- **Operator's Workspace Tools**
- **Common Features**
- **Sorting and Filtering Data**
- **Printing**
- **Logging In**
- **Using the Environment Manager**
- **Taking Authority**

Operator's Workspace Tools

Operator's Workspace consists of several tools, including:

- The Environment Manager, which allows you to access the primary windows in Oracle Utilities Network Management System.
- The Viewer, which provides a dynamic view of the geographic maps of the distribution system.
- The Control Tool, which provides access to common device actions.
- The Work Agenda, which keeps a record of work to be completed by the user.

Common Features

There are a few features that are common to all Oracle Utilities Network Management System windows:

- **Title Bar**
- **Menu Bar**
- **Display Area**
- **Buttons**

Title Bar

The title bar tells you what window or dialog box you are using.

Menu Bar

The menu bar provides drop-down menus for available actions. Menu options that are followed by an ellipsis [...] indicate that the option opens another dialog box or window. There are a few menu options that appear in a number of Oracle Utilities Network Management System module windows:

- File menu items typically start standard procedures (e.g., printing or saving) and exit the window; however, File menus can vary between windows.
- Action menus provide access to features that are almost always specific to a particular window. Frequently used options on the Action menu are often repeated as buttons on the bottom of the window.
- The Help menu appears on the right side of the menu bar on many applications. The Help documentation for the Oracle Utilities Network Management System product is accessible outside of the Oracle Utilities Network Management System applications via Internet Explorer.

Display Area

The display area displays the data provided by the window and allows you to manipulate that data.

Buttons

The buttons are used to perform an action or start a window. Button actions often correspond to Action menu options. Button text that is followed by an ellipsis [...] indicates that the button opens another dialog box or window.

Note: Always use the Exit button or File > Exit from the menu to close a window. Failing to do so may cause the window to disappear while it is still running and using system resources.

If a small black triangle appears to the right of text in a table cell, it indicates the cell contains more text that is not visible.

Device	Loc
fuse_oh_J17332	<FI
xfm_ss_J0-2220	<FI

To view the text, drag the column border to resize the column.

Sorting and Filtering Data

You can sort and filter data in certain Oracle Utilities Network Management System windows by using the Sort and Filter menus located at the top of the window. You can sort tables to display the rows in a particular order or filter them to display a specific subset of the rows.

Each table (e.g., the Trouble Events lists in the Work Agenda window) has its own unique set of sorts and filters. You can create, modify, and save sorts and filters for a table. Saved user-defined sorts and filters exist until either you delete them or you log out of the Operator's Workspace environment.

The currently selected filter and sort are displayed at the top of the window. The current filter is also selected on the Filter menu. The current sort option is selected on the Sort menu.

This section includes the following topics:

- **Sorting**
- **Filtering**

Sorting

You can apply ascending or descending sorts to a single column in a table by selecting a column (click once on the column header) and then selecting **Ascending** or **Descending** from the Sort menu.

The heading row for the sorted column changes color. The sort description at the top of the tool changes to describe the sort that has been applied. For example, if you choose a descending sort, the description displays "Sort -> desc on: [Sort field]."

Each sortable window has its own default sort, which you can access by selecting "Default" from the Sort menu. You can modify the default sort using the Sort dialog box. You can also apply and save multiple column sorts using the Sort dialog box. The following table describes the options available on the Sort menu.

Option	Description
Ascending	Sorts the data in a selected column in ascending order (A to Z or 0 to 9).
Descending	Sorts the data in a selected column in descending order (Z to A or 9 to 0).
Dialog	Opens the Sort dialog box, allowing you to create, modify, apply, and save sorts.
Default and other saved Sorts	Lists any predefined and user-defined sorts. Also available in the Current Sort options menu in the Sort dialog box (see User-Defined Sorts below). Selecting a sort applies it.

User-Defined Sorts

User-defined sorts are only accessible to the user who creates them and are erased when the user logs out.

Use the Sort dialog to create, modify, apply, and save user-defined sorts. To open the Sort dialog box, select **Dialog** from the Sort menu. The Sort dialog contains the following fields and buttons:

- The **Current Sort** option menu presents a list of saved sorts for modification.
- The display area lists each column available in the table of data you are sorting. Each column heading has a corresponding option menu that allows you to specify the sort option (none, ascending, or descending) for that column in the table. Enter priority numbers in the fields just below the none/asc/desc menu in the Sort dialog box. The sort will begin with the lowest assigned number (starting with 0) and proceed sequentially (i.e., sort by the column with priority #0, then by the column with priority #1, etc.).
- The **OK** button applies the current sort to the table of data and exits the Sort dialog box.
- The **Save** button opens a dialog box for naming and saving the current sort. Saving automatically applies the sort. You can retrieve sorts through the Current Sort option menu and the Sort menu in the window.
- The **Delete** button opens a dialog box asking you to confirm the deletion of the selected sort. Once it is deleted, you can no longer retrieve the sort.
- The **Show** button applies the current sort settings to the table of data, but does not exit the Sort dialog box.
- The **Exit** button exits the Sort dialog box without applying the sort.

Creating a User-Defined Sort

To create a user-defined sort, complete these steps:

1. Select **Dialog** from the Sort menu.
2. Click on the drop-down menu of a column you want to sort by and select the sort option you want (none, ascending, or descending).
3. In the row beneath the drop-down list, specify the order in which you want the column sorted using 0 (zero) for the first priority, 1 (one) for the next, etc.
4. Repeat the two previous steps for any other columns you want to sort.
5. Click the **OK** button. The table is sorted according to the selected criteria. This sort is set as the default, and the Sort dialog box closes.

Note: You can view the sort by clicking on the Show button, but if you click Exit, the applied sort will be undone the dialog box closes.

Saving a User-Defined Sort

Once you create a sort, you can save it for future use. To save a sort, click the **Save** button in the Sort Dialog box and name the sort. The system automatically applies the sort. The sort name appears in the Current Sort option menu in the Sort Dialog box as well as the Sort menu in the actual window.

Editing and Deleting Saved Sorts

To edit a saved sort, select the sort from the Current Sort drop-down menu in the Sort Dialog window.

To delete a saved sort, select it from the Current Sort drop-down menu and click **Delete**.

Filtering

In addition to sorting, certain windows allow you to filter the data displayed. You can apply and save additional user-defined filters using the Filter dialog box. The following table describes the options available on the Filter menu.

Option	Description
Dialog	Opens the Filter dialog box, allowing you to create, modify, apply, and save user-defined filters.
Default and other saved Filters	Lists any predefined and user-defined filters. Selecting a filter applies it. These options are also available in the Current Filter options menu in the Filter dialog box.

Filter Dialog

Use the Filter dialog box to create, modify, apply, and save user-defined filters. To open this dialog, select **Dialog** from the **Filter** menu. The Filter dialog displays the following fields and buttons:

- The **Current Filter** option menu presents a list of saved filters for modification.
- The display area lists each column available in the table of data you are filtering.
- Each column heading has a corresponding option menu that allows you to specify the filter criteria for that column in the table.
- Enter filter values in the text field below each option menu. For example, to display only rows where the Event # is greater than 5000, you would select ">" from the Event # option menu and enter 5000 in the text field.
- The following table describes each of the filters available from the **Filter Options** menu.

Option	Description
Any	No filter is applied to this field.
Match	Rows display only if the field value exactly matches the filter value.
Multi-match	Rows display only if the field value matches any of the filter values specified. Multiple filter values may be entered in the same field, separated by spaces.
Not	Rows display only if the field value does not match the filter value.
Multi-not	Rows display only if the field value does not match any of the filter values specified. Multiple filter values may be entered in the same field, separated by spaces.
>=	Rows display only if the field value is greater than or equal to the filter value.
<=	Rows display only if the field value is less than or equal to the filter value.
Within	Table rows display only if the field value is between the two filter values. Both filter values may be entered in the same field, separated by a space.
Like	Table rows display only if the field value includes the filter value (e.g., "Status" includes "tat").

Option	Description
&	Performs a bitwise AND comparison (applicable only to integer columns).
~&	Performs the opposite of a bitwise AND comparison (applicable only to integer columns).

Buttons

- The **OK** button applies the current filter to the table of data and exits the Filter dialog box.
- The **Save** button opens a dialog box for naming and saving the current filter. Saving automatically applies the filter. You can retrieve filters through the Current Filter option menu and the Filter menu in the window.
- The **Delete** button opens a dialog box asking you to confirm the deletion of the selected filter. Once it is deleted, you can no longer retrieve the filter.
- The **Apply** button applies the current filter settings to the table of data, but does not exit the Filter dialog box.
- The **Exit** button exits the Filter dialog box and removes any applied filter settings.

Creating a User-Defined Filter

To create a user-defined filter, complete these steps:

1. Select **Dialog** from the Filter menu.
2. Click on the drop-down menu of the column you want to filter by, and select the filter option you want.
3. In the row beneath the drop-down list, enter the desired filter criteria.
4. Repeat the two previous steps for any other columns you want to filter.
5. Click the **OK** button. The table is filtered according to the selected criteria, the filter is set as the default, and the Filter dialog box closes.

Note: You can view the filter by clicking on the Apply button, but if you click Exit, the applied filter will be undone before the dialog box closes.

Saving a User-Defined Filter

Once you create a filter, you can save it for future use. To save a filter, click on the **Save** button in the Filter Dialog box and name the filter. The system automatically applies the filter. The filter name appears in the Current Filter option menu in the Filter Dialog box as well as the Filter menu in the actual window.

Editing and Deleting Saved Filters

To edit a saved filter, select the filter from the Current Filter drop-down menu in the Filter Dialog window.

To delete a saved filter, select it from the Current Filter drop-down menu and click **Delete**.

Printing

In many windows, you can print a window capture of the current active window to a PostScript printer. Some windows can also generate ASCII and/or multi-page PostScript output.

Choose the **Print** option on the **File** menu to open the Print dialog box.

Print Dialog

The Print dialog displays the following information:

- **Printer Name** contains the name of the printer. Click the **Change Printer...** button to choose a different printer.
- **No. of Copies** specifies the number of copies to be printed.
- The **Page Options** area allows you to select what to print. The Current Screen option prints the current active window, while the All Pages option prints all information (in a table, for instance), even if it is not all visible in the current active window.
- The **Output Type** area allows you to select what type of output to print.
 - The Screen Capture option prints the screen as it appears on the user's display.
 - The Table option prints all data in a table as text without the graphical user interface.
 - The ASCII option prints ASCII format output, if available.
 - The PS Print Preview option presents the PostScript data as an HTML page in a browser for previewing, if available. The PS Print option sends the PostScript data (which is displayed with the PS Print Preview option) directly to the printer.
- The **Processing** area allows you to select the color quality of the printed output, which is Color, Halftone, or Black & White. The Reverse Color option produces output with colors reversed.
- The **Print Size** area allows you to select the orientation of the printed output, either Landscape or Portrait.
- The **Page Size** area allows you to select the paper size of the printed output, which is configurable for multiple sizes (e.g., 8.5 x 11.0).

Logging In

The Oracle Utilities Network Management System Login window is the first window you see in Operator's Workspace. In the lower left corner a status indicator displays a “services ready” message (in green) to indicate that the Oracle Utilities Network Management System services are operational (or “services not ready” in red to indicate they are not operational).

This section includes the following topics:

- **Logging In to Operator's Workspace**
- **User Types**
- **Changing Your Password**

Logging In to Operator's Workspace

To log in, complete these steps:

1. From the Login window, make sure “services ready” appears in the lower left corner of the window.
2. Click on the **Login** button. The Login dialog box opens.
3. In the User Name field, type your user name (as assigned by your system administrator) and press the <Tab> key.

4. If you want a user type other than the default, select a user type from the User Type drop-down menu. See the following section for a description of each user type.
5. Type your Password. Passwords are case-sensitive.
6. Click **OK**. The system validates your password and proceeds to log you in if the validation was successful. Once you log in, the system starts the windows and functions available for that user type.

User Types

The User Type determines which windows are available and which functions you can perform once you login. User types include:

- **Full Operations** - Provides full access to all end-user Oracle Utilities Network Management System modules and their functions.
- **Trouble Operations** - Provides full access to all Oracle Utilities Network Management System - Trouble Management functions. Also provides access to a subset of the Oracle Utilities Network Management System - Power Flow and Oracle Utilities Network Management System - Suggested Switching functions related to Oracle Utilities Network Management System Trouble Management.
- **Trouble Maintenance** - Provides access to a subset of Oracle Utilities Network Management System Trouble Management functions suitable for maintaining, updating, and completing trouble records.
- **Switching Operations** - Provides full access to the Oracle Utilities Network Management System - Switching Management functions. Also provides access to a subset of the Oracle Utilities Network Management System Power Flow and Oracle Utilities Network Management System Suggested Switching functions related to Oracle Utilities Network Management System Switching Management.
- **Switching Prep** - Provides access to a subset of Oracle Utilities Network Management System Switching Management functions suitable for preparing switching plans but does not allow switching plans to be executed.
- **Switching Request** - Provides access to a subset of Oracle Utilities Network Management System Switching Management functions suitable for preparing switching requests, but does not allow switching plans to be recorded or executed.
- **Administration** - Provides the SQL Admin tool for updating the database, as well as the View Area, Trouble Call Entry, and Outage Callbacks tools.
- **Model Validation** - Provides access to the tools necessary to review and maintain the Oracle Utilities Network Management System model.
- **Crew Operations** - Provides access to a subset of the Oracle Utilities Network Management System Trouble Management functions suitable for administering crews but does not allow actual dispatching of crews.
- **View Only** - Provides access to summary tools and a graphical Viewer for reviewing status of operations but does not provide the ability to modify crews, the status of events, or switching plans.
- **Outage Correction** - Provides access to the tools necessary to perform outage correction tasks.

Changing Your Password

You can also use the Login dialog box to change your password.

Note: This option is disabled when Oracle Utilities Network Management System is configured to use LDAP authentication.

To change your password, complete these steps:

1. From the Login dialog box, type your user name in the User Name field and press the <Tab> key to move to the Password field.
2. Type your password.
3. Select your user type from the User Type drop-down menu.
4. Click the **Change Password** button. A Change Password dialog box opens.
5. Type your new password in the **New Password** field.
6. Retype your new password in the **Verify Password** field to verify the change.
7. Click the **OK** button. You are returned to the Oracle Utilities Network Management System Login screen.
8. Type your new password in the Password field to finish logging in.
9. Click the **OK** button.

Using the Environment Manager

The Environment Manager contains buttons for starting windows and managing the visual workspace. It appears on the right side of the desktop. The title bar indicates which environment you are logged into (e.g., Trouble Operations, Switching Management, etc.), which corresponds to the user type you selected when you logged in.

This section includes the following topics:

- **Annunciators**
- **Environment Manager Buttons**
- **Toolboxes**
- **Viewers**
- **Administrative Tools**
- **Monitor Selector (Optional)**
- **Logging Out**

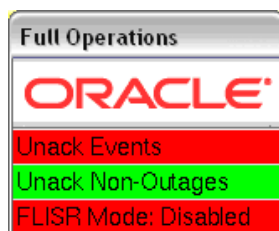
Annunciators

Annunciators alert you to three types of unacknowledged events:

- Alarms
- Outage Events
- Non-Outage Events

If there are any unacknowledged alarms or outage events, the Unack Events annunciator changes from green to red. If there are any unacknowledged non-outage events, the Unack Non-Outages annunciator changes from green to red.

The annunciators section of the Environment Manager window also tells you which mode the Fault Location, Isolation, and Service Restoration (FLISR) module is running in.



See **Fault Location, Isolation, and Service Restoration** on page 18-1 for more details.

Environment Manager Buttons

The Environment Manager provides a column of buttons for opening primary Oracle Utilities Network Management System Operator's Workspace, Trouble Management, and Switching Management windows.

The following table describes how to use the buttons on the Environment Manager window to open primary windows.

Button	Item Opened	Description
All	All List in Work Agenda	Displays events of any status with associated system and event information.
To Do	To Do List in Work Agenda	Displays events that have not yet been assigned or placed en route, along with associated system and event information.
In Progress	In Progress List in Work Agenda	Displays events associated with crews, along with associated system and event information.
Incomplete	Incomplete List in Work Agenda	Displays events that have been completed in the field but do not have information entered for them in the Event Details screen, along with associated system and event information.
Complete	Complete List in Work Agenda	Displays completed events with associated system and event information.
Authority	Authority window	Lets you manage control and monitoring of discrete zones of the operations area by subscribing particular users.
Crew Actions	Crew Actions window	Provides a visual representation of crews available for the subscribed authority zones.
Crew Admin	Crew Administration window	Enables you to create, activate and deactivate crews.
Crew List	Crew List window	Displays a list of crews and specific information about each crew.
Open Switching Plan	Switching Plan Editor window	Allows you to open an existing switching plan or create switching plans for planned or emergency switching.

Button	Item Opened	Description
Switching Plan List	Switching Plans list in Work Agenda	Displays all saved switching plans.
Safety Doc List	Safety Documents list in Work Agenda	Displays all saved safety documents.
New Switching Plan	Switching Plan Editor (with a new switching plan number automatically assigned)	Allows you to create switching plans for planned or emergency switching operations.

Toolboxes

The Environment Manager toolboxes provide access to secondary Oracle Utilities Network Management System windows. There are two standard toolboxes: a Summaries toolbox and a Miscellaneous Tools toolbox. Depending on whether or not Fault Location, Isolation, and Service Restoration (FLISR) is licensed for your system, there could be a third toolbox for FLISR tools.



The **Summaries** toolbox contains several summaries, including:

- Note Summary - See **Using the Note Summary** on page 1-56
- Tag Summary - See **Using the Tag Summary** on page 1-57
- Abnormal Device Summary - See **Using the Abnormal Device Summary** on page 1-58
- Trouble Summaries
- SCADA Summary - **Using the SCADA Summary** on page 1-59
- Feeder Status Summary
- Feeder Tiecap Summary

The **Miscellaneous Tools** toolbox contains various tools, including:

- Trouble Call Entry - See **Web Call Entry** on page 8-1
- Study Session Control
- Model Changes - See **Using the Model Validation Environment** on page 1-62
- Create Event
- Substation Suggested Switching
- Volt/Var Optimization
- Device Commission Tool

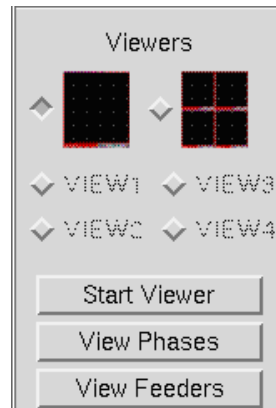
The **FLISR** toolbox allows you to change the mode of operation of the FLISR module between Disable, Manual, and Automatic. The toolbox also contains various tools, including:

- Disable
- Manual
- Automatic
- FLISR Disable Summary

- FLISR Conditions
- Exit

Viewers

The Viewers section of the Environment Manager controls the display of the Viewer. For details on starting the different Viewers, see **Opening the Viewer** on page 1-20.



Administrative Tools

The last three buttons on the Environment Manager perform basic functions.

- **Help** brings up the Help Information dialog.
- The **Refresh Apps** button refreshes any windows that have aborted unexpectedly. Use this button to restart a window without having to logout and log back in.
- The **Logout** button allows you to log out of the system. A message appears indicating Logout in progress. If there are unacknowledged or unassigned events, the system prompts for confirmation of the logout request.

Monitor Selector (Optional)

If you are logging into a UNIX desktop system with multiple CRT monitors, you will see the monitor selector on the Environment Manager. If you are logging into a Windows PC with multiple windows, you will not see this selector because you can drag windows across different monitors. Since the UNIX desktops do not allow you to drag windows from one monitor to another, you must select which monitor to open a window on.

The monitor selector appears as a set of radio buttons on the Environment Manager, the same number as there are available monitors. For example, in a four-monitor configuration, if you select the third radio button and click on the Authority button, the Authority window opens on the third monitor.

Some windows have a designated monitor assignment and appear only on that monitor when started. If a workstation has fewer monitors than the window's designated monitor assignment, the window will appear on the monitor with the nearest available number. For example, in a dual monitor system, a window with a monitor-3 designation would start on the second monitor.

Logging Out

To log out of Environment Manager, complete these steps:

1. Click the **Logout** button on the Environment Manager. If you have unacknowledged events or unassigned acknowledged events in your Work Agenda Trouble Events Lists at the time you logout, a dialog box opens asking if you want to proceed with the logout.

2. Click **OK** to proceed with the logout.

Taking Authority

Control zones are the discrete sections of a utility's electrical distribution system for which users are responsible. Control zones can have child zones nested within them. Multiple users can have control over the same zone. You must take authority of control zones in order to see the trouble events, manage the crews, and perform device operations in those areas.

Use the Authority window to view the control zones within the distribution system and identify which users have authority over each zone.

This section includes the following topics:

- **Using the Authority Window**
- **Viewing Control Zone Authority**
- **Subscribing to a Control Zone**
- **Unsubscribing from a Control Zone**
- **Searching for a Zone**
- **Unassigned Control Zone Alarm**
- **Using Control Zone Groups**

Using the Authority Window

To access the Authority window, click the **Authority** button on the Environment Manager.

The Authority window displays the following fields and buttons:

- The **I am** field displays the name of the user who is logged in.
- **Rule Set Name** is the analysis mode rule set that Trouble Management uses for the control zone.
- The **All Zones** area displays the control zones in the distribution system. Buttons at the bottom of the window allow you to filter which zones display (e.g., All Zones).
- **Zone Users** displays the user(s) currently subscribed to the selected control zone. If no user is subscribed to the selected control zone, “system” displays in this field.
- **Control Zone** lists the control zones(s) currently selected. Selected control zones are indicated by a blue highlight on the row.
- **Rule Set** lists the analysis mode rule set for a selected control zone. (Use the **Change Rule Set...** button, described below, to change rule sets.) If more than one zone is selected, this field will be blank because each zone may have a different rule set.

Buttons

- The **All Zones** button displays the entire set of control zones, and collapses the view to display only the top-level zone.
- The **My Zones** button displays only those zones to which the current user is subscribed.
- The **Users' Zones** button displays all zones that are not controlled by the system (i.e., have been subscribed to by one or more users).
- The **System Zones** button displays only those zones controlled by the system (i.e., have not been assigned to a user).
- The **Subscribe** button gives you control of the currently selected zone(s), which are displayed in the Control Zone field.

- The **Unsubscribe** button relinquishes control of the currently selected zone(s), which are displayed in the Control Zone field.
- The **Zone Search** button allows you to search for a zone by entering its name in a search dialog. If the system finds a match, the list of control zones expands and the matching zone is highlighted.
- The **Change Rule Set...** button allows you to change the analysis mode rule set used to analyze events in the selected zone.
- The **Groups** button allows you to take control of a group of frequently used control zones.
- The **Clear** button clears the list of control zones in the Control Zone field and de-selects the rows for those control zones.
- The **Exit** button exits the Authority window.

Viewing Control Zone Authority

To view control zone authority, complete these steps:

1. Click the **Authority** button on the Environment Manager. The Authority window opens with a list of all the control zones and the users who are assigned to them.
2. Click the + sign next to a zone to expand any collapsed zones and display all sub-zones within it.
3. Click the - sign next to a zone to collapse any zones.

Subscribing to a Control Zone

To subscribe to one or more control zones, complete these steps:

1. If the Authority window is not open, click on the **Authority** button on the Environment Manager to open it.
2. Expand the list of control zones (click the + signs) to locate the zone(s) you want to control.
3. Select the row(s) for the zone(s). The zone(s) will populate the Control Zone field.
4. Click on the **Subscribe** button. The Control Subscribe Request dialog box opens.
5. Click on the **Subscribe** button. You now have control over the zone(s) and your user name is listed in the Zone Users column.

Unsubscribing from a Control Zone

When you are finished working in a control zone, you can unsubscribe from the control zone. To unsubscribe, complete these steps:

1. If the Authority window is not open, click on the **Authority** button on the Environment Manager to open it.
2. Expand the list of Control zones (click the + signs) to locate the zone(s) you want to unsubscribe from.
3. Select (click on) the row(s) for the zone(s). The zone(s) will populate the Control Zone field.
4. Click on the **Unsubscribe** button. The Control Unsubscribe Request box opens.
5. Click on the **Unsubscribe** button in the dialog box. You no longer have control over that zone and your user name is removed from the Zone Users column.

Searching for a Zone

The Search feature can help you locate a control zone more quickly than expanding and viewing zones in the Authority window. To search for a zone, complete these steps:

1. In the Authority window, click on the **Zone Search** button. The Authority dialog opens.

2. Enter the name of the control zone in the Zone field.
Note: This field is case-sensitive. You do not have to enter the complete name of the control zone.
3. Click on the **Find Next** button. If the system finds a match, the list of zones expands and the row that matches your search is selected.
4. If there are multiple matches, click the **Find Next** button to locate the next control zone that matches your search criteria.
5. When you have located the zone you want, click the **Cancel** button to close the search dialog box.

Unassigned Control Zone Alarm

If your workstation shuts down unexpectedly, the system automatically unsubscribes you from your control zones. If there are no other users subscribed to these zones, other users will receive an alarm to let them know that there are control zones that are not being monitored. They can view the unassigned zone alarms in the System Alarms list in the Work Agenda window.

Using Control Zone Groups

If you have a group of Control Zones you are frequently responsible for, your system administrator can create a predefined control zone group to use as a shortcut when you take authority. The groups are set up with a predefined name.

To join a control zone group, complete these steps:

1. Click the **Groups** button on the Authority window. A dialog box opens displaying the available groups.
2. Click the group you wish to join.
3. Click the **OK** button to join the group and close the dialog box.
4. Click the **Apply** button to join the group and keep the dialog box open.

Using the Operator's Workspace Viewer

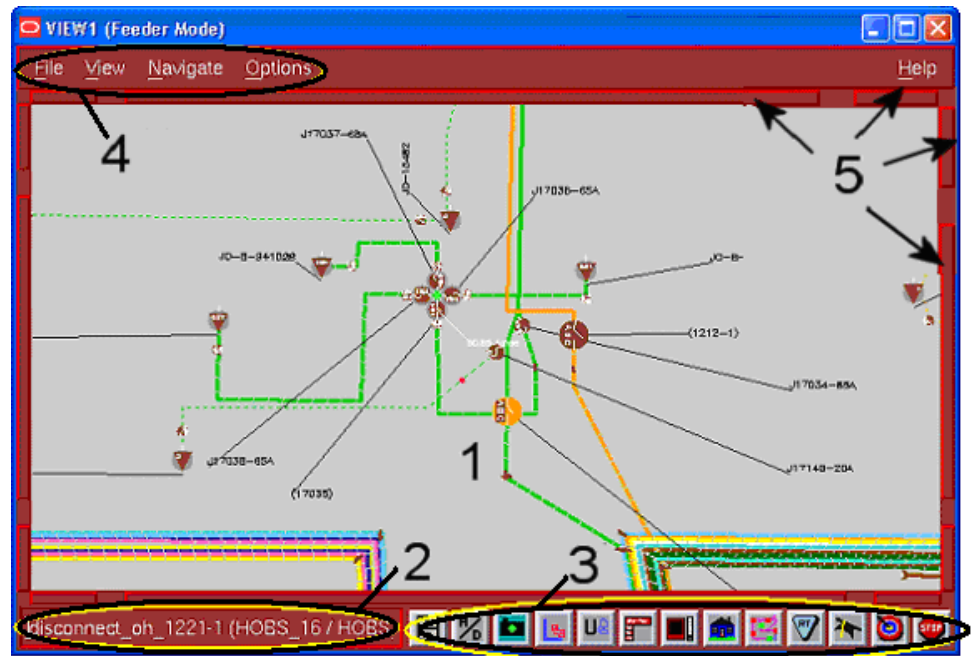
The Viewer presents a graphical representation of the electrical distribution system, with additional symbology for conditions such as outages, crew locations, notes, tags, etc. The Viewer dynamically updates with condition and electrical distribution changes.

Viewer topics include:

- **Functional Areas**
- **Opening the Viewer**
- **Changing Viewer Display Options**
- **Searching and Loading Viewer Maps**
- **Navigating in the Viewer**
- **Panning and Zooming**
- **Focusing on a Device in the Viewer**
- **Using the Feeder Focus**
- **Using Real-Time and Study Modes**
- **Selecting Devices**
- **Identifying Symbology**
- **Hiding and Displaying Viewer Objects**
- **Setting Viewer Preferences**
- **Tracing from a Device**
- **Using Cameras**
- **Viewing Schematics**
- **Commissioning or Decommissioning Devices**

Functional Areas

The Viewer window has five basic functional areas, as shown in the following figure:



The following table describes the five functional areas of the Viewer window.

Area	Description
1	The drawing area where the distribution system is displayed.
2	The message area, which displays a description of actions taken (e.g., tracing to devices) or the selected object and current feeder name.
3	The toolbar with buttons providing access to Viewer functions.
4	The menu bar, also providing access to Viewer functions.
5	Pan bars allowing you to pan up, down, or across maps.

Drawing Area

The drawing area of the Viewer window displays dynamic maps that reflect the real-time status of the system (when the Viewer is in real-time mode). The icons and lines used to represent devices and conductors are called symbols, and the conventions that govern them are referred to as “symbolology.”

Message Area

The message area of the Viewer window displays textual messages. It displays the name of the selected device, notices of mode changes, warnings, and error messages. For example, when you select a device, the message area displays the device and feeder name.

Toolbar

The toolbar provides buttons for accessing commonly used Viewer functions.

- The **Search** button  opens the Search dialog box, which enables you to display a map in the drawing area that contains a specific device, area, customer name, etc.
- The **Hide/Display** button  opens the Hide/Display dialog box, allowing you to select what object types are displayed in the drawing area.
- The **Camera** button  opens the Camera dialog box, which lets you view map detail while keeping a visual relationship to the larger view.
- The **Load Maps** button  loads all maps in the visible drawing area. If you move to an area of the Viewer that is not displaying a map, select the Load Maps option. The map partitions load, and the message area indicates how many partitions were loaded.
- The **Unload Maps** button  unloads all maps, not just those in the visible drawing area.
- The **Menu** button  toggles the menu bar at the top of the Viewer window on and off.
- The **Environment Manager** button  toggles the Environment Manager on and off. If the Environment Manager is toggled off and the Viewer is then stopped, the Environment Manager will reappear.
- The **Outage Augmentation** button  opens the Supply Point Selection dialog, which puts the Viewer in Supply Point Selection mode.
- The **Trace** button  opens the Trace dialog box, used for showing the path from a selected device to other devices based on selected criteria.
- The **Real-Time** button  sets the Viewer to real-time mode. Real-time mode displays the actual state of the distribution system. For more information on real-time mode, see **Using Real-Time and Study Modes** on page 1-25.
- The **Study** button  sets the Viewer to study mode. Study mode allows you to make changes without affecting the actual state of the distribution system. Changes made in study mode are not visible to other users. For more information on study mode, see **Using Real-Time and Study Modes** on page 1-25.
- The **Object Focus** button  centers the Viewer drawing area on the currently selected object, allowing you to focus the Viewer on a device associated with a selection (e.g., event, crew, etc.) in another window.
- The **Stop** button  exits the Viewer window.

Menu Bar

The Viewer window has four menus: File, View, Navigate, and Options. Many menu options and their associated dialog boxes have keyboard shortcuts that are indicated to the right of the menu option.

File Menu

The File menu is used to control the pieces of the map (called partitions) that are currently being displayed. The following table describes the File menu options.

Option	Description
Search	Opens the Search dialog box, which enables you to display a map in the drawing area that contains a specific device, area, customer name, etc.
Load Maps	Loads all maps in the visible drawing area. If you move to an area of the Viewer that is not displaying a map, select the Load Maps option. The map partitions load and the message area indicates how many partitions were loaded.
Unload Maps	Unloads all maps (not just those in the visible drawing area).
Print	Prints the drawing area contents.
Exit	Exits the Viewer window.

View Menu

The View menu is used to turn on and off the functional areas of the Viewer window and object types in the drawing area. The following table describes the View menu options.

Option	Description
Menu Bar	Toggles the menu bar at the top of the Viewer window on/off.
Bottom Toolbar	Toggles the Viewer toolbar on/off.
Pan Bars	Toggles the Viewer pan bars on/off.
Message Area	Toggles the Viewer message area on/off.
Big Symbols	Toggles Big Symbols on/off. See Viewing Big Symbols on page 1-30 for more information.
Hide/Display ...	Opens the Hide/Display dialog box, allowing you to select what object types are displayed in the drawing area.

Navigate Menu

The Navigate menu is used to select different ways to move about the map. The following table describes the Navigate menu options.

Option	Description
Pan/Zoom...	Opens the Pan & Zoom dialog box, used for panning across and zooming in and out on maps.

Option	Description
Object Focus	Centers the Viewer drawing area on the currently selected object, allowing you to focus the Viewer on a device associated with a selection (e.g., event, crew, etc.) in another window.
Feeder Focus	Activates Feeder Focus, allowing you to select an object in the Viewer and view all objects on the same feeder as the selected device.
Incremental Feeder Focus...	While in Feeder Focus mode, displays a list of the adjacent feeders and allows you to incrementally add them to the display.
Camera...	Opens the Camera dialog box, which enables you to see map detail while keeping a visual relationship to the larger view.

Options Menu

The Options menu is used to change the different modes of the Viewer and select preferences. The following table describes the Options menu options.

Option	Description
Real Time	Sets the Viewer to real-time mode. Real-time mode displays the actual state of the distribution system. For more information on real-time mode, see Using Real-Time and Study Modes .
Study	Sets the Viewer to study mode. Study mode allows you to make changes without affecting the actual state of the distribution system. Changes made in study mode are not visible to other users. For more information on study mode, see Using Real-Time and Study Modes .
Trace...	Opens the Trace dialog box, used to show the path from a selected device to other devices based on selected criteria.
Preferences...	Opens a dialog box for setting Viewer preferences.

Pan Bars

Pan bars allow you to move around maps using your mouse. To view a different area of the map, click on the pan bar that is on the side of the map you want to view. The pan bars in the corners allow you to move diagonally. For example, click the pan bar in the upper left corner to move up and to the left in the map.

Opening the Viewer

You can open a single large Viewer window or up to four smaller Viewer windows and then switch between them.

Opening a Single Viewer

To open a single Viewer window as large as possible without obscuring the Environment Manager or Work Agenda window, complete these steps:

1. From the Environment Manager, click the single large Viewer icon:



2. Click **Start Viewer**.

Opening Up to Four Smaller Viewer Windows

To open other Viewers, click **Start Viewer** with one of the small Viewer icons toggled on **VIEW1**, **VIEW2**, **VIEW3**, and **VIEW4**.

Switching Between Viewer Windows

With more than one Viewer running, you can toggle between them using the **VIEW1**, **VIEW2**, **VIEW3**, and **VIEW4** buttons. Each button is only enabled if its Viewer is running. Once you open a Viewer window, you can resize it.

If the Viewer window is minimized or hidden behind other windows, you can toggle back to it by clicking on the **VIEW1**, **VIEW2**, **VIEW3**, or **VIEW4** button, depending on which Viewer window you want opened.

Changing Viewer Display Options

Use the procedures in this section to change the way objects appear in the Viewer.

Viewing Phases and Feeders

Viewer windows open by default in feeder coloring mode. In this mode, all conductors fed from a given feeder are displayed in the same color. The title bar displays (Feeder Mode) in addition to the Viewer name.

Displaying Conductor Coloring by Phases

To change all open Viewer's drawing areas to show conductor coloring by phases, click the **View Phases** on the Environment Manager (in the Viewers section). In this mode, one and two phase conductors appear in the standard phase colors. Clicking this button changes the mode of all active Viewer windows. The title bar now displays (Phase Mode) in addition to the Viewer name.

Displaying Conductor Coloring by Feeders

To change all open Viewer's drawing areas to show conductor coloring by feeders, click the **View Feeders** button on the Environment Manager (in the Viewers section). Clicking this button changes the mode of all active Viewer windows.

Note: To have one Viewer window show phase coloring and another Viewer window to show feeder coloring, open one Viewer window and click on the **View Phases** button. Then open another Viewer. The new Viewer will open by default in feeder coloring.

Searching and Loading Viewer Maps

In order to view a specific geographic area, you must load the map for that area. Devices and objects that are located within that geographic area will display on the map in the drawing area. To load a map, you can first select an area using the Search dialog box.

Using the Search Tool to Locate Map Areas and Objects

To locate a particular area or object in the Viewer, complete these steps:

1. Do one of the following to display the Search dialog:
 - Click the **Search** button on the toolbar, or
 - Select **Search** from the File menu. The Search dialog box appears.
2. In the Search dialog box, click on the search type (e.g., Feeder, Device, etc.).
3. Enter the term you want to search for in the text field (i.e., Enter Feeder/Device/etc.). You can also enter a partial term or no term at all.
4. Click the **Search** button.

- If there is a match, the Viewer loads the appropriate maps. The device or area you searched for is centered in the drawing area.
- If you did not enter a term, a dialog box opens displaying a selection list of up to the first 100 items for the search type. Select the term from the list and click **OK**.
- If you entered a partial term, the dialog box displays the first 100 matches that include the partial term in numeric or alphabetic order.
- If there is no match, a message box indicates that the search failed.

Loading Viewer Maps

Once you have located an area or object using the Search dialog box, you can navigate to an adjacent area where the maps are not yet loaded. From here, you can load all the maps that should appear in the drawing area.

To load maps, do one of the following:

- Select **Load Maps** from the File menu,
- Press the <m> key, or
- Press the **Load Maps** button on the toolbar

Unloading Viewer Maps

To unload all maps (not just those in the visible drawing area), do one of the following:

- Select **Unload Maps** from the File menu,
- Press the Shift + <u> key, or
- Press the **Unload Maps** button on the toolbar

Navigating in the Viewer

There are a number of ways to navigate around the Viewer:

- Panning across, up, or down the maps using the **Pan Bars**
- **Navigating Using Mouse Controls**
- **Navigating Using the Keyboard**
- **Panning and Zooming**

Navigating Using Mouse Controls

To zoom in on the Viewer using the mouse, complete these steps:

- Move the pointer to the first corner of the area you want to zoom into and click the center mouse button.
- Move the pointer to the opposite corner of the area you want to zoom into and click the center mouse button. The area you designate expands to fill the drawing area.

To zoom out, press the <Ctrl> key on your keyboard and hold it down while you complete the above steps. The Viewer zooms out, centering on the designated area. To zoom out, you can also press the right mouse button. The Viewer will zoom out in increments.

The following table shows all of the mouse commands for the Viewer.

To...	Do this...
Select an object	Click the left mouse button.

To...	Do this...
Define the zoom in area	Click the center mouse button once to begin drawing the rectangle and a second time to complete drawing the rectangle.
Zoom out	Click the right mouse button or scroll down using your mouse scroll wheel.
Define the Camera window area	Press and hold the <Shift> key and click the middle mouse button once to begin drawing the rectangle and a second time to complete drawing the rectangle.
Zoom in	Press and hold the <Ctrl> key and click the right mouse button or scroll up using your mouse scroll wheel.
Select multiple objects	Click and hold the left mouse button and drag the pointer across the objects you want to select. This opens a dialog box listing all objects in the selected area.
Move the Camera viewing rectangle	Press and hold the <Shift> key, click the left mouse button on the Camera viewing rectangle and drag to a new area.
Open the Control Tool window	Double-click the left mouse button on the object.

Navigating Using the Keyboard

You can pan across, up, or down the maps and zoom in or out using the numeric keypad on your keyboard.

- To pan, turn your Num Lock on (by pressing the <Num Lk> key) and press any number (besides “5”). The map moves in the direction of the button on the keypad. For example, if you press “8,” the Viewer will pan up; if you press “7,” the Viewer will pan up and to the left.
- To zoom, turn your Num Lock off (by pressing the <Num Lk> key) and press “8” to zoom in and “2” to zoom out.

The following table shows all of the keyboard shortcuts for the Viewer.

To do this...	Use this keyboard shortcut...
Zoom In	Number Pad UP ARROW (Num Lock off)
Zoom Out	Number Pad DOWN ARROW (Num Lock off)
Zoom Out to see all maps loaded	Number Pad 0 (Num Lock on)
Zoom to Pre-defined Levels	1-5 (keys above alphabet)
Zoom to Previous Level	p
Panning	Number Pad Keys (1, 2, 3, 4, 6, 7, 8, 9) (Num Lock on)
Center the Selected Object	Number Pad 5 (Num Lock on)
View a Single Feeder (Feeder Focus)	Select a device and press the F key
Display control zone information of the selected object	o

To do this...	Use this keyboard shortcut...
Increase/Decrease Symbol Size	SHIFT + S / S
Turn on/off magnification of text, which keeps text readable while zoomed out	SHIFT + R
Increase/Decrease Text Size	SHIFT + T / T
Increase/Decrease Attribute Size	CTRL + S / CTRL + SHIFT + S
Reset all Symbol and Text Sizes	r
Toggle Electrical Layer On/Off	e
Toggle Background Layer On/Off	b
Toggle Text On/Off	d
Load Maps to fill Viewer	m
Unload All Maps	SHIFT + U
Toggle Menu On/Off	x
Print Viewer	CTRL + p
Exit Viewer window or Camera	CTRL + X
Show Selected Object's Location and Feeder(s)	a
Show Selected Object's Location Only	SHIFT + A
Show the (x, y) Coordinate and Map Name at the Pointer Position	l
Show the Distance from the Pointer Position to the Previous 'L'-Key Pointer Position	SHIFT + L
Move the Camera window to a Different Corner of the Viewer (Does not change the focus of the Camera)	c

Panning and Zooming

To open the Pan and Zoom dialog box, select **Pan/Zoom...** from the Navigate menu. The Pan/Zoom dialog displays the following items:

- The **Predefined Zoom Levels** area contains buttons that zoom in or out of the map at predefined zoom levels, with **1** zooming in closest and **5** zooming out the farthest.
- The **Zoom Control** area contains buttons that deal with controlling zoom settings. The “big mountain” button zooms in. The “small mountain” button zooms out. The **MAX** button zooms the Viewer out to show the maximum area of maps loaded. The **BOX** button provides instructions on how to use the box zoom feature and the mouse buttons. The **PREV** button returns the Viewer to its previous zoom level as set by the last box zoom.
- The **Pan Control** area contains buttons that deal with Viewer panning. The arrow buttons cause the Viewer to pan across the map in the direction of the arrow. The **CENTER** button causes the Viewer to center on the last selected device.

- The **Message Area** provides textual cues instructing you on how to use the box zoom feature. This text displays when you click the **BOX** button in the Zoom Control area of the window.
- The **Exit** button closes the Pan/Zoom dialog.

Focusing on a Device in the Viewer

The object focus feature allows you to focus on a specific device in the Viewer that is associated with a selected field in another window.

For example, if you select an event row in the Work Agenda and click the **Object Focus**  button in the Viewer window, the Viewer finds the selected device, loads the required maps, and adjusts the pan and zoom to show the device in the center of the Viewer drawing area.

To focus on a device, complete these steps:

1. Select the event row in the Work Agenda.
2. Click the **Object Focus** button in the Viewer. The device associated with the event displays in the Viewer.

Using the Feeder Focus

At times, you may want to view only the devices on the same feeder as the selected device. The Viewer offers a Feeder Focus feature that traces from the selected device back to its feeder breaker and to all downstream devices on the same feeder.

Note: The Feeder Focus feature uses the real-time status or the status from the current study session. It does not display devices that may be part of the feeder in the nominal configuration but are not currently part of the feeder.

The Feeder Focus feature should not be used at times of heavy system activity such as those that occur when there are many outages in the system caused by major events and storms.

To use the Feeder Focus feature, complete these steps:

1. Select a device in the Viewer drawing area.
2. Select **Feeder Focus** from the Navigate menu. All symbols disappear except the feeder the device is on.
3. To turn Feeder Focus off and show all the symbols again, select **Object Focus** from the Navigate menu.

Unlike tracing (see **Tracing from a Device**), no other electrical devices are shown except those on the selected feeder. The Feeder Focus will not include de-energized downstream devices. While in Feeder Focus, you can still use Hide/Display, Declutter, and Big Symbols.

Using Real-Time and Study Modes

Oracle Utilities Network Management System applications start in real-time mode, where every action you perform is applied to the real-time model and displayed to all users. Certain windows (the Viewer, Control Tool, and Switching Plan Editor) allow you to change to study mode, where your actions are reflected in your study session on your workstation, but not recorded in the real-time model. Study mode is especially useful in “what if” studies, when you need to evaluate the effects of an action before you record it in real-time.

When in real-time mode, the Viewer displays status, topology, and condition information based on real-time operations information. All changes to these items made by any user in real-time mode are reflected on all real-time Viewers in the system.

When in study mode, the Viewer displays only status and topology changes you make on your workstation. Changes made in your study session are not reflected in the real-time model, and likewise changes made in real-time are not reflected in your study session.

A study session is created for a specific workstation the first time you put the Viewer into study mode. The study session is initially created as a copy of the current real-time model. From that point on, changes in the study session and real-time are independent of each other, with the exception that real-time outage and truck symbols will display in study mode. However, these symbols should be ignored since they are not applicable to study sessions. You can reset the study session to current real-time by using the Study Session Control tool. In addition, some Switching Management actions can also cause study session resets. Please refer to **Chapter 14: Switching Management** for more information.

Starting Study Mode

To toggle the Viewer to study mode, either:

- Select **Study** from the Options menu, or
- Click the  button on the toolbar.

The Viewer window borders and dialog boxes change color to gray.

You can reset the study session to either the current real-time model or the nominal model using the Study Session Control dialog box in the Environment Manager Miscellaneous Tools toolbox.

Resetting Study Mode

To reset the study session to the current real-time model or the nominal model, complete the following steps:

1. Open the Misc. Tools toolbox on the Environment Manager.
2. Select the **Study Session Control** button in the Misc. Tools box. The Study Session Control dialog box appears.
3. Do one of the following:
 - Press the **Real Time** button to reset the study session to the current real-time model.
 - Press the **Nominal** button to reset the study session to the nominal model.
 - Press the **Close Session** button to close the current study session.

The Study Session Control dialog box disappears after the action.

Starting Real-Time Mode

To toggle the Viewer back to real-time mode, either:

- Select **Real Time** from the Options menu, or
- Click on the  button on the toolbar.

The Viewer window borders and dialog boxes change color back to red.

Selecting Devices

Selecting Single Devices

To select a single device in the Viewer, simply move the mouse over the desired device and left-click the mouse. The Viewer will select the highest priority device that is closest to the mouse but still within the configured selection-radius. Problems may occur if the selection-radius is set too

high and if the area clicked has a multiple devices in close proximity. If that is the case, then you should use box selection to select the device.

Selecting Multiple Devices within a Rectangular Area

To select all devices within a rectangular area of the Viewer, left-click the mouse and drag across the Viewer window to create a selection box. When you release the left mouse button, the following occurs depending on your selection mode:

- In single-select mode, the Device Selection dialog appears and is populated with all devices present inside the selection box. To select a device, scroll through the list of device aliases in the dialog, select the desired device, and then click the **Select** button. To open the Control Tool window for the device, select the device and click the **Control Tool** button.
- In Supply Point Selection mode, the Device Selection dialog does not appear; instead, all supply points inside the box are added to the existing selections. (Use the Outage Augmentation button, described on page 1-18, to set Supply Point Selection mode.)

Selecting Multiple Devices within a Polygonal Area

To draw a more complex polygon and select all devices within that area, hold down both the <Ctrl> and the <Shift> keys and click the left mouse button (Control-Shift left-click). This places the first anchor point. Each subsequent Control-Shift left-click adds another vertex. To complete the polygon, hold down both the <Ctrl> and the <Shift> keys and click the right mouse button. The last vertex is connected to the first vertex. When you release the left mouse button, the following occurs depending on your selection mode:

- In single-select mode, the Device Selection dialog appears with all devices that were inside the polygon.
- In Supply Point Selection mode, all supply points inside the polygon are added to the existing selections. (Use the Outage Augmentation button, described on page 1-18, to set Supply Point Selection mode.)

Adding and Removing Selected Devices

When not in Supply Point Selection mode, only a single device can be selected at any given time.

When you are in Supply Point Selection mode, you can modify your existing selection as described below. (Use the Outage Augmentation button, described on page 1-18, to set Supply Point Selection mode.)

- To add a device to your selection, Shift left-click on an unselected device.
- To remove a device from your selection, Shift left-click on a selected device.
- If you hold down the <Shift> key while you are drawing a selection box, any unselected devices within the box are added to your selection and any selected devices within the box are removed from your selection.

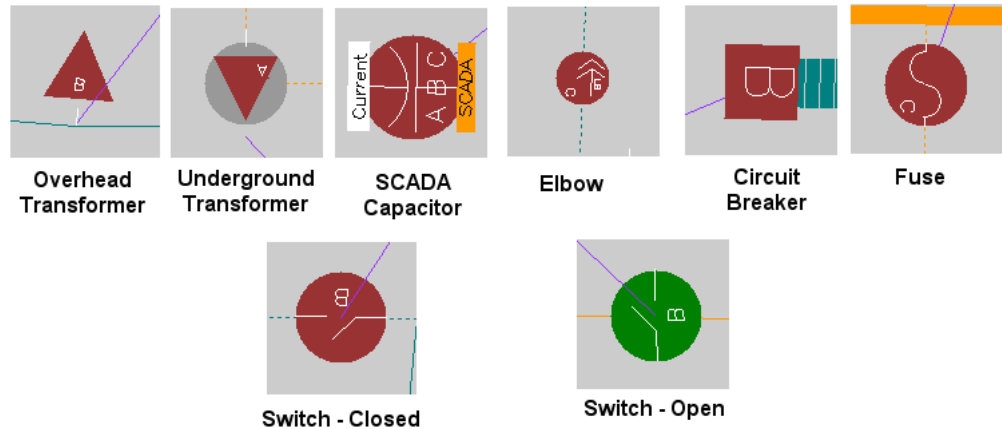
Clearing Selections

Left-clicking the mouse in an empty space in the Viewer clears your current selection. The Viewer will automatically clear your current selection when you enter or leave the Supply Point Selection mode or when you unload all maps (<Shift>-U).

Identifying Symbolology

Device Symbolology

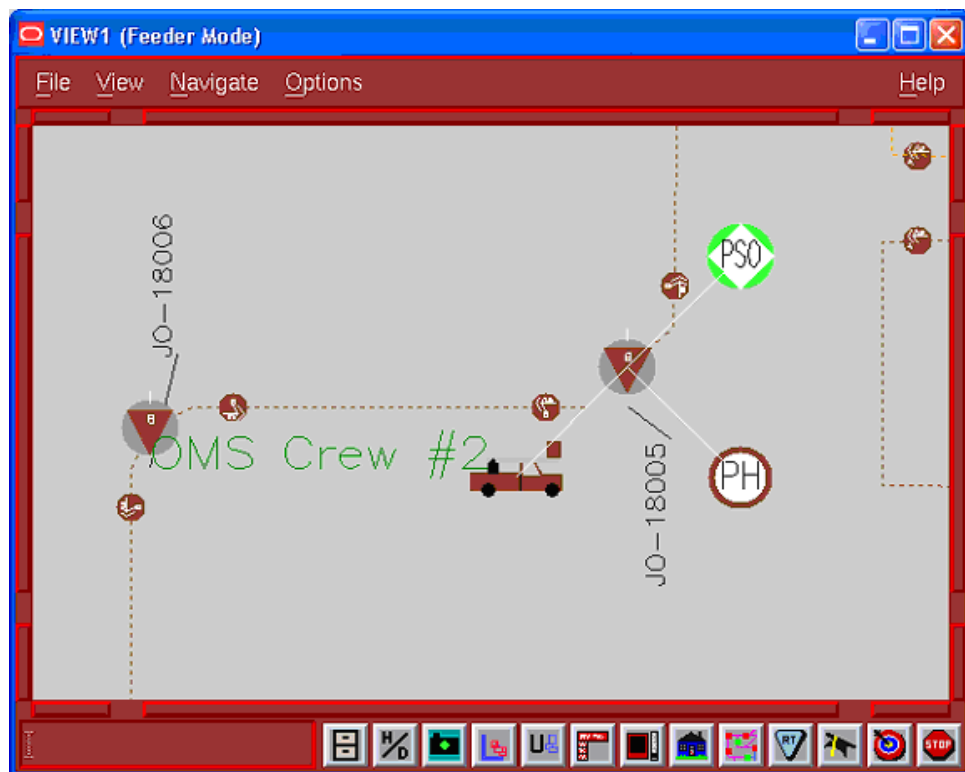
Changes in the status of a device (e.g., switches, fuses, breakers, etc.) are reflected by changes in symbology. For example, an open switch is a different color and shape than a closed switch. Standard device symbology uses certain conventions such as a red or brown device is closed, a green device is open, a large circle around a device indicates off-nominal, etc.



Condition Symbolology

Dynamic conditions on a device (e.g., “predicted service outage,” “crew on-site,” “notes,” etc.) are indicated with specific symbols attached to the device to which the conditions apply.

The following figures shows the Viewer with probable service outage, crew on-site, and pole-house wire down conditions:



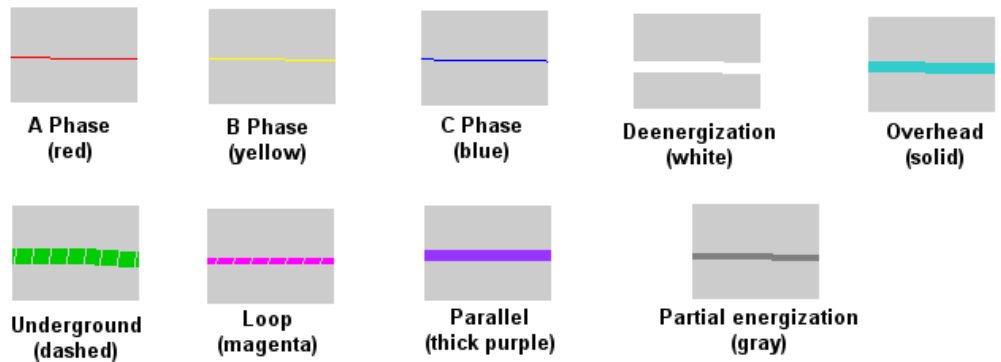
Condition symbols display in specific areas around a device or object. The following table provides examples of where condition symbols display in relation to the device they are attached to.

Area	Symbols
Above Left	Tags Safety Documents
Above Right	Probable Service/Device Outages Real Outages
Below Left	Dispatched Crews
Below Right	Notes Call Clues Associated Documents

Conductor Symbolology

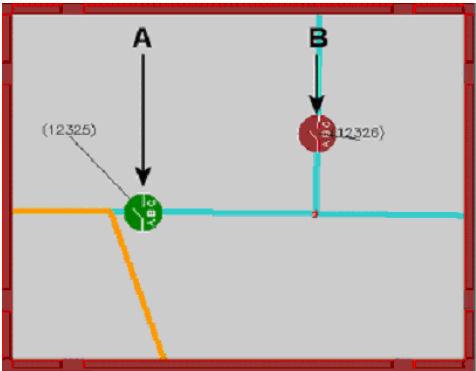
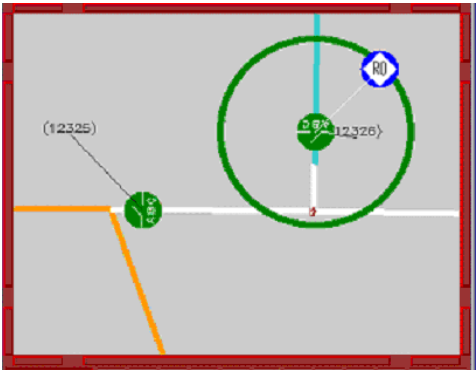
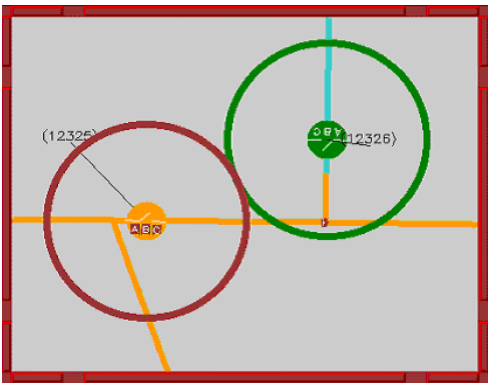
Conductor symbolology changes color, dash patterns, and thickness for different types of conductors and topology states. The figure below shows examples of standard conductor symbolology.

Note: Mesh/network symbolology is also supported.



Off-Nominal Status Symbology

The table below illustrates how symbology identifies devices in off-nominal states.

Example	Description
	Both devices are identified in their normal states. Device A is normally open while Device B is normally closed.
	When Device B is opened, an outage is created (indicated by the RO symbol) and the downstream circuit is de-energized. The symbol for device B changes from red (closed) to green (open), and a circle appears around it.
	If Device A is then closed, it changes from green (open) to red (closed) and a circle appears around it. This figure shows both A and B with off-nominal state symbology.

Viewing Big Symbols

To make the symbols for disconnects, breakers, and conditions prominent while zoomed out, click on the **Big Symbols** button from the View menu. The symbols remain large even as you zoom out but will still disappear at standard Declutter levels.

Hiding and Displaying Viewer Objects

At times, the maps in the Viewer become cluttered with symbols of all kinds. To help you focus on certain devices or conductors, the Viewer offers a Hide/Display feature that will hide classes of objects and a Declutter feature that will hide classes of objects at pre-defined zoom levels.

Hiding Objects

To hide objects in the Viewer, complete these steps:

1. Open the Hide/Display dialog box by either:
 - Clicking on the  button on the toolbar, or
 - Selecting the **Hide/Display...** option from the View menu.
2. Click on (toggle on) the options you want to hide. The Viewer will hide all of the objects you selected.
3. Click the **Close** button on the dialog box.

You can also use the drop-down menu on the Hide/Display dialog box to choose between All Objects, Backbones Only, or Backbones & Laterals. This will hide objects that are not part of the feeder level.

Decluttering the Viewer

The Viewer also automatically hides objects based on pre-defined declutter zoom levels. This allows you to only see high-level information at higher zoom levels, removing small text and other items that are no longer readable at that zoom level. When an object is decluttered, any associated conditions and text will also be decluttered. Declutter defaults to on, but you can turn it off with the Declutter (ON/OFF) option in the Hide/Display dialog box.

Displaying Hidden Objects

To display hidden objects in the Viewer, complete these steps:

1. Open the Hide/Display dialog box by either:
 - clicking on the  button on the toolbar, or
 - selecting the **Hide/Display...** option from the View menu.
2. Click on (toggle off) the options you want to display. The Viewer will display all of the objects you selected.
3. Click the **Close** button on the dialog box.

Setting Viewer Preferences

The Preferences dialog box allows you to adjust the behavior and appearance of the Viewer.

Note: Viewer preferences are unique for each Viewer opened and are not saved when the Viewer window is exited.

To open the Preferences dialog box, select **Preferences ...** from the Options menu in the Viewer window. The following table describes the preference options.

If you want to...	Do this...
Modify text size	Adjust the Text Size slide bar.
Modify symbol size	Adjust the Symbol Size slide bar.

If you want to...	Do this...
Modify attribute size	Adjust the Attribute Size slide bar.
Apply selected sizes	Click the Apply Sizes button.
Return sizes to their default size	Click the Reset Sizes button.
Adjust the number of clicks required to open the Control Tool	Select the Single Click for Control option or the Double Click for Control option.
Turn on/off magnification of text, which keeps text readable while zoomed out.	Select the Toggle Readable option.
View all proposed model changes with special symbol emphasis	Select the Highlight Proposed Model Changes option
Turn the device name text on and off	Select the Device Names option.
Set the Viewer to automatically load background maps	Select the Load Background Maps option.
Set the Viewer to unload previously loaded maps when loading new maps (to minimize memory usage)	Select the Unload Maps Before Loading New Maps option.

Once you change your settings, you must click either the **OK** or **Apply Sizes** button to activate them.

Tracing from a Device

Tracing is used to show the electrical path from a selected device to other devices based on criteria you select, in both real-time and study modes. The trace path is displayed on the Viewer by changing all conductors that are part of the path to a thick light blue.

Opening the Trace Dialog

To display the Trace dialog, select a device in the Viewer and click the  button on the Viewer toolbar or select **Trace** from the Options menu.

The Trace dialog displays the following fields and buttons:

- The **Trace To** area contains the various tracing options. The **All Connected** option traces from the device to all connected devices stopping only at an energizing source. The **Transformers** option traces from the device to all transformers in the specified direction. The **Switch** option traces from the device to the nearest switch in the specified direction. The **Source** option traces from the device upstream to the energizing source.
- The **Phases** checkboxes enable you to select specific phase(s) to trace. This defaults to all available phases on the selected object.
- The direction drop-down menu contains the options for the trace direction. The **Upstream** option constrains the trace to be only upstream of the selected device. The **Downstream** option constrains the trace to be only downstream of the selected device. The **Both Upstream and Downstream** option allows the trace to be both downstream and downstream of the selected device.

Note: Tracing all connected devices will automatically trace both upstream and downstream. Tracing to source will automatically trace upstream.

- The mode drop-down menu contains the options for the trace mode. The **RealTime** option performs the trace by using statuses currently displayed in the Viewer. The **Nominal** option performs the trace by assuming nominal statuses for all devices.

Buttons

- The **Trace** button performs a trace based on the criteria you have selected.
- The **Refresh** button removes the trace display from the Viewer drawing area and keeps the Trace Tool open.
- The **Exit** button removes the trace display from the Viewer drawing area and exits the Trace Tool.

Executing Traces

The following table describes how to execute various types of traces from the Trace dialog.

To trace...	Do this...
To all connected devices	• Select “All Connected” in the Trace To field. • Click the Trace button. The Viewer traces from the device to all connected devices stopping only at an energizing source.
To connected transformers	• Select “Transformer” in the Trace To field. • Select the direction. • Click the Trace button. The Viewer traces from the device to all transformers in the specified direction.
To connected switches	• Select “Switch” in the Trace To field. • Select the direction. • Click the Trace button. The Viewer traces from the device to the nearest switch in the specified direction.
To the energizing source	• Select “Source” in the Trace To field. • Click the Trace button. The Viewer traces from the device upstream to the energizing source.
A specific phase	• Select the phase you want to trace. • Select the tracing option (All Connected, Transformer, Switch, or Source). • Select the direction. • Click the Trace button.
Upstream	• Select either “Transformer” or “Switch” in the Trace To field. • Select “Upstream” in the Upstream/Downstream drop-down menu. • Click the Trace button.
Downstream	• Select either “Transformer” or “Switch” in the Trace To field. • Select “Downstream” in the Upstream/Downstream drop-down menu. • Click the Trace button.

To trace...	Do this...
Both upstream and downstream	- Select either “Transformer” or “Switch” in the Trace To field. - Select “All” in the Upstream/Downstream drop-down menu. - Click the Trace button. (Tracing all connected devices and tracing to the source will automatically trace both upstream and downstream.)
Using statuses currently displayed in the Viewer	- Select “Real Time” from the Real Time/Nominal drop-down menu. - Select the tracing option (All Connected, Transformer, Switch, or Source). - Select the direction. - Click the Trace button.
Using Nominal statuses	- Select “Nominal” from the Real Time/Nominal drop-down menu. - Select the tracing option (All Connected, Transformer, Switch, or Source). - Select the direction. - Click the Trace button.

Using Cameras

Camera windows provide a way to see map detail while retaining a visual relationship to the larger view.

To open the Camera dialog box, select **Cameras...** from the Navigate menu in the Viewer

window or click the  button on the toolbar.

Starting a Camera

To start a Camera window, complete these steps:

1. Select **Cameras...** from the Navigate menu. The Camera dialog box opens.
2. Click the **Start Camera** button to set the Camera drawing area contents.
3. Click (with the middle mouse button) in the Viewer to set the first coordinates of the rectangular area to be shown in the Camera.
4. Size the rectangle by dragging the mouse and click again (with the middle mouse button) to select the second coordinates. This rectangle defines the area that appears in the Camera window.
5. Click the button indicating in which quadrant of the Viewer window you want to display the Camera.

Note: You can only open one Camera window at a time from a given Viewer window. If you want to open multiple Cameras, you must open multiple Viewers.

The Camera window appears over the Viewer window in the quadrant selected in the Camera dialog box. You can move and position the Camera window like any other window.

Note: Big Symbols displayed in the Viewer do not display in the Camera window.

The rectangle drawn in the above steps stays in the Viewer to indicate the Camera view area. Once the Camera window is started, it has all of the same navigational features as any Viewer.

Moving a Camera Viewing Area

You can change what appears in the Camera by moving the rectangle in the originating Viewer. To move a Camera viewing area, complete these steps:

1. Click on the **Drag Camera View** button.
2. Click the left mouse button, hold, and drag the rectangle in the Viewer. The image in the Camera follows the rectangle.

Or:

1. Hold the <Shift> key.
2. Click the left mouse button, hold, and drag the rectangle in the Viewer. The image in the Camera follows the rectangle.

Closing a Camera

To close the Camera window, click on the **Stop Camera** button (or press <Ctrl>+X in the camera window). Click on the **Exit** button to close the Camera dialog box.

Note: If a Camera window is open, it will stay open even though the dialog box is closed.

Viewing Schematics

If you have Oracle Utilities Network Management System – Schematics installed with your system, you can use the Viewer to view your schematic maps.

To view schematic maps, complete the following steps:

1. In the Viewer, focus on the area you'd like to view the schematic representation of.
2. Select a 3-phase conductor in the area.
3. Select the Object Focus () button. The schematic map of the area is loaded into the Viewer.
4. To toggle back to the topological map, select the Object Focus () button again.

Commissioning or Decommissioning Devices

Symbology

The Viewer can highlight any device marked for construction or decommissioning via the “Highlight Proposed Model Changes” option in the Option -> Preferences panel. The Viewer can also toggle the visibility of unconstructed or decommissioned devices via the Hide/Display panel’s “Ignored Devices” option. By default, highlighting is disabled and all devices marked for construction are hidden.

To view all devices that are currently either under construction or decommissioned, toggle the “Pending Devices” option in the Hide/Display panel.

Using the Commissioning Tool

Use the Commissioning Tool to commission a device that is currently in construction, or to decommission devices currently marked for removal.

Note: Pending Device changes can be made and reversed at any time and in any order.

Starting the Commissioning Tool

1. Select **Misc. Tools** button on the Environment Manager window. The Misc. Tools dialog appears.
2. Select the **Device Commission Tool** button in the Misc. Tools dialog. The Commissioning Tool window appears.

Note: When the commissioning tool is active, the Viewer will only allow selection of devices that are marked as proposed changes.

Commissioning and Decommissioning Sets of Devices

To commission or decommission sets of devices, perform the following steps:

1. In the Viewer, load the pending device changes you wish to modify.
2. Turn on Highlighting in the Viewer preferences
3. Enable the **Pending Devices** option in the Hide/Display panel.
4. Switch to study mode if you don't want to affect the real-time model.
5. Start the Commissioning Tool.
6. Select all devices that need to be commissioned or decommissioned. Note that the Commissioning Tool automatically switches to the same mode as the Viewer and the list of device aliases appear.
7. Click the **Approve Changes** button.

Note the following:

- Devices being decommissioned are no longer are part of the topological model and are immediately deenergized, as are any devices downstream.
- Commissioned devices immediately become part of the topological model and energization is recalculated (i.e. a newly device attached to an energized conductor will become energized).
- Turning off highlighting and hiding "Pending Devices" will show the current state of the model.
- To undo any changes, follow the previous steps as if commissioning, but select **Undo Changes**. The Commissioning Tool will reverse the changes to all modified devices.

Note: Undoing changes on an uncommissioned or decommission-pending device has no effect.

Using the Operator's Workspace Control Tool

The Oracle Utilities Network Management System – Operator's Workspace Control Tool window is a separate window you can open from the Viewer window. The Control Tool window allows you to perform actions on devices in the distribution system, such as opening or closing a device or placing a tag on a device.

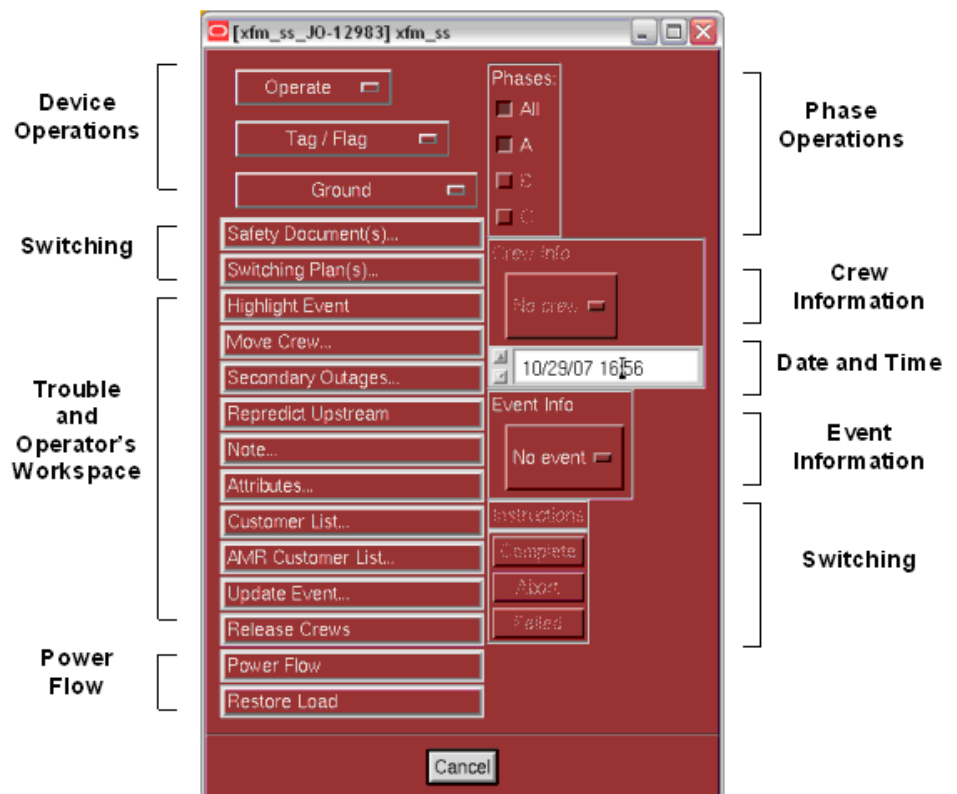
This section includes the following topics:

- **Opening the Control Tool**
- **Real-Time and Study Modes**
- **Control Tool Option Types**
- **Performing Device Operations**
- **Trouble Management and Operator's Workspace Functions**
- **Using the Look Ahead Window**
- **Viewing the Device Operations List**

Opening the Control Tool

To open the Control Tool window, double-click on a device in the Viewer. The operations that are available on the Control Tool differ depending on four factors:

- The type of device that you opened the Control Tool window from
- The current state of the device (For example, if you open the Control Tool window from a device that is closed, the close option is not enabled. You can only open the device.)
- Whether the Viewer window is in real-time or study mode
- The available phases of the device



Real-Time and Study Modes

In real-time mode, the Control Tool window is red and has all of the options available for the current operating conditions enabled. By contrast, in study mode the Control Tool window is gray and has certain options allowable for the device always disabled, such as Repredict Upstream/Downstream, View Call Pattern, Release Crews, Move Crew, and Update Event. Changes made using the Control Tool window while in study mode are only displayed to the current user and are not displayed to other users.

Control Tool Option Types

The options on the Control Tool window are grouped by function type. The following table describes those option types.

Option Types	Description
Device Operations	Allows you to open and close a device, place and remove tags, grounds, etc.
Switching	Allows you to open switching plans and safety documents associated with the device. If multiple documents or plans are associated with a device, a dialog box opens displaying a selection list.
Trouble	Allows you to perform Oracle Utilities Network Management System – Trouble Management functions, such as repredicting outages to upstream devices.
Power Flow	Allows you to view Oracle Utilities Network Management System – Power Flow information and perform Oracle Utilities Network Management System Power Flow functions. Several windows are available for analyzing the network power flow. Select Power Flow to open the Power Flow Results window that displays the real-time power flow solution for the selected device. You can open additional Oracle Utilities Network Management System Power Flow windows from the Results window.
Phase Operations	Allows you to operate all or specific phases of a device by toggling All or any combination of A, B, and C phases. Any phases not applicable to the device are disabled (e.g., the Control Tool for an A phase transformer will have B and C disabled).
Crew Information	Allows you to record the name of the crew that performed an operation. The menu automatically lists the crews dispatched to the event selected in the Event Info menu. For example, when you select a crew from the menu, the action recorded in the Event Recorder will list the selected crew. If no crews are dispatched to the event selected in the Event Info menu, then the Crew Info menu selection defaults to “no_crew_dispatched” and every active and inactive crew is available for selection from the menu.
Date and Time	Allows you to record the date and time an operation was performed. The field defaults to the current date and time, but you can adjust the date using the up and down arrow buttons next to the field. The date and time of the operation displays in the Event Recorder window. NOTE: this will also affect reported outage times.

Option Types	Description
Event Information	Allows you to select the specific event used in the action. For example, when there are multiple events on the selected device, this option will allow you to display the Event Details for a specific event in the list. If there are no events on the specified device, the most recently selected event in the Work Agenda is displayed instead.
Switching	Displays the Instructed action, if any, and enables the Complete, Abort, and Failed actions. See Managing Switching Plans on page 14-1 for more details.

Performing Device Operations

The Control Tool window allows you to perform device operations based on the current status of the device using the **Operate** button. There are three types of operations: open/close, tag placement, and grounding. You can perform these operations on all or some of the phases of a device. When you perform device operations, the Look Ahead window opens, displaying information about the potential impact of the device operation. For more information on the Look Ahead window, see **Using the Look Ahead Window** on page 1-50.

This section includes the following topics:

- **Control Tool Operations**
- **Opening and Closing Devices**
- **Operating Phases on a Device**
- **Placing Tags on Devices**
- **Removing Tags from Devices**
- **Grounding a Device**
- **Removing a Ground from a Device**
- **Disabling an ATO**
- **Re-enabling an ATO**

Control Tool Operations

When you open a Control Tool window for a device, you can perform device operations and view information about the device. A Control Tool window opened from a conductor also supports localized model editing.

When you select an option from the Control Tool window, the system performs the action and leaves the Control Tool window open. This allows you to perform multiple actions on the same device without having to open the Control Tool window for each action.

The Control Tool window displays the following options:

- The **Operate – Instruct Open** option allows you to indicate you have issued an instruction to a crew to open the device. An Instructed flag appears on the device in the Viewer to alert other operators that device operations are underway on that device. No more device operations will be allowed on the device until the Instructed flag is cleared.
- The **Operate – Instruct Close** option allows you to indicate you have issued an instruction to a crew to close the device. An Instructed flag appears on the device in the Viewer to alert other operators that device operations are underway on that device. No more device operations will be allowed on the device until the Instructed flag is cleared.

- The **Operate – Open** option allows you to open a closed device. Oracle Utilities Network Management System Trouble Management detects when opening a particular device will create an outage that is downstream of another outage. A dialog box will ask if you want to create an outage that is nested within another outage. Choosing Yes will create an outage on the opened device. The new outage will affect all of the downstream customers. These customers will no longer be part of the upstream outage. Choosing No will open the device without creating an outage on it. The upstream outage will be unaffected.
- The **Operate – Close** option allows you to close an open device. If you attempt to close a device that adjoins a grounded downstream conductor, a dialog box opens warning that the operation will energize a grounded section. Click **OK** to proceed with the operation or **Cancel** to abort.
- The **Tag/Flag – Instruct Place Tag** option allows you to indicate you have issued an instruction to a crew to place a tag on a device. An Instructed flag appears on the device in the Viewer to alert other operators that device operations are underway on that device. No more device operations will be allowed on the device until the Instructed flag is cleared.
- The **Tag/Flag – Instruct Remove Tag** option allows you to indicate you have issued an instruction to a crew to remove a tag from a device. An Instructed flag appears on the device in the Viewer window to alert other operators that device operations are underway on that device. No more device operations will be allowed on the device until the Instructed flag is cleared.
- The **Tag/Flag – Place Tag** option allows you to place a tag on a device. Placing a tag on a device prevents any user from opening or closing that device. A tag symbol appears attached to the device in the Viewer.
- The **Tag/Flag – Remove Tag** option allows you to remove a tag from a device. Removing a tag allows users to open or close the device.
- The **Tag/Flag – Place Safety Flag** option allows you to place a safety flag on a device. A safety flag indicates safety document is going to be placed against this device or that a safety document was recently on this device. Typically this occurs when a crew has either gone home for the day, that further work is required on or around the device at a later time, or that a safety document is between crew assignments. Placing a safety flag on a device does not prevent a user from opening or closing that device.

Note: You must place a safety flag on a device before you can place a safety document on the device.

- The **Tag/Flag – Remove Safety Flag** option allows you to remove a safety flag from a device.
- The **Ground – Instruct Place Ground** option allows you to indicate you have issued an instruction to a crew to ground a device. An Instructed flag appears on the device in the Viewer to alert other operators that device operations are underway on that device. No more device operations will be allowed on the device until the Instructed flag is cleared.
- The **Ground – Instruct Remove Ground** option allows you to indicate you have issued an instruction to a crew to remove a ground from a device. An Instructed flag appears on the device in the Viewer to alert other operators that device operations are underway on that device. No more device operations will be allowed on the device until the Instructed flag is cleared.
- The **Ground – Place Ground** option allows you to ground a device or conductor. When grounding a device, you will be prompted to indicate the side of the device to ground by selecting an adjacent device or conductor. When grounding an energized conductor, a dialog box opens warning that the operation will ground a live section. Click **OK** to proceed with the operation or **Cancel** to abort.
- The **Ground – Remove Ground** option allows you to remove a ground from a device or conductor.

- The **Disable ATO** option allows you to suppress all automatic operations for the pair of ATO switches by placing a “DISABLED” condition on the selected switch. If either the Primary or Secondary ATO switch is disabled, neither will operate. Note that this condition does not block manual operations.
- The **Enable ATO** option allows you to re-enable automatic operations for the pair of ATO switches by removing the “DISABLED” condition from the selected switch.
- The **Cancel** button closes the Control Tool window.

Opening and Closing Devices

You can open or close a device in the Viewer to reflect the current state of the device in the field. The device operations you can perform depend on the status of the device. For example, a Control Tool window opened from an open device will only allow you to close the device. You must have authority over the control zone where the device is located in order to operate the device.

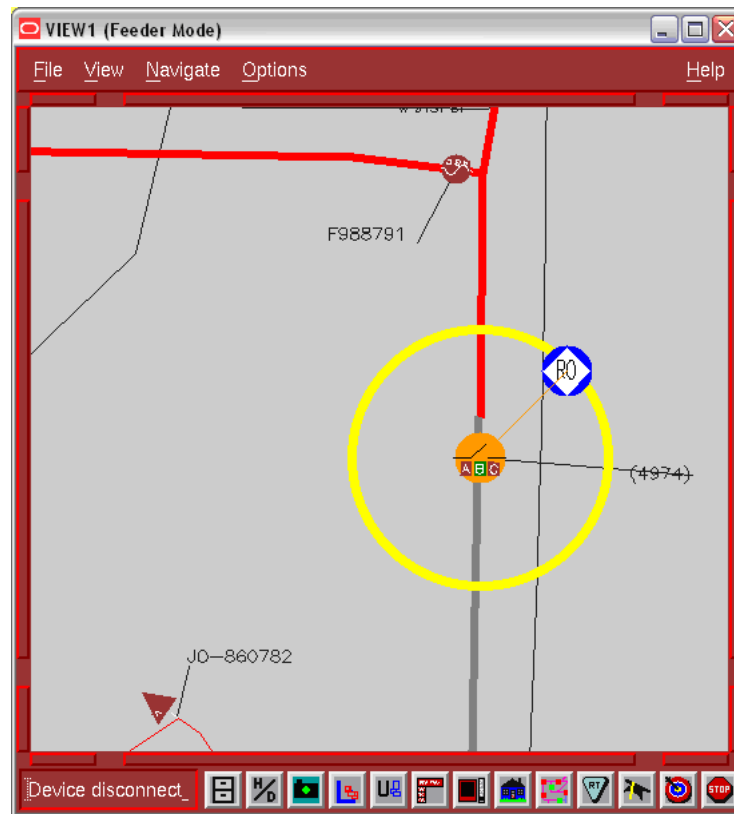
To open or close a device, complete these steps:

1. Open a Viewer window and load the map that contains the device you want to open or close.
2. Double-click on the device. The Control Tool window opens.
3. Click the **Operate** button and select the open or close operation from the drop-down menu. The system immediately performs the action.

Operating Phases on a Device

If a device has multiple phases and you only want to open or close one of the phases, you can select which phase you want to operate. To operate one or multiple phases, complete these steps:

1. Open a Viewer window and load the map that contains the device you want to open or close.
2. Double-click on the device. The Control Tool window opens.
3. Toggle off the phases of the device you do not want to operate.
4. Click the **Operate** button and select the open or close operation from the drop-down menu. The system immediately performs the action for the selected phase(s). The following figure shows a 3-phase switch with only B phase opened.



Placing Tags on Devices

You can tag devices in the Viewer window that are physically tagged in the field. Tags placed on devices in the system prevent users from performing open or close operations on the device. When you place a tag on a device, a tag symbol appears attached to that device in the Viewer. You can place multiple tags on a single device. When you do, the number of tags on the device appears in parentheses next to the tag in the Viewer.

You must have authority over the control zone where the device is located in order to tag the device.

To place a tag on a device, complete these steps:

1. Open a Viewer window and load the map that contains the device you want to tag.
2. Double-click on the device. The Control Tool window opens.
3. Click on the **Tag** button, and then select the Place Tag option from the drop-down menu. The tag appears on the device in the Viewer window.

Removing Tags from Devices

Before performing an open or close operation on a device, you must remove any tags on the device. To remove a tag from a device, complete these steps:

1. Open a Viewer window and load the map that contains the device you want to remove the tag from.
2. Double-click on the device. The Control Tool window opens.
3. Click on the **Tag** button, and then select the Remove Tag option from the drop-down menu. If there is only one tag on the device, it disappears from the Viewer window.

If there are multiple tags on the device, a dialog box opens displaying all of the tags. Select the tag you want to remove. The tag disappears from the Viewer window.

Grounding a Device

When you open a Control Tool window from certain devices or conductors (e.g., fuse or wire), the ground function is available. Grounding a device grounds all parts of the circuit connected to the grounding point. The Look Ahead window warns you if the grounding action will create a live, grounded circuit. The grounded circuit is highlighted in the Viewer and indicated by a grounding symbol at the selected device or midpoint of the selected conductor.

To ground a device, complete these steps:

1. Open a Viewer window and load the map that contains the device you want to ground.
2. Double-click on the device. The Control Tool window opens.
3. Click on the **Ground** button and select Place Ground from the drop-down menu. A Select Secondary Object dialog appears.
4. Click on the conductor attached to the device on the side you want to ground and the name of that conductor will appear in the dialog.
5. Click **OK** to proceed with the ground.
 - If you are grounding a live conductor, a warning box opens indicating that you are about to “ground a live section.” Click the **OK to Operate Device** button to proceed with the grounding action (a grounding symbol appears in the Viewer on the device), or click the **Cancel** button to abort the grounding action.

Removing a Ground from a Device

You can only remove a ground from the device or conductor on which the grounding was applied. To remove a ground from a device, complete these steps:

1. Open a Viewer window and load the map that contains the grounded device.
2. Double-click on the device. The Control Tool window opens.
3. Click on the **Ground** button and select Remove Ground from the drop-down menu. A Select Secondary Object dialog appears.
4. Click on the conductor attached to the device on the side with the ground you want to remove and the alias of that conductor will appear in the dialog.
5. Click **OK**, and the grounding symbol is removed from the Viewer.

Disabling an ATO

When you open a Control Tool window from a Primary or Secondary ATO switch, the ATO Disable function is available. Disabling either ATO switch prevents the system from automatically throwing-over or auto-returning the pair of switches.

To disable an ATO switch, complete these steps:

1. Open a Viewer window and load the map that contains the ATO switch.
2. Double-click on the ATO switch. The Control Tool window opens.
3. Click on the **Disable ATO** button. A DISABLED condition will appear on the ATO switch.

The ATO switches can now be operated manually, and energization can change, and the system will not automatically operate either ATO switch.

Re-enabling an ATO

You can only enable an ATO that has previously been disabled. (All ATO switches are enabled by default.)

To enable an ATO switch, complete these steps:

1. Open a Viewer window and load the map that contains the ATO switch.

2. Double-click on the ATO switch. The Control Tool window opens.
3. Click on the **Enable ATO** button. The DISABLED condition will disappear from the ATO switch.

Once both ATO switches are enabled, the system will once again set the ATO switches to their correct positions, based on the energization.

Trouble Management and Operator's Workspace Functions

The Control Tool window contains several Oracle Utilities Network Management System Trouble Management options. You can use these options to predict device outages upstream, view the call patterns for an outage, and view the customers associated with an outage event. These options correspond to buttons on the Control Tool window.

- **Highlighting Events in the Work Agenda Window**
- **Viewing Call Patterns**
- **Moving Crews**
- **Opening the Service / Secondary Outages Manager for a Device**
- **Repredicting Upstream/Downstream**
- **Viewing the Customer List**
- **Viewing the AMR Customer List**
- **Opening the Event Details Window**
- **Releasing Crews**
- **Placing Notes on Devices**
- **Viewing Device Attributes**
- **Editing Conductors**
- **Placing Jumpers**
- **Creating Momentary Outages**

Highlighting Events in the Work Agenda Window

If an event is associated with a device, you can locate the event in the Work Agenda window by clicking the **Highlight Event** button on the Control Tool window. You must have the correct view of the Work Agenda window open in order to see the highlighted event (e.g., the In Progress list).

Viewing Call Patterns

You can view the calls associated with an event in the Viewer window by clicking the **View Call Pattern** button on the Control Tool window. A symbol appears attached to any transformers serving customers that have calls associated with the event.

Note: This option is only available on Control Tool windows that are opened from a predictable outage device, such as a switch or fuse, which has an open associated event.

To hide the symbols, open the Control Tool window from the device and click **View Call Pattern** again.

Moving Crews

You can move a crew to a different device using the **Move Crew...** button on the Control Tool window. The crew remains associated with the event at the original device but is relocated to a different device. You would typically use this when a crew is dispatched to a device but discovers

they need to spend a significant amount of time in another area to fix the actual cause of the problem. Moving a crew allows operators to know specifically where the crew is located. For more information, see **Managing Crews with Trouble Management** on page 2-31.

Opening the Service / Secondary Outages Manager for a Device

Use the **Secondary Outages...** button on the Control Tool window to open the Service/Secondary Outages Manager window and populate it with all customers on the selected device. For more information, see **Service/Secondary Outage Manager** on page 2-19.

Repredicting Upstream/Downstream

You can force the system to manually repredict a predicted outage either upstream or downstream from the current system predicted device. This is typically done when a crew finds that the problem is not at the predicted device.

- If the device is energized, the problem is actually one or more downstream outages.
- If the device is de-energized, the problem will actually be upstream.

Click the **Repredict Upstream** or **Repredict Downstream** button on the Control Tool window to manually repredict the outage to the next predictable upstream or downstream device. When repredicting downstream, the system distributes the event to multiple devices. Once a predicted outage is manually repredicted upstream or downstream, the system will treat the repredicted outages as non-grouping and no longer automatically repredict them.

For example, a crew finds that a predicted service outage (indicated by the “PSO” symbol) at a transformer is not actually where the trouble is located. Using the Control Tool window, you can repredict the outage upstream to the switch. When you repredict the outage, the switch displays a “PDO” (predicted device outage) symbol. The original predicted service outage displayed in one of Work Agenda’s Trouble Events list windows changes to a predicted device outage located at the switch.

Viewing the Customer List

You can view the customers downstream from a device by clicking **Customer List...** button on the Control Tool window. The Customers view of the Trouble Info window opens, listing all customers downstream from the device. The information displayed includes the device, name, address, phone number and account number of the customer.

Viewing the AMR Customer List

You can view the AMR meters downstream from a device by clicking **AMR Customer List...** button on the Control Tool window. The AMR Customers view of the Trouble Info window opens, listing all AMR meters downstream from the device. The information displayed includes the device, phases, customer name, address, phone number and account number of the customer, as well as recent meter ping information. From this page, you can initiate a ping request, as well as monitor previous ping results.

Opening the Event Details Window

Use the **Update Event** button to open the Event Details window for the event selected on the Control Tool. This event number is selected on the Event Info drop-down menu on the right-hand side of the Control Tool. Options in the Event Info drop-down menu are taken from all active events on the device selected in the Viewer and the most recently selected Work Agenda row.

Releasing Crews

Releases all assigned and dispatched crews for the selected event on the Control Tool. The selected event is determined in the same manner as for the Update Event option.

Placing Notes on Devices

The Control Tool window allows you to place notes on devices. When you open the Control Tool window from a device, click the **Note...** button. A Note dialog box opens allowing you to enter notes that relate to the device. Once you enter and save the note, a note symbol displays attached to the device in the Viewer.

For more information, refer to the following sub-topics:

- **Notes Dialog**
- **Creating a Note**
- **Viewing and Editing a Note**
- **Deleting a Note**

Notes Dialog

The Note dialog displays the following fields and buttons:

- The **note** field displays the date and time the note was created, along with the user name of the user that created the note.
- The **Note** field displays the text of the note selected in the note list.
- The **New** button creates a new note.
- The **Edit** button opens the selected note for editing.
- The **Save** button saves the note, or any edits to the note, and closes the Note dialog box.
- The **Clear Note** button clears the selected note's text.
- The **Delete** button deletes the selected note and closes the Note dialog box.
- The **Exit** button closes the Note dialog box.

Creating a Note

You can create one or more notes for a device using the Control Tool window. Once you save a note, a note symbol displays in the Viewer window next to the device. If you create multiple notes for a device, the number of notes is displayed in parentheses next to the note symbol.

To create a note:

1. Open a Viewer window and load the map that contains the device you want to add the note to.
2. Double-click on the device. The Control Tool window opens.
3. Click the **Note...** button. A note dialog box opens.
4. Type the note in the Note text field.
5. Click **Save**. The note dialog box closes and a note symbol appears attached to the device.

Viewing and Editing a Note

After you have created and saved a note, you can view and edit it. All notes for the selected device are listed in the note section of the Note window. You can also view notes in the Note Summary window (see **Using the Note Summary** on page 1-56).

To view and edit a note, complete these steps:

1. Open a Viewer window and load the map that contains the note you want to view or edit.
2. Double-click on the device that the note is attached to. The Control Tool window opens.
3. Click the **Note...** button. A note dialog box opens displaying the note(s).
4. Select the note you wish to view or edit. The note text displays in the Note field.

5. If you want to edit the note, click the **Edit** button. Otherwise, click the **Exit** button.
6. Edit the note text.
7. Click **Save**. The note dialog box closes.

Deleting a Note

When a note is no longer needed, you can delete it. To delete a note, complete these steps:

1. Open a Viewer window and load the map that contains the note you want to delete.
2. Double-click on the device that the note is attached to. The Control Tool window opens.
3. Click the **Note...** button. A note dialog box opens displaying the note(s).
4. Select the note you wish to delete. The note text displays in the Description section.
5. Click the **Delete** button. The note dialog box closes and the note is deleted.

Viewing Device Attributes

The **Attributes...** button on the Control Tool window opens the Device Attributes window, which lists information about the selected device's properties (e.g., manufacturer, installation date, type, rating, etc.). Information displayed in this window is read-only. Click the **Print** button to print the attributes.

While the Device Attributes window is open, you can view information about another device by selecting that device in the Viewer window. The selected device's ID appears in the Selection field. Click the **Execute Query** button to display the information for the selected device in the description area. See **Viewing Attribute Information** on page 1-69 for more information.

Editing Conductors

You can use the Control Tool window to edit conductors in the system. The Control Tool window allows you to perform operations on selected conductors to make localized and controlled model edits. In addition to the model edit options, you can also apply or remove grounding, analyze the power flow, attach notes, and view and modify the device attributes for the conductor.

Because changes made using the Control Tool window transform the real-time model, the edited section is fully operable (e.g., you can open and close jumpers). The original conductors are broken and replaced by new conductors, and either a wire gap or jumper is inserted at the midpoint of the wire. There are two types of conductor modifications: creating an open point in a conductor and inserting a jumper.

Note: Model edits made using the Control Tool window are temporary model changes.

For more information, refer to the following sub-topics:

- **Creating an Open Point in a Conductor**
- **Removing an Open Point in a Conductor**

Creating an Open Point in a Conductor

You can edit a conductor in order to simulate an “open point,” either a wire down for an overhead conductor or a cut cable for an underground conductor. In both cases, an open point symbol is placed at the mid point of the selected conductor. To create an open point, complete these steps:

1. Open a Viewer window that contains the open conductor.
2. Double-click on the conductor. The Control Tool window opens.
3. Select the desired phases from the Phases panel then click either the **Phase Wire Down** (OH) or **Cut Phase** (UG) button to create the open point.

Removing an Open Point in a Conductor

To remove an open point, complete these steps:

1. Open a Viewer window that contains the open conductor.
2. Double-click on the conductor. The Control Tool window opens.
3. Select the desired phases from the Phases panel then click either the **Put Up Wire** (OH) or the **Repair Cable** (UG) button to remove the open point.

Placing Jumpers

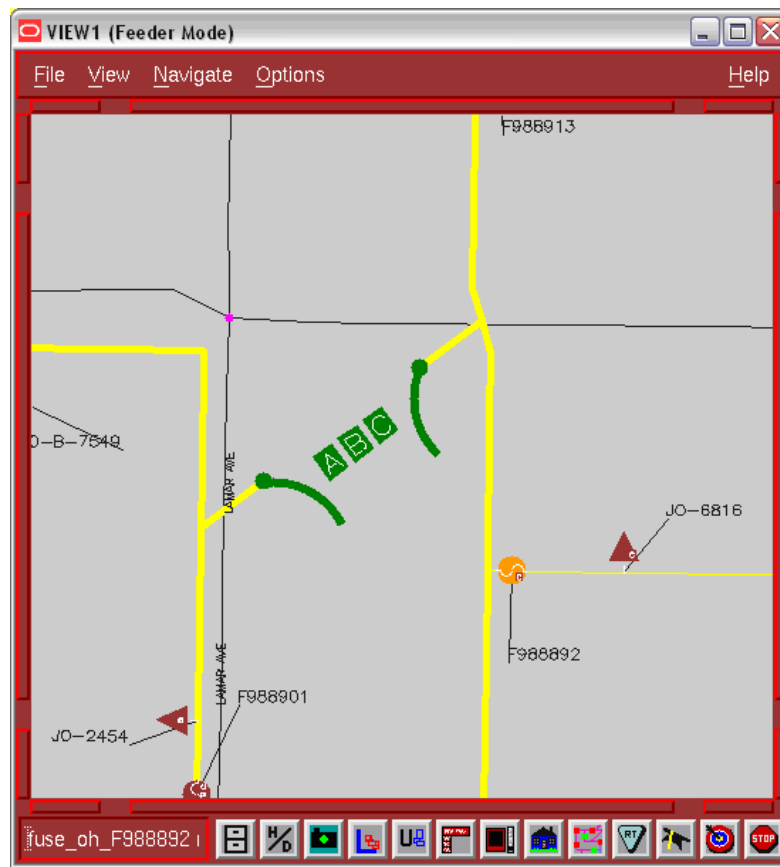
In addition to creating an open point, you can insert a jumper on an overhead conductor or between overhead conductors. You can also place emergency cables between underground devices. The jumper is an active part of the model and fully operable. You can open and close a jumper as well as place tags and notes on the jumper.

For more information, refer to the following sub-topics:

- **Jumper Symbol in the Viewer**
- **Jumper Types**
- **Inserting a Jumper**
- **Operating a Jumper**
- **Removing a Jumper**

Jumper Symbol in the Viewer

The following Viewer window displays a point-to-point jumper symbol.



Jumper Types

The following table describes the different jumper types.

Jumper Type	Description
In-line Jumper	In-line jumpers are placed in line. The position for the jumper is set to “closed” to maintain a continuous conductor. A closed jumper symbol displays at the midpoint of the selected conductor.
P-P Jumper / Emergency Cable	Point-to-point jumpers are placed between a selected conductor and the same phase on any other conductor. A dialog box allows you to specify the second conductor. You can select the conductor in the Viewer window. A point-to-point jumper symbol displays at the midpoints of the selected conductors. The default state for the inserted jumper is “closed.”
P-P Cross Phase	Point-to-point cross phase jumpers are placed between different phases on two different conductors. The Cross Phase dialog box allows you to select a live phase and the phase to pick up. The Select Device dialog box allows you to specify the second conductor. You can select the conductor in the Viewer window. A point-to-point jumper symbol displays, connecting the midpoints of the selected conductors. The default state for the inserted jumper is “closed.”

Inserting a Jumper

After the crew informs you what type of jumper they will insert, you can make the change in the system. To insert a jumper, complete these steps:

1. Open a Viewer window and load the map that contains the conductor where you want to place the jumper.
2. Double-click on the conductor. The Control Tool window opens.
3. Select the type of jumper you want to insert. A dialog box opens unless you are doing an In-Line Jumper -- then go to the final step.
4. Select another conductor (in the Viewer window), and then click **OK**. Wait a moment as the system updates the model.
5. Click **Yes** in the Map Load Confirmation dialog box if you want to reload the map. The Viewer window displays the jumper.

Operating a Jumper

Like devices, you can open and close (Disconnect and Connect) jumpers. To open or close a jumper, complete these steps:

1. Open a Viewer window and load the map that contains the jumper you want to operate.
2. Double-click on the jumper. The Control Tool window opens.
3. Select the desired phases from the Phases panel then click the operation you want to perform, either Disconnect Jumper or Connect Jumper.

Removing a Jumper

Once a jumper has been removed in the field, you can remove the jumper from the system. This removes the jumper and fully restores the conductor. To remove a jumper, complete these steps:

1. Open a Viewer window and load the map that contains the jumper you want to remove.

2. Double-click on the jumper. The Control Tool window opens.
3. Click the **Remove Jumper** button. Wait a moment as the system updates the model.
4. Click **Yes** in the Map Load Confirmation dialog if you want to reload the map. The Viewer window displays the jumper.

Creating Momentary Outages

You can create a past momentary outage by simulating a momentary interruption in the system. Momentary interruptions occur when a recloser operates and does not lock out. The **Create Momentary...** button is only enabled on Control Tool windows opened from reclosing devices. To create a momentary outage, complete these steps:

1. Open a Viewer window and load the map that contains the device that you want to create the momentary outage for.
2. Double-click on the device. The Control Tool window opens.
3. Adjust the date and time if necessary. The date and time specified must be in the past.
4. Click the **Create Momentary...** button. A dialog box opens.
5. Enter the number of momentaries.
6. Click **OK**. The momentary outage displays in the Work Agenda window with a status of "M-CMP." In addition, two alarms display in the System Alarms list, one for opening and one for closing.

Using the Look Ahead Window

The Look Ahead window provides information concerning the results of performing an Open or Close operation. The Look Ahead window opens before the operation is actually performed and allows you to cancel the operation. The Look Ahead window operates in both real-time and study modes, and appears whenever a device operation is initiated from either the Control Tool or the Switching Plan Editor in energized portions of the distribution system.

The Look Ahead window displays tables of information about the operation. The information displayed depends on the results of performing the intended operation. The coloring of the Look Ahead window follows the same coloring scheme as the Viewer, Control Tool, and Switch Sheet Editor to indicate real-time (red) or study (gray) modes.

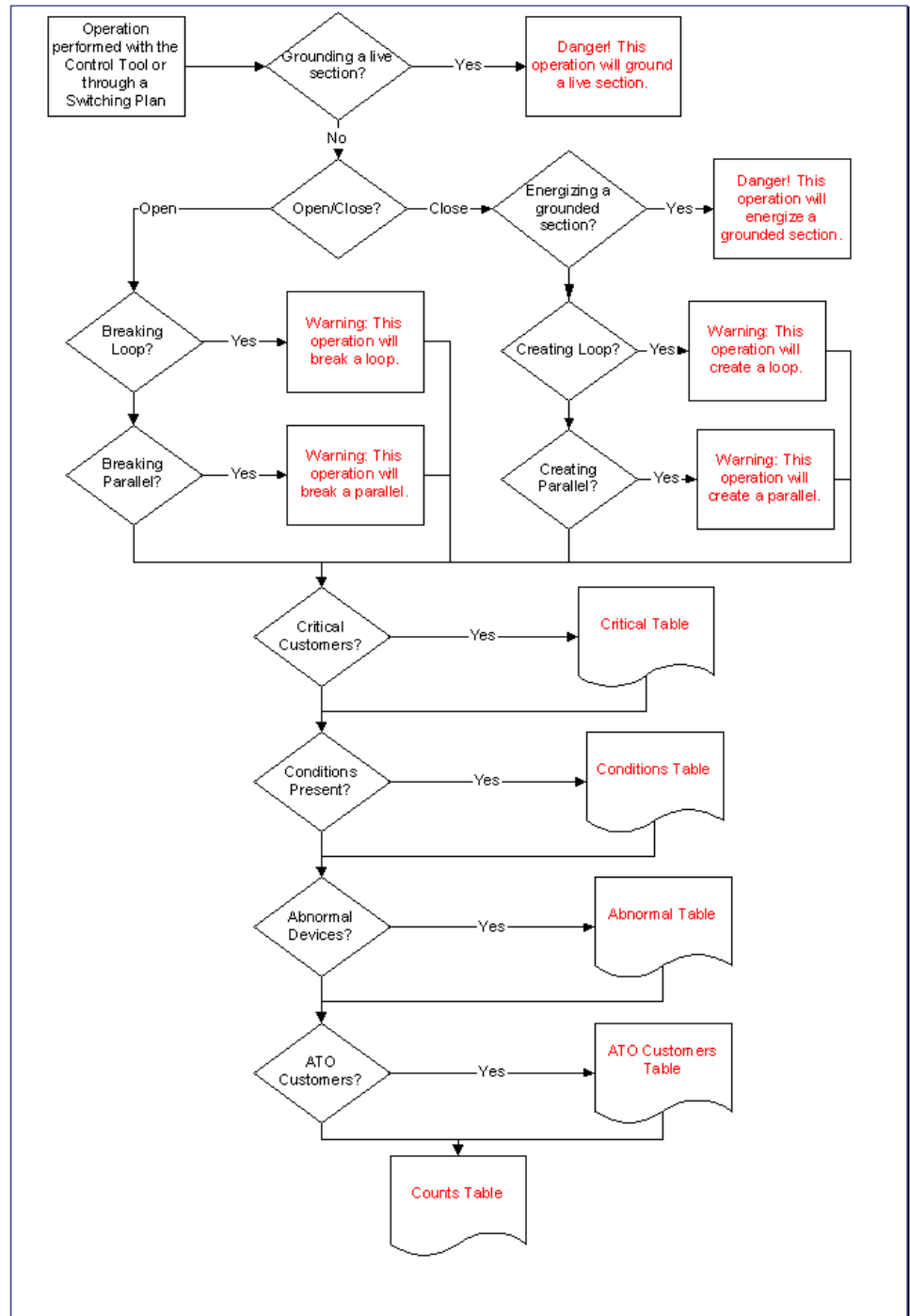
There are multiple views on the Look Ahead window, which you can access by clicking the buttons on the window (e.g., **View Conditions**). However, the information displayed in the header section of the Look Ahead window displays regardless of the table you are viewing. For more information on the Oracle Utilities Network Management System - Power Flow information and buttons in the header see **Power Flow, Suggested Switching, and Volt/VAr Optimization** on page 16-1.

For more information, refer to the following topics:

- **Look Ahead Process**
- **Look Ahead Window**
 - **Counts Panel**
 - **ATO Customers Panel**
 - **Conditions Panel**
 - **Abnormal Devices Panel**
 - **Critical Customers Panel**

Look Ahead Process

The Look Ahead window uses status and topology tracing to “look ahead” of the requested operation and determine its consequences. Based on this information, you can decide whether to continue with an operation. The flow diagram below shows the basic logic of the Look Ahead window.



Look Ahead Window

The Look Ahead window displays the following fields:

- The **Device** field displays the name of the device being operated.
- The **Phase(s) to Operate** field displays the phase(s) of the device being operated.
- The **After Operation -> Voltage Violations** field displays voltage violations that will occur if the operation is completed. This information is only available if your system includes Power Flow.
- The **Branch Violations** field displays branch violations that will occur if the operation is completed. This information is only available if your system includes Power Flow.
- The **Loops/Parallels** field displays a warning if an operation will create or break loops or parallels and lists the feeders involved.

Buttons

The buttons at the bottom of the Look Ahead window provide access to tables that contain a variety of information related to the device operation. The buttons that are enabled depend on the state and conditions of the device. If conditions are present, you cannot open or close a device until you have viewed them.

- The **Open/Close** button allows you to proceed with an Open/Close operation. If an “open” operation opened the Look Ahead window, then the **Open** button appears. If it is a “close” operation, the **Close** button appears. The button is disabled if conditions are present that you have not yet viewed. Once you view any conditions, the button becomes enabled.
- The **Select Device** button allows you to return to the original device being operated. To resume viewing the device to operate after focusing on another device, click the **Select Device** button and then the “target” button in the Viewer.
- The **E-Mail** button allows you to attach a text file of the currently displayed table to an E-mail. A dialog box opens prompting you for standard E-mail information. You can attach additional files to the E-mail. Click **Send** to send the Email to the recipient with the attached text file and any other attached file.
- The **Print** button allows you to print the contents of the currently displayed table.
- The **Cancel** button allows you to terminate the operation without making any change to the device or the network.

The buttons at the top of the Look Ahead window provide access to more tables that contain a variety of information related to the device operation.

- The **View ATO Custs** button allows you to view all customers who will be affected momentarily by a resulting ATO operation. If no momentary outages will result from the proposed operation, the **View ATO Custs** button is disabled. Clicking this button opens the ATO Customers table.
- The **View Conditions** button allows you to view any special conditions upstream or downstream of the device such as a note, tag, or crew. If special conditions do not exist, the **View Conditions** button is disabled. Clicking this button opens the Conditions table.
- The **View Abnormal** button allows you to view any abnormal devices on the device feeder. If abnormal devices do not exist, the **View Abnormal** button is disabled. Clicking this button opens the Abnormal Devices table.
- The **View Critical** button allows you to view any critical customers affected by the device operation. If there are no critical customers downstream of the device, the **View Critical** button is disabled. Clicking this button opens the Critical Customers table.
- The **View Counts** button allows you to view the number of customers affected by the device operation. The Counts table is the default view for the Look Ahead window.

- The **Run Power Flow** button allows you to manually execute Oracle Utilities Network Management System Power Flow. Power Flow identifies any voltage or flow violations that will occur as a result of the execution of the switching action, the current flow through the closed device, and the voltage and angle across the open device.
- The **Voltage Viols** button allows you to view a summary of voltage violations that will occur after execution of the switching action. This button is only enabled if your system includes Power Flow functionality and voltage violations are present. For more information, see **Power Flow Voltage Violations Summary** on page 16-15.
- The **Cond Viols** button allows you to view a summary of conductor violations that will occur after execution of the switching action. This button is only enabled if your system includes Power Flow functionality and conductor violations are present. For more information, see **Power Flow Conductor Violations Summary** on page 16-16.
- The **Switch Viols** button allows you to view a summary of switch violations that will occur after execution of the switching action. This button is only enabled if your system includes Power Flow functionality and switch violations are present. For more information, see **Power Flow Switch Violations Summary** on page 16-16.
- The **Xfmr Viols** button allows you to view a summary of transformer violations that will occur after execution of the switching action. This button is only enabled if your system includes Power Flow functionality and transformer violations are present. For more information, see **Power Flow Transformer Violations Summary** on page 16-16.
- The **Backfeed Viols** button allows you to view a summary of backfeed violations that will occur after execution of the switching action. This button is only enabled if your system includes Power Flow functionality and backfeed violations are present. For more information, see **Power Flow Backfeed Violations Summary** on page 16-15.

Counts Panel

The Counts panel displays the number of customers affected by the device operation. This is the default view for the Look Ahead window. The Counts table provides information for total Critical Customers with sub counts for three types of critical customers, Interrupting Current (phase), and Total Customers.

- The first set of two columns shows data for the total counts. The following three sets of two columns show data for each individual phase (A, B, and C), with the last set showing counts for 3 phase customers. The counts for the individual phases (A, B, C) and 3-phase will add up to the counts in the “total” columns (i.e., $A+B+C+3=Total$).
- The rows displayed in the counts table include Crit Customers, EMR Customers, MED Customers, KEY Customers, Interrupting Current, and total customers. Click on the **View Counts** button to access count information from any of the other views.
- The **Drop/Pickup** columns display the drop or pickup information for the device, depending on the action being performed. “Open” operations will display Drop results and “close” operations will display Pickup results. Information is displayed as counts picked up or dropped downstream of the device.
- The **Fdr** columns display the total counts for the feeder on which the device to operate is located.

ATO Customers Panel

The ATO Customers panel displays the number of customers affected by automatic ATO operations as a result of the device operation. These customers will not be listed in the Counts table.

On loss of the primary feed:

- The ATO Customers page will list customers downstream from a pair of enabled ATO switches with a live secondary feed, because they will experience a momentary outage.
- The ATO Customers page will not list customers downstream from a pair of ATOs if either the primary or secondary switch is disabled. These customers will appear on the Counts table, because they will experience a sustained outage.
- The ATO Customers page will not list customers downstream from a pair of ATOs if the secondary feed is already lost. These customers will appear on the Counts table, because they will experience a sustained outage.

On restoration of the primary feed:

- The ATO Customers page will list de-energized customers who will be auto-returned if the secondary feed is already lost.
- The ATO Customers page will list currently energized customers who will be auto-returned if the ATO is configured as a “break before make” on auto-return.
- The ATO Customers page will not list currently energized customers who will be auto-returned if the ATO is configured as a “make before break” on auto-return.

Similarly to the Counts table, the ATO Customers table provides information for total Critical Customers with sub counts for three types of critical customers, Interrupting Current (phase), and Total Customers.

The first column shows data for the total counts. The following three columns show data for each individual phase (A, B, and C), with the last set showing counts for 3 phase customers. The counts for the individual phases (A, B, C) and 3-phase will add up to the counts in the “total” columns (i.e., $A+B+C+3=Total$).

The rows displayed in the counts table include Crit Customers, EMR Customers, MED Customers, KEY Customers, Interrupting Current, and total customers. Click on the **View ATO Custs** button to access ATO Customer information from any of the other views.

Conditions Panel

The Conditions panel shows any special conditions currently active on the feeder including crew locations, outages, tags, notes, etc. If conditions are present, you must view the conditions table to complete the operation. Click on the **View Conditions** button to access condition information.

The Conditions table includes the following columns:

- The **Condition** column displays the type of condition that is present on the feeder such as a truck (crew), tag, note, etc.
- The **Device** column displays the name of the device on which the condition is located.
- The **Location** column indicates whether the condition is upstream or downstream of the current device.
- The **User** column displays the user name of the user that created the condition.
- The **Date** column displays the date and time that the condition was created.
- The **Description** column will display any text entered for the note, if the condition is a note.

Abnormal Devices Panel

The Abnormal Devices table displays data about abnormal devices on the same feeder as the device to operate. An “abnormal device” is any device that is not in its nominal state (e.g., an open device that is normally closed).

The Abnormal Devices table includes the following columns:

- The **Device** column displays the name of the device that is in an abnormal state.
- The **Nominal Status** column displays the normal status of the device.
- The **Current Status** column displays the current status of the device.

Critical Customers Panel

The critical table shows any critical customers downstream of the device. If critical customers are present, you do not need to view the critical table to complete the operation.

The critical table includes the following columns.

- The **Name** column displays the critical customer's name.
- The **Address** column displays the critical customer's address.
- The **Phone** column displays the critical customer's telephone number.

Viewing the Device Operations List

The Device Operations list on the Work Agenda window displays information about device operations performed using the Control Tool.

To view device information, select a row on Device Operations list and click the **Object Focus** button in a Viewer window.

The Device Operations list displays the following fields and buttons:

- The **User Date** column contains the date and time of the operation.
- The **Feeder** column contains the name of the feeder that the device is nominally on.
- The **Device** column contains the name of the device on which the operation occurred.
- The **Description** column contains a brief description of what type of operation occurred. Examples are “Device Operation” for an Open or Close, “PLACED [note]” if a note was put on the device and “REMOVED [note]” if a note was deleted from the device.
- The **Source** column contains the source of the device operation request. This value is typically a user's login ID.
- The **Value** column contains the state of the device (e.g., OPEN, CLOSED, etc.) immediately after the operation.
- The **Phase** column contains all of the phases that the device has available to be operated.
- The **Nominal** column contains the normal state of the device (e.g., OPEN, CLOSED, etc.).
- The **Exit** button exits the Device Operations list.

Viewing Summaries

Oracle Utilities Network Management System Operator's Workspace includes a number of windows that provide summary information for data in the system. The summary windows allow you to view and edit notes, review abnormal device conditions, and view SCADA information.

This section contains the following topics:

- **Using the Summaries Window**
- **Using the Note Summary**
- **Using the Tag Summary**
- **Using the Abnormal Device Summary**
- **Viewing the Systems Alarm List**
- **Using the SCADA Summary**

Using the Summaries Window

You can access most of the summary windows using the **Summaries** button on the Environment Manager. Click on the button or toggle box for the summary you want to view and the selected summary window will open. You can sort and filter the information displayed in each summary window. For more information, see **Sorting and Filtering Data** on page 1-3.

The Summary windows display the following information:

- The **Note Summary** button opens the Note Summary window that displays a list of notes that have been entered into the system using the Control Tool window.
- The **Tag Summary** button opens the Tag Summary window that displays a list of tags that have been entered into the system using the Control Tool window.
- The **Abn Device Summary** button opens the Abnormal Device Summary window that displays a list of devices that are not currently in their nominal state.
- The **Trouble Summaries** button opens the Trouble Summaries window that displays event-related information by company, region, branch, substation, feeder, and device. See **Viewing Trouble Summaries** on page 2-65 for more information.
- The **SCADA Summary** button opens the SCADA Summary window that displays SCADA-related information. See **Using the SCADA Summary** on page 13-2 for more information.
- The **Feeder Status Summary** button opens the Feeder Status Summary window. See **Feeder Status Summary** on page 16-10 for more information.
- The **Feeder Tiecap Summary** button opens the Feeder Tiecap Summary window. See **Feeder Tiecap Summary** on page 16-11 for more information.
- The **Exit** button closes the Summaries dialog.

Using the Note Summary

The Note Summary lists all notes that have been entered into the system. Notes are attached to devices via the Control Tool.

The Note Summary displays the following fields and buttons:

- The **Note #** column contains the unique number of the note attached to the device.
- The **User** column contains the user name of the individual that placed the note.
- The **Date Created** column contains the date and time the note was created.

- The **Substation** column contains the name of the substation that serves the device on which the note is located.
- The **Feeder** column contains the name of the feeder that serves the device on which the note is located.
- The **Device** column contains the name of the device on which the note is located.
- The **Note** column contains the note text.
- The **Delete** button deletes the selected note from the system. The note disappears from both the Note Summary the Viewer.
- The **Edit** button opens the Note Summary dialog box that allows you to edit the content of the note.
- The **Refresh** button updates the notes listed in the Note Summary. If you update a note (using the **Edit** button), then you must refresh the view on the Note Summary to view the changes.
- The **View** button displays in the Viewer the device on which the note is located, if you have a Viewer window open.
- The **Exit** button closes the Note Summary window.

Editing a Note

To edit a note, select a note from the Note Summary window, and then click the **Edit** button. The Note Summary dialog box opens. Do any of the following:

- To add or edit text, place the cursor in the Note field and type the text you want to add. Use the <Delete> key on the keyboard to remove unwanted text.
- To remove all note text, click the **Clear Note** button.
- To delete the note, click the **Delete** button.
- To save your changes, click **Save**. The Note Summary dialog box closes.

Using the Tag Summary

Use the Tag Summary window to see a list of all the tags that have been placed on devices using the Control Tool window.

The Tag Summary window displays the following fields and buttons:

- The **Tag #** column contains the unique number of the tag attached to the device.
- The **User** column contains the user name of the individual that placed the tag.
- The **Date Created** column contains the date and time the tag was created.
- The **Substation** column contains the name of the substation that serves the device on which the tag is located.
- The **Feeder** column contains the name of the feeder that serves the device on which the tag is located.
- The **Device** column contains the name of the device on which the tag is located.

Buttons

- The **Delete** button deletes the selected tag from the system. The tag disappears from both the Tag Summary the Viewer.
- The **Refresh** button updates the tags listed in the Tag Summary.
- The **View** button displays in the Viewer the device on which the tag is located, if you have a Viewer window open.

- The **Exit** button closes the Tag Summary window.

Using the Abnormal Device Summary

The Abnormal Device Summary lists all devices that are not in their nominal state. For example, if a switch that is nominally closed is currently open, it will display in the Abnormal Device Summary. If a SCADA system is integrated with Oracle Utilities Network Management System, any devices that are reported by a SCADA point as being in an off-nominal state will also display. This will also display any wire downs or jumpers, or emergency cables in either an open or closed state.

The Abnormal Device Summary displays the following fields and buttons:

- The **Date** contains the date and time that the device was last operated.
- The **Feeder** column contains the name of the feeder that serves the abnormal device.
- The **Device** column contains the name of the abnormal device.
- The **Description** column contains a description of the operation that caused the abnormal state.
- The **Source** column contains the source of the abnormal operation.
- The **Value** column contains the current state of the device.
- The **Phase** column contains the phases of the device.
- The **Nominal** column contains the normal state of the device.
- The **Attributes** button displays the Attributes window for the selected device.
- The **View** button displays in the Viewer the selected device, if you have a Viewer window open.
- The **Exit** button closes the Abnormal Device Summary window.

Viewing the Systems Alarm List

The Systems Alarm list window displays any system-wide alarms there may be. System-wide alarms may be generated whenever one of the Oracle Utilities Network Management System services fails or when there are control zones not under the authority of any user. Access the Systems Alarm list window by clicking on the **System Alarms** button on the Environment Manager.

The Systems Alarm list displays the following fields and buttons:

- The **Date** column contains the date and time at which the alarm was generated.
- The **Description** column contains a description of the alarm.
- The **Who Ack** column contains the name of the user that acknowledged the alarm, if any.
- The **Date Ack** column contains the date and time at which the user acknowledged the alarm, if any.
- The **Acknowledge** button is used to acknowledge the selected alarm. The Who Ack and Date Ack columns are then populated for the alarm row.
- The **Clear** button is used to remove a selected alarm from the list. You must first acknowledge the alarm before you can clear it.
- The **Exit** button closes the Systems Alarm list window.

Using the SCADA Summary

SCADA functionality is provided as an extension to Oracle Utilities Network Management System. An overview of SCADA extensions is provided in **Chapter 13: SCADA Extensions**.

The SCADA Summary provides the current values and qualities of all mapped SCADA measurements in Oracle Utilities Network Management System. Each row of this summary represents one measurement. There may be multiple unique measurements on one SCADA device. SCADA information includes digital and analog measurements, along with the quality codes and any user comments for each measurement. You can use the summary to view measurement information, manually replace current SCADA values, and inhibit updates.

This section contains the following topics:

- **SCADA Summary Fields and Buttons**
- **Preventing Updates from SCADA**
- **Adding Comments to SCADA Measurements**
- **Deleting Comments from SCADA Measurements**
- **Manual Entry and Override of SCADA Values**

SCADA Summary Fields and Buttons

To open the SCADA Summary, open the **Summaries** toolbox on the Environment Manager and select **SCADA Summary**.

The SCADA Summary displays the following fields and buttons:

- The **Feeder** column contains the name of the feeder reporting the SCADA measurements.
- The **Device** column contains the name of the device reporting the SCADA measurements.
- The **Attribute** column contains the SCADA measurement value (e.g., status, voltage, current).
- The **Value** column contains the last reported measurement value. The value can be status, digital, or analog. For status measurements, the values are displayed as a test pair, such as open/close, on/off, etc. Analog and digital values are shown as floating point and integer values.
- The **Qual** column contains the Quality codes for the measurement that indicates the quality of the SCADA measurement (e.g., out of scan, inhibited, manual override). Several quality codes can be listed.
- The **Units** column contains the unit of measurement value (e.g., amps, kVA). Status measurements do not have units.
- The **Point Name** column contains the source for the measurement, as configured in the ANALOG_MEASUREMENTS.source or DIGITAL_MEASUREMENTS.source column in the Oracle Utilities Network Management System database.
- The **Type** column contains a description of the measurement type, as configured in the ATTRIBUTES.description column in the Oracle Utilities Network Management System database for the matching attribute.
- The **Comment** column contains the user-entered comment for the SCADA measurement, if any.
- The **Update** button refreshes the information displayed in the SCADA Summary window.
- The **Comment** button allows you to enter a comment for the measurement for the device.
- The **Inhibit** option on the Action menu sets the “inhibit” quality code for the selected SCADA measurement. This suppresses any new updates from SCADA.

- The **Cancel Inhibit** option on the Action menu removes the “inhibit” quality code from the selected SCADA measurement. This allows any new updates from SCADA to be displayed.
- The **Manual Entry** option allows you to enter a new value for the selected SCADA measurement. When a changed SCADA value is received by the system, it replaces the manually entered value.
- The **Manual Override** option allows you to enter a new value for the selected SCADA measurement. When a new SCADA value is received by the system, the measurement is blocked and the manually overridden value remains.
- The **Cancel Override** option on the Action menu cancels the manual override for the selected measurement and reverts the selected measurement to the last received value from the SCADA system.
- The **Inhibit Alarms** option on the Action menu prevents new updates from SCADA from being displayed. This also prevents any alarm updates that SCADA values may have generated.
- The **Cancel Inhibit Alarms** option on the Action menu cancels the inhibit alarms on the selected measurement, allowing updates from the SCADA system and resulting alarms based upon those values.
- The **Exit** button closes the SCADA Summary window.

Preventing Updates from SCADA

To prevent a SCADA measurement from accepting updates from SCADA, complete these steps:

1. Select a row in the list that belongs to the device you want to inhibit.
2. Select the **Inhibit** option from the Actions menu.

Sorting and Filtering

You can sort and filter the SCADA Summary table using standard sort and filter capabilities (see **Sorting and Filtering Data** on page 1-3).

Adding Comments to SCADA Measurements

To add comments to a SCADA measurement, complete these steps:

1. Select the row of the measurement you want to comment on.
2. Click the **Comment** button. A dialog box opens.
3. Type your comments in the **New Value** field.
4. Click the **Save** button. Your comments display in the **Comment** column of the SCADA Summary.

Deleting Comments from SCADA Measurements

To delete comments from a SCADA measurement, complete these steps:

1. Select the row of the measurement you want to delete the comment from.
2. Click the **Comment** button. The Comment dialog box opens with the existing comment appearing in the New Value field.
3. Click the **Delete** button. The comment disappears from the **Comment** column of the SCADA Summary.

Manual Entry and Override of SCADA Values

Occasionally, you may need to manually enter a status, digital value, or analog value for a SCADA measurement.

To enter a value, complete these steps:

1. Select the SCADA measurement row.
2. Click either the **Manual Entry** or **Manual Override** button. A manual entry will allow future SCADA value changes to update the value you enter. A manual override will no longer be updated by SCADA until the Manual Override is removed by clicking the **Cancel Override** button. This can be useful when testing specific devices or RTU communications offline, since the test operations can be prevented from creating outages in Oracle Utilities Network Management System by putting manual overrides on the appropriate status measurements.
 - If the value for the selected measurement is a switch status measurement (i.e., open/close), a dialog box opens allowing you to select either open or close.
 - If the value for the measurement is any other type of measurement (i.e., multi-state digital, analog), a dialog box opens allowing you to enter a value. Multi-state digitals are not available through the Oracle Utilities Network Management System SCADA ICCP Block 1, 2, and 5 Adapter.
3. Select or enter the value you want to change the measurement to.
4. Click **OK**.

Note: Clicking on the **Manual Override** button “blocks” any new values coming from the SCADA measurement. It does not affect the physical SCADA device, it only blocks the value reported by the SCADA device to Oracle Utilities Network Management System.

Using the Model Validation Environment

The Model Validation Environment lets you study or edit information in the operations model, including database tables, model changes, and device attributes.

This section contains the following topics:

- **Logging In**
- **Using the Model Validation Environment Manager**
- **Using the SqlX Database Query**
- **Using the Object Debug (What) Window**
- **Using the Topology View Window**
- **Viewing Model Changes**
- **Using the Model Build Report**
- **Viewing Attribute Information**
- **Model Validation Viewer**

Logging In

When an authorized user logs into the system under the Model Validation user type, Oracle Utilities Network Management System opens with an Environment Manager that contains model validation and administrative tools.

To open the Model Validation Environment Manager, complete these steps:

1. Click on the **Login** button on the Oracle Utilities Network Management System Login screen. The Login dialog box opens.
2. Enter your user name and password.
3. Open the drop-down menu and select **Model Validation**.
4. Click **OK**.

Using the Model Validation Environment Manager

The Model Validation Environment Manager offers access to windows for viewing and editing database tables, device attributes, and more.

The Model Validation Environment Manager windows contains the following buttons:

- The **Authority** button opens the Authority window.
- The **DB Query** button opens the SqlX window for viewing table contents in the Relational Database Management System (RDBMS). This window is used for studying table data that controls system functions, including users, authorizations, and application configuration.
- The **Object Debug** button opens the What dialog box used for model debugging. It allows you to select devices in the Viewer window and display their model information.
- The **Topology View** button opens the Topology View window, which is used to walk through the electrical topology. It provides a “top view” of what the Viewer displays in the maps.
- The **Model Changes** button opens the Model Changes window that lists any model build patches that remain unresolved.
- The **MB Report** button opens an HTML-based overview of the model build progress and the status of patches built for model builds that have recently occurred.

- The **Attribute Info** button opens the Attributes window.

The last four buttons on the Environment Manager (**Help**, **Refresh Apps**, **Relogin**, **Logout**) perform exactly the same functions as the buttons on the Oracle Utilities Network Management System – Operator’s Workspace Environment Manager. For more information on these buttons see **Administrative Tools** on page 1-12.

Using the SqlX Database Query

The SqlX database query function allows you to quickly view the table contents in the relational database. This data is used for many administrative tasks such as adding users, changing authorizations, and reconfiguring an application. While knowledge of SQL will enhance your use of this feature, the SqlX window allows a user with little or no knowledge of SQL to search the database.

This section includes the following topics:

- **Using the SQLX Window**
- **Performing SQL Queries Manually**
- **Performing SQL Queries Without Manually Entering Strings**
- **Using the SqlX Queries Window**
- **Displaying a Query**
- **Creating a New Query**
- **Stacking Queries Using SqlX**
- **Selecting a Query to Execute in the SqlX Window**

Using the SQLX Window

To open the SqlX window, click the **DB Query** button on the Model Validation Environment Manager. The SqlIX window displays the following buttons:

- The **Execute** button executes the current query. The query results display in the results area that takes up the largest portion of the display.
- The **Clear** button clears the current query and results data.
- The **Tables** button opens the SqlX Tables window and populates it with a list of all the tables in the RDBMS. This function may be used to quickly query the available tables and create a report showing the complete contents of any single table.
- The **Queries** button opens the SqlX Queries window that lets you create, store, and recall queries.
- The **Stack** button opens the SqlX Query Stack window, which lists all previously executed queries from the current SqlX session.
- The **Desc** button summarizes the selected table by displaying column names, allowable data types for the columns, and allowable size for the data type. This summary is useful when performing queries.
- The **Print** button opens the Print dialog box, allowing you to print the displayed information.
- The **Quit** button closes the SqlX window.

Performing SQL Queries Manually

To manually perform a query, enter an SQL query string in the Query field and click the **Execute** button on the SqlX window. The columns in the database appear in the Query Results area.

Performing SQL Queries Without Manually Entering Strings

To perform queries without manually entering SQL strings, use the SqlX Tables, SqlX Queries, and SqlX Query Stack windows. These windows enable users who are unfamiliar with SQL to perform queries. They are also helpful for users who know SQL, enabling them to quickly find and modify query strings.

Using the SqlX Tables Window

The SqlX Tables window lists all the tables contained in the database, allowing you to perform a query without having to manually enter a query string.

To access this window, click the **Tables** button in the SqlX window. The SqlX Tables window displays the following buttons:

- The **OK** button places the selected table name into the SqlX window's query field with a "select * from [table name]" string and closes the SqlX Tables window.
- The **Apply** button places the select table name into the SqlX window's query field with a "select * from [table name]" string, but leaves the SqlX Tables window open.
- The **Cancel** button closes the SqlX Tables window without displaying table data.
- The **Help** button is non-functional – the Help documentation for the Oracle Utilities Network Management System product is accessible outside of the Oracle Utilities Network Management System applications via Internet Explorer.

Selecting a Table

If you select a table name from the Database Tables list, the Selection field populates with the selected table name. You can manually modify the table selection in the Selection field.

Executing a Query

Click **Apply** or **OK** to place the table name in the SqlX window's query field with a "select * from [table name]" string. The **OK** button closes the SqlX Tables window; the **Apply** button does not. When you execute this string in the SqlX window (click **Execute**), all information in the table will appear.

Using the SqlX Queries Window

The SqlX Queries window lets you create, store, and recall queries.

To open this window, click the **Queries** button from the SqlX window. The SqlX Queries window displays the following buttons:

- The **OK** button copies the currently selected query to the Query field in the SqlX window and closes the SqlX Queries window. When the query is executed in the SqlX window, the stored query title appears at the top of the results area.
- The **Apply** button copies the currently selected query to the Query field in the SqlX window and keeps the SqlX Queries window open. When the query is executed in the SqlX window, the stored query title appears at the top of the results area.
- The **Store** button stores the information in the Name, Title, and Query fields as a query. If a query is already stored with the same name, the new entry will replace the previous one.
- The **Delete** button deletes the selected query from storage.
- The **Cancel** button closes the SqlX Queries window.

- The **Help** button is non-functional – the Help documentation for the Oracle Utilities Network Management System product is accessible outside of the Oracle Utilities Network Management System applications via Internet Explorer.

Displaying a Query

The names of all the stored queries appear in the Stored Queries list at the top of the SqlX Queries window. If you select a query in the list, the Name, Title, and Query fields populate for the selected query. To display the query in the SqlX window, click on **Apply** or **OK**. The **OK** button closes the SqlX Queries window; the **Apply** button does not.

Creating a New Query

To create a new query, enter a name, title, and query string and click the **Store** button on the SqlX Queries window. The new query appears in the Stored Queries list.

Stacking Queries Using SqlX

The SqlX Query Stack lists all previously executed queries from the current SqlX session. Open the SqlX Query Stack window by clicking the **Stack** button in the SqlX window.

The SqlX Query Stack displays the following buttons:

- The **OK** button copies the selected query to the Query field in the SqlX window and closes the SqlX Query Stack window.
- The **Apply** button copies the selected query to the Query field in the SqlX window, but does not close the SqlX Query Stack window.
- The **Cancel** button closes the SqlX Query Stack window without copying the selected query to the Query field in the SqlX window.
- The **Help** button is non-functional – the Help documentation for the Oracle Utilities Network Management System product is accessible outside of the Oracle Utilities Network Management System applications via Internet Explorer.

Selecting a Query to Execute in the SqlX Window

The Selection field displays the query selected from the Query Stack list.

To display the query in the SqlX window, click on **Apply** or **OK**. The **OK** button closes the SqlX Query Stack window; the **Apply** button does not.

Using the Object Debug (What) Window

Object Debug is used for model debugging. It allows you to select devices in the Viewer window and display their model information. This section includes the following topics:

- **Opening the Object Debug window**
- **Retrieving Device Information**
- **Viewing the What Tool Dialog Box**

Opening the Object Debug window

To open the Object Debug window, click the **Object Debug** button on the Model Validation Environment Manager. The Object Debug window displays the following buttons:

- The **What** button opens the What Tool dialog box, which displays information about the device, including identity, state, topological connections, feeder, and symbology.
- The **Focus** button sends a message to all Viewer windows to navigate to the selected device and center on it.
- The **Quit** button closes the What window.

Retrieving Device Information

To retrieve information about a device, complete these steps:

1. Select a device in the Viewer window to populate the Object field with that device.
2. Click the **What** button. The What Tool dialog box opens displaying information about the device, including identity, state, topological connections, feeder, and symbology.
3. Click the **Focus** button. The Attribute Information (Table Viewer) window opens showing the table in which the device appears. The Control Tool opens for the device. The Viewer centers on the device (if it is not already centered on it).

Viewing the What Tool Dialog Box

To open the What Tool dialog box, click the **What** button in the Object Debug (What) window. The What Tool dialog displays device information in three sections.

- The **Detailed Device Information** area displays device information, particularly graphical information (other than coordinates). The information displayed includes:
 - Device handle
 - Map containing the device
 - Display group
 - Symbology class and symbol ID
 - Energization status
 - Nominal state
 - Network Component Group (NCG)
 - Voltage
 - Rank (bitfield value)
 - Override color
 - Visibility settings
- The **Port A (from):Port B (to)** area Displays all of the device's topological information, such as current and nominal status, phases, and energization. The feeder for each phase is listed, meaning that the FID or FBD handle will be listed. Each of its ports are displayed with its connected branches. Special states of the following will be listed as Boolean values:
 - Isolated
 - Secured
 - Delegated
- The **Coordinate/Attribute Information** area lists of the coordinates of the object and object type in the model.

A detailed explanation of modeling information is beyond the scope of this document.

Using the Topology View Window

The Topology View window is used to walk through the electrical topology model, providing an overview of what the Viewer displays in the maps. This section includes the following topics:

- **Opening the Topology View**
- **Walking Through the Topology Model**
- **Viewing Model Changes**

Opening the Topology View

To open the Topology View (TopView), click the **Topology View** button on the Model Validation Environment Manager. The Topology View window displays the following buttons:

- The **Reset** button sets all device statuses to nominal values.
- The **Focus** button focuses the Viewer window on the selected object and opens the Table Viewer window and the Control Tool, displaying information on the selected device.
- The **What** button opens the What window for studying model information about a selected device (see **Using the Object Debug (What) Window** on page 1-65).
- The **Details** button provides additional information about the branches and nodes. This information is not available through the Topology View window, but is printed to standard output.
- The **Quit** button closes the Topology View window.

Walking Through the Topology Model

To walk through the topology model, complete these steps:

1. Select a device in the Viewer window.
 - The Object field of the Topology View window populates with that device. One of the device's nodes is chosen arbitrarily and displayed in the Node field.
 - All branches connected to that node display in the main window with their second nodes listed.
2. To view another node, reselect the object in the Viewer window. The Node field toggles to another node.
3. Select one of the rows in the window. That object and node display in the Object and Node fields, with all branches connected to that node displaying in the main window.
 - Selecting a device in TopView also selects it in the Viewer. This is helpful when walking through the topology.
4. Repeat these steps to walk through the topology model.

Viewing Model Changes

The Model Changes window lets you manage model changes. It lists any model build patches that remain unresolved. These are patches that have been applied to the database but have not yet been committed into the model. The Model Changes window lets you select a patch and then perform one of two actions:

- Attempt to commit the patch
- Reject the patch

Using the Model Changes window

To open the Model Changes window, click on the **Model Changes** button on the Model Validation Environment Manager.

The Model Changes window displays the following fields and buttons:

- The **Patch** column contains the number assigned to the patch.
- The **Description** column contains the type of patch (e.g. model edit, incremental build, work order).
- The **Reason** column contains the reason the patch displays in the Model Changes window. Options include: System error, In progress, Real time data dependency, Dependent on uncommitted patch, Applied but not committed, Undo model edit, Permanent model edit.

- The **Day** column contains the date the patch was created.
- The **Time** column contains the time the patch was created.
- The **Work Order** column contains the name of the work order, if the patch is a work order.
- The **Dependency** column contains the model patch upon which the build is dependent. If there is more than one patch, the oldest one is listed.

Buttons

- The **Re-Submit** button resubmits the selected patch.
- The **Reject** button rejects the selected patch.
- The **Reset** button clears the list of partitions and refreshes the list of patches.
- The **View** button focuses on the associated object if the patch is a model edit. If the patch is a work order, two Viewer windows open displaying a “before and after” of the work to be performed.
- The **Show Log...** button displays the error log for the selected patch.
- The **Quit** button closes the Model Changes window.

Menus

The File, Sort, and Filter menus on the Model Changes window are similar to other menus in Oracle Utilities Network Management System. For more information on these menus, see **Getting Started With Operator’s Workspace on page 1-1**.

Sort Menu

- **Patch** - Sorts the content of Model Changes window using Patch name.
- **Day** - Sorts the content of Model Changes window using date and time stamp of patch creation.
- **Work_Order** - Sorts the content of Model Changes window using work order name.

Filter menu

- **Model Edits** - Display only model edit patches in the Model Changes Window
- **Work Orders** - Displays only work order patches in the Model Changes Window.

Displaying Partition and Work Order Information

When you select a patch from the list at the top of the window, the table underneath the list displays a list of all partitions associated with that patch. If the patch is a work order, the name of the work order appears in the Work Order field.

Using the Model Build Report

For an overview of the model build progress and the status of patches built for model builds that have recently occurred, you can generate an HTML report with the Model Build Report window. Open the report by clicking the **MB Report** button on the Model Validation Environment Manager.

Note: You can adjust the timeframe of the generated report.

Colors indicate whether a patch build went through or failed. The report lists the maps in the queue to be built, the patch number, filename, date the patch was created, and point of failure.

Viewing Attribute Information

The Attributes window allows you to access information on selected devices:

To access device attribute information, complete these steps:

1. Open the Attributes window by clicking the **Attribute Info** button on the Model Validation Environment Manager.
2. If you know the name of the device you want to find attributes for, type it in the Selection field. If you don't know the name of the device:
 - Open a Viewer window and load the map containing the device.
 - Locate and select the device in the Viewer by clicking on it. The device name appears in the Selection field of the Attribute Information window.
3. Click on the **Execute Query** button. The attribute data appears in the results area of the window.
4. To print the displayed information, click the **Print** button.
5. Click the **Quit** button to close the Table Viewer window.

Model Validation Viewer

The Viewers section of the Model Validation Environment Manager controls the display of the Viewer window. For further information on the Viewer, see **Using the Operator's Workspace Viewer** on page 1-16.

Using the Administration Environment

The Administration Environment lets you study or edit information in the operations model, including database tables, default ERT values, and viewing areas.

This section contains the following topics:

- **Logging In**
- **Using the Administration Environment Manager**
- **Using the Default ERT Editor Window**
- **Using the Draw Link Window**
- **Using the View Areas Window**
- **Using the Administration Viewer**

Logging In

When an authorized user logs into the system under the Administration user type, Oracle Utilities Network Management System opens with an Environment Manager that contains administrative tools. To open the Administration Environment Manager, complete these steps:

1. Click on the **Login** button on the Oracle Utilities Network Management System Login screen. The Login dialog box opens.
2. Enter your user name and password.
3. Open the drop-down menu and select **Administration**.
4. Click **OK**.

Using the Administration Environment Manager

The Administration Environment Manager offers access to windows for viewing and editing database tables, default ERT values, and more.

The Administration Environment Manager displays the following buttons:

- The **SqlA** button opens the SqlA window for viewing and modifying table contents in the Relational Database Management System (RDBMS). This window is used for studying and editing table data that controls system functions, including users, authorizations, and application configuration.
- The **Trouble Call Entry** button opens the Trouble Call Entry window. See **Entering Trouble Calls** on page 2-50 for more information about the Trouble Call Entry window.
- The **Symbology Editor** button opens the Symbology Viewer window that allows you to view and edit the Viewer symbols that represent aspects (devices, crew assignments, etc.) of the operations model. See **Identifying Symbology** on page 1-28 for more information about the Symbology Viewer window.
- The **Default ERT Editor** button opens the Default ERT Editor window that is used to manage the inputs for Oracle Utilities Network Management System Trouble Management default estimated restore time values.
- The **Authority** button opens the Authority window. See **Taking Authority** on page 1-13 for more information about the Authority window.
- The **View Documents** button opens the Draw Link window that allows you to associate devices in the electrical topology model with various documents, as well as to view those associated documents.
- The **View Areas** button opens the View Areas window that allows you to create and manage view areas that can be displayed in the Viewer window.
- The **Viewers** section of the Environment Manager controls the display of the Viewer. See **Using the Operator's Workspace Viewer** on page 1-16 for more information about this section.

The last three buttons on the Environment Manager (**Help**, **Relogin**, **Logout**) perform exactly the same functions as the buttons on the Oracle Utilities Network Management System – Operator's Workspace Environment Manager. For more information on these buttons see **Administrative Tools** on page 1-12.

Using the Default ERT Editor Window

The Default ERT Editor Window is used to manage the inputs for Oracle Utilities Network Management System Trouble Management default estimated restore time values. It allows you to modify the ERT values for each device class by control zone, as well as set a system-wide default ERT.

To open the Default ERT Editor window, click the **Default ERT Editor** button on the Administration Environment Manager. The Default ERT Editor window displays the following fields and buttons:

- The first column of the Default ERT Editor window lists the names of the device classes for which default ERT values have been configured. The values in this column are not editable.
- The remainder of the columns in the Default ERT Editor window correspond to each control zone for which default ERT values have been configured, and the cells contain the current default ERT value (in minutes) for a device with the corresponding device class in that zone.
- The **Active Default ERT** fields contain the currently active system-wide default ERT value that has been specified, if any. These fields are not editable.

- The **Modified Default ERT** fields are used to set and/or modify the Active Default ERT value.

Buttons

- The **Clear Modified ERT** button is used to clear any contents in the Modified Default ERT fields.
- The **Apply** button applies any changes made to the Default ERT Editor window.
- The **Exit** button exits the Default ERT Editor window.

Modifying Default ERT Values for a Device/Zone

To modify existing default ERT values for a device class/zone, complete these steps:

1. Click the **Default ERT Editor** button on the Administration Environment Manager to bring up the Default ERT Editor window.
2. Click into the cell that corresponds to the device class and control zone whose default ERT value you wish to change.
3. Type the number of minutes you wish to use for the new default ERT value into the cell.
4. Repeat the two previous steps for any other default ERT values you wish to modify.
5. Press the **Apply** button. A confirmation dialog appears.
6. Press the **OK** button on the dialog to confirm your changes. Any new events will enter the system using the modified default ERT values, if applicable. Any existing events with an Est Src value = I in the Work Agenda will have their ERT values recalculated using the modified default ERT values, if applicable.

Note: Invoking the Apply button causes a full re-examination of all events currently in the system, thus it is advised to use it sparingly when there are a large amount of events present.

Setting a System-Wide Default ERT

To set a system-wide default ERT value for the system, complete these steps:

1. Click the **Default ERT Editor** button on the Administration Environment Manager to bring up the Default ERT Editor window.
2. Type a date and time into the Modified Default ERT fields.
3. Press the **Apply** button. The following confirmation dialog appears.
4. Press the **OK** button on the dialog to confirm your changes. Any new events will enter the system using the system-wide default ERT value, if applicable. Any existing events with an Est Src value = I in the Work Agenda will have their ERT values reset to the system-wide default ERT value, if applicable.

Note: Invoking the Apply button causes a full re-examination of all events currently in the system, thus it is advised to use it sparingly when there are a large amount of events present.

Removing a System-Wide Default ERT

To remove a system-wide default ERT value for the system, complete these steps:

1. Click the **Default ERT Editor** button on the Administration Environment Manager to bring up the Default ERT Editor window.
2. Click the Clear Modified ERT button. The values in the Modified Default ERT fields are cleared.
3. Press the **Apply** button. A confirmation dialog appears.

4. Press the **OK** button on the dialog to confirm your changes. Any new events will enter the system using their regular default ERT values, if applicable. Any existing events with an Est Src value = I in the Work Agenda will have their ERT values recalculated using their regular default ERT values, if applicable.

Note: Invoking the Apply button causes a full re-examination of all events currently in the system, thus it is advised to use it sparingly when there are a large amount of events present.

Using the Draw Link Window

The Draw Link window is used to associate devices in the electrical topology model with various documents, as well as to view those associated documents.

To open the Draw Link window, click the **View Documents** button on the Administration Environment Manager. The Draw Link window displays the following fields and buttons:

- The **Selected Device** field lists which device is presently selected in the Viewer, as well as which documents are presently associated with the device, if any.
- The **Unassign** button allows you to remove the association of the selected document with the selected device.
- The **View** button allows you to view the selected document for the selected device.
- The **Available Documents** field lists all of the contents of the \$CES_DRAWINGS directory. The **Filter** button and the text field beside it may be used to filter the Available Documents list.
- The **Associated Devices** field lists which devices have an association with the currently selected item in the Available Documents list.

Buttons

- The **Assign** button allows you to associate the currently selected item in the Available Documents list with the Selected Device.
- The **Preview** button allows you to view the currently selected item in the Available Documents list.
- The **Quit** button closes the Draw Link window.

Associating a Document With a Device

To associate a document with a device, complete these steps:

1. Login to Operator's Workspace as an Administration user. The Administration Environment Manager appears.
2. Select the **View Documents** option on the Environment Manager. The Draw Link Window appears.
3. Open a Viewer window. Locate the device you wish to create an association for, and select that device in the Viewer. The Draw Link window's **Selected Device** field populates with the name of the selected device.
4. Select the item from the **Available Documents** list that you wish to associate with the selected device. The **Assign** and **Preview** buttons are now sensitized.
5. Click the **Preview** button to see the selected document. The selected document appears in a new window.
6. Click the **Assign** button to create the association between the selected document and selected device.

- The field below the selected device populates with the name of the selected document, and the Associated Devices field populates with the name of the selected device.
- In the Viewer window, a document condition now appears on the selected device.
- Click the **Quit** button to exit the Draw Link window.

Filtering the Available Documents List

To filter the Available Documents list, complete these steps:

1. Select the **View Documents** option on the Environment Manager. The Draw Link Window appears.
2. Enter your filter criteria into the field next to the **Filter** button.
3. Click the **Filter** button. The Available Documents list is now filtered by the entered criteria.

Removing a Document Association

To remove an association between a document and a device, complete these steps:

1. Login to Operator's Workspace as an Administration user. The Administration Environment Manager appears.
2. Select the **View Documents** option on the Environment Manager. The Draw Link Window appears.
3. Open a Viewer window. Locate the device you wish to remove an association for, and select that device in the Viewer. The Draw Link window's **Selected Device** field populates with the name of the selected device, and the field below populates with all of the documents associated with that device.
4. In the field below the Selected Device, select the document you wish to disassociate from the device. The **Unassign** and **View** buttons are now sensitized.
5. Click the **View** button to see the selected document. The selected document appears in a new window.
6. Click the **Unassign** button to remove the association between the selected document and selected device.
 - The selected document is removed from the field below the Selected Device.
 - In the Viewer window, a document condition is removed from the selected device.
7. Click the **Quit** button to exit the Draw Link window.

Viewing Associated Documents

In addition to viewing associated documents from the Draw Link window while you are logged in to the Administration environment, documents may also be viewed by operators via the Control Tool.

To view associated documents via the Control Tool, complete these steps:

1. Open a Viewer window. Locate a device that has an associated document you wish to view. These devices will appear with a document condition on them in the Viewer window.
2. Double-click on the device to bring up the Control Tool. Select the **View Documents...** option from the Control Tool.
 - If only one document is associated with the device, the document will appear in a separate window.
 - If there is more than one document associated with the device, the non-administrative version of the Draw Link window will appear, listing each associated document for the selected device.

- Select the document you wish to view, and then click on the **View** button. The document will appear in another window.
- Click the **Quit** button to exit the Draw Link window.

Using the View Areas Window

The View Areas window lets you create and manage view areas that can be displayed in the Viewer window. For further information on the Viewer, see **Using the Operator's Workspace Viewer** on page 1-16.

The Views Areas window displays the following fields and buttons:

- The **Area Name** field contains the name of the view area that you are working with.
- The **Display View(s)** button is used to display the view area identified by the Area Name field in the Viewer window.
- The **Delete View(s)** button is used to permanently remove the view area identified by the Area Name field.
- The **Working Viewers** area is used to identify which Viewer window you are working with (VIEW 1, VIEW 2, VIEW 3, and VIEW 4).
- The **Capture** button is used to capture a new view area from the Viewer window specified in the Working Viewers area.
- The **View Area List...** button brings up the View Area Select dialog, which presents a list of currently defined view areas.

Creating a New View Area

To create a new view area, complete these steps:

1. Open a Viewer window and locate the area that you wish to define a new view area for.
2. Click the **View Areas** button on the Administration Environment Manager to bring up the View Areas window.
3. Enter a name for the new view area into the Area Name field. The **Display View(s)** and **Delete View(s)** buttons are now enabled.
4. Click the **VIEW 1** button in the Working Viewers area. The **Capture** button is now enabled.
5. Click the **Capture** button. The message are in the Viewer window indicates that the view area save was successful.

The newly defined view area will now be visible when you perform a Viewing Area search in the Search tool.

Deleting a View Area

To delete an existing view area, complete these steps:

1. Click the **View Areas** button on the Administration Environment Manager to bring up the View Areas window.
2. Click on the **View Area List...** button. The View Area Select dialog appears.
3. Select the view area you wish to delete, and then click the **OK** button. The View Area Select dialog disappears, and the Area Name field is populated with the name of selected view area.
4. Click the **Delete View(s)** button. The view area has been permanently removed from the database. The deleted view area will no longer be visible in the View Area Select dialog.

Using the Administration Viewer

The Viewers section of the Administration Environment Manager controls the display of the Viewer window. For further information on the Viewer, see **Using the Operator's Workspace Viewer** on page 1-16.

Chapter 2

Trouble Management

This chapter covers the following topics:

- **Managing Events with Trouble Management**
- **Managing Crews with Trouble Management**
- **Managing Calls with Trouble Management**
- **Viewing Trouble Summaries**

Managing Events with Trouble Management

Oracle Utilities Network Management System – Trouble Management includes windows that help you manage trouble events. This chapter describes those windows and how to perform basic event functions. This section includes the following topics:

- **Trouble Event Windows**
- **Work Agenda**
- **Work Agenda Trouble Events Lists**
- **Event Details**
- **Service/Secondary Outage Manager**
- **Event Recorder**
- **Create Event**
- **Damage Assessment**
- **AMR Requests**
- **Outage Correction**

Trouble Event Windows

The following table highlights the basic functionality of each of the trouble event related windows.

Window	Functions
Work Agenda	Displays lists of trouble events Allows you to acknowledge events Allows you to group events Allows you to associate devices with events

Window	Functions
Event Details	Allows you to record trouble and restoration details for events Allows you to record failed equipment information
Service/Secondary Outage Manager	Allows you to confirm additional service or secondary outages
Event Recorder	Records detailed event action steps Allows you to add comments
Create Event	Allows you to record events discovered in the field that have not been reported by customers
Damage Assessment	Allows you to record damage assessment information for events

Work Agenda

The Work Agenda is the “switchboard” for managing operations across Oracle Utilities Network System modules. It displays dynamically updated system information. Different views list information about trouble events, switching plans, safety documents, device operations, and System alarms

When you login to Oracle Utilities Network System Operator’s Workspace, the Work Agenda opens by default to the To Do List. If you have closed Work Agenda, you can open it again by clicking on the **All**, **To Do**, **In Progress**, **Incomplete**, or **Complete** button on the Environment Manager.

Work Agenda topics include:

- **Work Agenda Views**
- **Work Agenda Trouble Events Lists**
- **Acknowledging Events**
- **Setting the Work Queue**
- **Grouping Events**
- **Relating Events**
- **Unrelating Events**
- **Associating and Unassociating Calls with Devices**
- **Alerts**

Work Agenda Views

The view options available depend upon which Oracle Utilities Network System modules are included in the system, how they are configured, and what external systems they interface with (if any). Each view has its own set of columns, buttons, and Actions menu options. This section focuses on the five Work Agenda Trouble Events List views. To access a different view, click on the File menu and select the list you want to see.

The following table describes the various Work Agenda views.

View	Description
To Do List	Displays trouble events that require attention, as well as any trouble event alarms (events with Status NEW, F-NEW, S-NEW, P-NEW, M-NEW, UAS, F-UAS, S-UAS, P-UAS, M-UAS, W-UAS, SNT, S-SNT, P-SNT, M-SNT, W-SNT, RED, CRT, RSCH, NFY, VFY, and C-CNL). You can also access this view from the Environment Manager by clicking on the To Do button.
In Progress List	Displays most trouble events that have crew resources associated with them (e.g., a crew is onsite and is working to resolve the problem), as well as any trouble event alarms (events with Status ASN, F-ASN, ENR, F-ENR, S-ENR, W-ENR, S-ASN, W-ASN, ONS, F-ONS, S-ONS, W-ONS, SUS, S-SUS, W-SUS, RST, S-RST, RSCH, NFY, and VFY). You can also access this view from the Environment Manager by clicking on the In Progress button
All List	Displays all trouble events of any status. You can also access this view from the Environment Manager by clicking on the All button.
Incomplete List	Displays all incomplete trouble events and events that have maintenance work pending (events with Status INC, S-INC, P-INC, M-INC, MNP, and S-MNP). Incomplete events are events that are complete in the field but the information for them has not been completely entered on the Event Details window. You can also access this view from the Environment Manager by clicking on the Incomplete button.
Completed List	Displays all completed and cancelled trouble events (events with Status CMP, F-CMP, S-CMP, P-CMP, M-CMP, W-CMP, CNL, F-CNL, and W-CNL). You can also access this view from the Environment Manager by clicking on the Completed button.
Device Operations List	Displays information about device operations performed using the Control Tool. See Using the Operator's Workspace Control Tool on page 1-37 for more information.
Systems Alarm List	Displays all current system alarms. You can also access this view from the Environment Manager by clicking on the System Alarms button.
SCADA Alarms List	Displays alarms reported by SCADA devices. See Using the SCADA Alarms List on page 13-6 for more information.
Switching Plan List	Displays all saved switching plans, which includes both planned and emergency switching operations. You can also access this view from the Environment Manager by clicking on the Switching Plan List button. See Switching Plan List on page 14-36 for more information.
Switching Templates List	Displays all saved switching templates. You can use templates for creating new switching plans from frequently used switching step sequences. See Switching Templates List on page 14-38 for more information.
Misc List	Displays the Miscellaneous Log. See Misc List on page 14-38 for more information.

View	Description
Safety Doc List	Displays all safety documents issued for device operations. You can also access this view from the Environment Manager by clicking on the Safety Doc List button. See Viewing the Safety Document List on page 14-46 for more information.
Abnormal Device Summary	Displays the Abnormal Device Summary. See View Abnormal on page 6-46 for more information.
AMR Requests	Displays active requests in the AMR Requests page. See AMR Requests on page 2-26 for more information.
Completed AMR Requests	Displays the Completed AMR Requests page. See AMR Requests on page 2-26 for more information.

Work Agenda Trouble Events Lists

In the Work Agenda, there are five lists that display trouble events. These views include:

- To Do List
- In Progress List
- All List
- Incomplete List
- Completed List

All of these lists contain similar columns and buttons, although not all columns and buttons appear on each of these views. These lists of outage and non-outage events are commonly referred to as the Trouble Events Lists.

The Trouble Events Lists prioritize events based on various conditions. Specifically, the lists are sorted in the following manner:

- Events are first sorted by emergency or hazardous conditions (E, then H, then blanks)
- Events are then sorted by the number of critical customers affected (# EMR, then # MED, then # KEY)
- Events are then sorted by their event priority value (a value established by the different types of clues an event has)
- Events are then sorted by the Customer minutes of interruption (Run CMI) value
- Events are then sorted by their Status value (To Do states, then In Progress states, then Incomplete states, then Complete states)

Event rows can be color-coded by status. To turn color codes on, toggle (click on) the **Color Disabled** button above the table. For more information about the color coding used to indicate event status on the Work Agenda, see **Event Status** on page B-2.

Trouble Events List Fields

The Trouble Events Lists displays the following fields:

- The **Audio Enabled/Disabled** radio button allows you to turn the audible alarm on and off.
- The **Color Enabled/Disabled** radio button allows you to turn the row color-coding on and off.
- The list title displays the list you are viewing (e.g., To Do List, All List, etc.).

- The **Sort/Filter** identifiers display which sort and/or filter is applied to the list.
- The **Status** column displays the status assigned to the event. See **Event Status Codes** on page A-1 for a complete list of status codes and descriptions.
- The **Event #** column displays the number the system has assigned to the event.
- The **Feeder** column displays the name of the feeder associated with the event.
- The **E/H** column indicates whether or not the event is an emergency or hazardous condition. An “E” in this column denotes extreme emergency, and an “H” in this column denotes hazardous.
- The **Start Date** column contains the date and time the event began.
- The **# Out** column contains the number of customers experiencing an outage for the event.
- The **# Calls** column contains the number of calls received for the event.
- The **Clues** column contains the clue codes for the calls received, if any.
- The **Phases Out** column contains the phases predicted out for the event.
- The **Device** column contains the name of the device associated with the event.
- The **Location** column contains either the address of the first customer that called if the event is a service outage or non-outage or the feeder location of the device if the event is a device outage.
- The **Crew** column contains the crew id(s) of the associated crew(s).
- The **Est Restore Time** column contains the estimated restoration time (ERT) for the event.
- The **Est Src** column contains the source of the ERT for the event. The possible source values are:
 N – none (no ERT)
 S – Oracle Utilities Network Management System – Storm Management
 P – Oracle Utilities Network System Storm Management “non-published global ERT”
 O – Oracle Utilities Network System Storm Management “onsite ERT”
 G – Oracle Utilities Network System Storm Management “published global ERT”
 C – User-entered (assumed to have been provided by the crew)
 I – Initial default ERT
- The **Pred Type** column contains the type of prediction (e.g., New, Revised, Device Operation, etc.).
- The **# Crit** column contains the total number of critical customers experiencing an outage for the event.
- The **Run CMI** column contains the running total number of customer minutes of interruption for the event. This value is no longer calculated once the event has been restored.
- The **# EMR** column contains the number of emergency customers experiencing an outage for the event.
- The **# MED** column contains the number of medically urgent customers experiencing an outage for the event.
- The **# KEY** column contains the number of key customers experiencing an outage for the event.
- The **Evt Type** column contains a description of the type of event. See **Event Type Codes** on page A-4 for a complete list of event type codes and their descriptions.

- The **Work Queue** column contains the name of the work group queue that the event has been referred to.
- The **Region** column contains the control zone region where the event occurred.
- The **Branch** column contains the control zone branch where the event occurred.
- The **Substation** column contains the control zone substation where the event occurred.
- The **Plan #** column contains the switching plan number associated with the event, if any.
- The **Restore Date** column contains the actual restoration date and time of the event.
- The **Grp Type** column indicates whether the event is manually grouped or related. The possible types are:
 - GRP – manually grouped
 - REL – manually related
 - TBG – to be grouped (seen while selecting events to group)
 - TBR – to be related (seen while selecting events to relate)
 - TBU – to be unrelated (seen while selecting events to unrelated)
- The **Rel Event #** column contains the event number of the parent or lead event when the event has a special relationship with one or more other events.
- The **Rel Type** column contains the type of special relationship that the event is involved in. The possible types are:
 - L – lead event of a partial restoration
 - M – momentary
 - N – nested
 - P – non-lead event of a partial restoration
 - R – manually related
 - S – switching (relationship between switching jobs and planned outages)
- The **Sent to Mobile** column indicates whether or not the event is in a state that makes it eligible to be sent to the mobile system.
- The **AMR Requested** column indicates whether or not AMR readings have been requested for this event. See **AMR Requests** on page 2-26 for more information.

Trouble Event List Buttons

The Trouble Events Lists displays the following buttons:

- The **Ack** button acknowledges the selected event.
- The **View** button focuses the Viewer on the device associated with the selected event
- The **Info...** button opens the Trouble Information window with information about the selected event.
- The **Event Details...** button opens the Event Details window with information about the selected event.
- The **Switching...** button opens the Switch Sheet Editor window and loads the switching plan associated with the selected event. If no plan is presently associated with the selected event, the Sheet Type popup dialog also opens, allowing you to create a new switching plan related to the selected event.
- The **Referral...** button opens the Work Queue dialog, allowing you to select a work group to refer the event to and enter any necessary remarks.

- The **More** button expands the Work Agenda window vertically to display more events. When the window is expanded, this button will return the window to its original size.
- The **Rel Crew** button releases the crew from the selected event. If more than one crew is associated with the event, a dialog box opens prompting you to select which crew to release.
- The **Send to Mobile** button changes the event status to a Sent status that is appropriate for the selected event (e.g., SNT, S-SNT, P-SNT, M-SNT, W-SNT). Also, if the Sent to Mobile column value happens to be “N” at the time the **Send to Mobile** button is pressed, it will update to a value of “Y”.
- The **Incomplete** button changes the event status to an Incomplete status that is appropriate for the selected event (e.g., INC, S-INC, P-INC, M-INC).
- The **Cancel Event** button cancels the selected event. A dialog box opens prompting you for a reason for the cancellation.
- The **Exit** button closes the Work Agenda window.

Trouble Event List Menus

The following table describes the Trouble Event Lists menus.

Menu	Description
File	[View Names] – Allow you to toggle between views. Print – Opens the print dialog box to allow you to print the current list. Exit – Closes the Work Agenda window.
Sort	Allows you to sort the displayed list. For more information, see Sorting on page 1-3.
Filter	Allows you to filter the displayed list. The “Switching” option filters the currently selected view such that it displays only planned outages and switching jobs, if present. For more information, see Filtering on page 1-5.
Actions	Provides the same functionality as the Work Agenda buttons, plus additional options depending on the view.

Actions Menu - The table below describes the options available on the Trouble Event Lists Actions menu.

Menu Option	Description
Ack	Acknowledges the selected event.
View	Focuses the Viewer on the device associated with the selected event.
Info...	Opens the Trouble Information window with information about the selected event.
Event Details...	Opens the Event Details window with information about the selected event.
Switching...	Opens the Switch Sheet Editor window and loads the switching plan associated with the selected event. If no plan is presently associated with the selected event, the Sheet Type popup dialog also opens, allowing you to create a new switching plan related to the selected event.

Menu Option	Description
Event Recorder...	Opens the Event Recorder that displays detailed information about the progress of the selected event. See Event Recorder on page 2-22 for more information.
Referral...	Opens the opens the Work Queue dialog, allowing you to select a work group to refer the event to and enter any necessary remarks.
More	Expands the Work Agenda window vertically to display more events. When the window is expanded, this button will return the window to its original size.
Rel Crew	Releases the crew from the selected event. If more than one crew is associated with the event, a dialog box opens prompting you to select which crew to release.
Incomplete	Changes the status of the event to an Incomplete status that is appropriate for the selected event (e.g., INC, S-INC, P-INC, M-INC).
Cancel Event	Cancels the selected event. A dialog box opens prompting you for a reason for the cancellation.
Group	Opens the Group dialog box, which allows you to manually group, relate and unrelate events.
Associate	Allows you to associate fuzzy events to a device.
Damage Assessment	Opens the Damage Assessment window with information about the selected event.
Auto Filter	Allows you to quickly filter the view by the selected cell value.
Auto Filter Off	Turns off any auto filter that has been applied.
Load Completed Events	By default, completed events are not loaded into the Work Agenda on startup for performance reasons. Use this button to load in completed events.
Send to Mobile	Changes the event status to a Sent status that is appropriate for the selected event (e.g., SNT, S-SNT, P-SNT, M-SNT, W-SNT). Also, if the Sent to Mobile column value happens to be “N” at the time the Send to Mobile button is pressed, it will update to a value of “Y”.
AMR Confirm	Allows you to ping AMR meter(s) for the selected event. If the event is a service outage, automatically initiates an AMR ping for that meter. If event is a device outage, navigates to the Trouble Info AMR Customers page, where you can select individual meters to ping.
Show AMR Request	Navigates to the AMR Requests page and displays AMR ping(s) for the selected event.
Show FLISR Report	Displays the Fault Location, Isolation, and Service Restoration tool for the selected event.
Exit	Closes the Work Agenda window.

Acknowledging Events

To acknowledge an event, complete these steps:

1. Select the row of the event with NEW, S-NEW, P-NEW, M-NEW, or RED status in the Trouble Events List.
2. Click on the **Ack** button. The event becomes acknowledged and its status changes accordingly.

Setting the Work Queue

To set a Work Queue value for an event, complete these steps:

1. Select the desired event's row in the Work Agenda.
2. Click on the **Referral...** button. The Work Queue dialog appears.
3. Select a value from the Refer To list.
4. Enter any desired remarks into the Remarks field.
5. Click the **OK** button. The Work Queue dialog disappears, and the Work Queue column of the selected row updates with the selected Refer To value.

Grouping Events

While the system automatically groups events according to the trouble analysis rules, you may come across some events that are related, but are not grouped because of data modeling issues (e.g. connectivity problems). You can manually group these events together using Event Grouping or Supply Point Grouping.

Group Dialog Box

The Group dialog box allows you to group events. To open the Group dialog box, select Group from the Actions menu in the Work Agenda window.

The Group Dialog displays the following fields:

- The **Selected Events** area displays all of the events that have been selected for grouping.
- The **Group Method** contains a selection of grouping options. The **Merge** option is used for event grouping. The **Relate** option does not group the selected events, but rather allows you to record a relationship between the events and enter notes in the Relationship Comments field. The **Unrelate** option allows you to remove one or more previously related events from the relationship.
- The **Relationship Comments** field allows you to enter comments about the relationship when the Group Method is set to "relate."
- The **Device** field displays the device associated with the first selected event. This is the device that the manually grouped event(s) will be associated with.

Grouping Events

To group events, complete these steps:

1. Open the Group dialog box by selecting **Group** from the Work Agenda Actions menu.
2. Make sure the **Group Method** is "merge".
3. In the Trouble Events list, select the row for the event that all subsequent events will be grouped to. The event number appears in the Selected Events field, and the device name appears in the Device field in the Group dialog box. This first event is called the **lead event**.
4. Select the row of an event in the Trouble Events list that you want to group to the first selected event. The event number for the event is added to the Selected Events field, but the device identification does not change.
5. If there are other events you want to add, select the row for those events in the Trouble Events list. The event numbers for the events are added to the Selected Events field.

6. To deselect a selected event, select its row again. The event number is removed from the Selected Events field.
7. Click on the **OK** button. The following occurs:
 - The selected events are grouped to the lead event.
 - The rows for the subordinate events disappear from the Trouble Events List.
 - The Event #, Device, and most other fields of the resulting event are taken from the lead event.
 - When grouping events to a SCADA outage, the begin time of the SCADA outage (a real outage caused by a SCADA device being opened from a SCADA interface) becomes the begin time of the resulting event.
 - When grouping various types of events to a non-SCADA outage, the begin time of the earliest outage becomes the begin time of the resulting event. (i.e. non-outage begin times will be ignored).
 - In all other cases, the earliest event begin time becomes the begin time of the resulting event.
 - Information from the first (earliest) call for an event (First Call Time, Location on a fuzzy event, non-outage or service outage) is taken from the first call out of all the calls in the resulting event.
 - Operator comment, Crew, # Out (for service outages and fuzzy events), # Calls, Clues, and all fields combined from the calls on the events is combined between all of the events involved in the grouping.
 - If the events that you selected do not meet the manual grouping rules, the system does not let you group them. An error message appears explaining the problem.

Event Grouping That is Allowed

- General fuzzy events (Fuzzy event which are not associated to a control zone) can group to any outage event.
- General fuzzy events with 0 customers out can group to any non-outage event or fuzzy event.
- General fuzzy events with more than 0 customers out can group with other fuzzy events with more than 0 customers out.
- Non-outage events can group to outage or non-outage events.
- Outage events can group to other outage events.
- Fuzzy events associated with a control zone can group to another event that is in the same control zone.

Event Grouping That is Not Allowed

- Outage events cannot group to non-outage events.
- Restored and completed events are not allowed to group with any other event.
- Meets (e.g., meet fire, etc.) cannot group with anything.
- Real outages and planned outages can not be grouped to another event.
- Switching events cannot group with anything (this restriction does not affect planned outages).
- A momentary outage cannot group with a event that is not a momentary outage.
- An outage is not allowed to group to another outage if it is not on the same device as or downstream from the lead outage.
- An event which is not a general fuzzy cannot group to a general fuzzy event.

- Fuzzy events associated with a control zone can not group to another event that is in a different control zone.
- A fuzzy event with more than 0 customers out can not be grouped into a non-outage event or a fuzzy event with 0 customers out.
- An event which is not a street intersection event (an event associated with a street intersection object rather than an electrical device) cannot group to a street intersection event.

Graphical Grouping

To add customers to an event graphically, follow these steps:

1. Select a probable outage in the Work Agenda
2. Press the **Info...** button to display the Trouble Info callers for this outage.
3. From the Trouble Info Callers page, you can navigate to the Supply Points page to view all existing Supply Points.
4. In the Viewer, press the **Outage Augmentation** button  to toggle into Supply Point Selection mode. See Viewer **Toolbar** on page 1-18 for more details.
5. Using a box or polygon, select a group of supply points and press the **Add Supply Points** button on the Supply Point Selection Dialog. See **Selecting Multiple Devices within a Polygonal Area** on page 1-27 or **Selecting Multiple Devices within a Rectangular Area** on page 1-27 for more details.

New Supply Points rows are added to the table in green and marked as To Be Grouped (TBG)
6. Press the **Update Event** button to group the Supply Points into the event.
7. Enter an event grouping threshold (in hours) in the Update Job confirmation dialog.
 - The selected event now includes the selected supply points and the Work Agenda row now reflects the new customer count and call count, if other calls existed on the selected Supply Points.
 - Supply Points with calls that did not pass the selected grouping threshold are not added to the outage and are marked in yellow with FAIL in the Grp column.
 - You can also remove Supply Points from the event by selecting them and pressing the **Remove** button, then the **Update Event** button. Any calls on the removed Supply Points create new events.

Relating Events

To relate events, complete these steps:

1. Open the Group dialog box by selecting **Group** from the Work Agenda Actions menu.
2. Change the **Group Method** to “relate”. The Relationship Comments field is now accessible.
3. In the Trouble Events list, select the row for the event that all subsequent events will be related to. The event number appears in the Selected Events field.
4. Select the row of an event in the Trouble Events list that you want to relate to the first selected event.
5. If there are other events you want to add, select the row for those events in the Trouble Events list. The event numbers for the events are added to the Selected Events field.
6. Type a comment into the **Relationship Comments** field, if desired.

7. Click the **OK** button. The selected events are related to one another. The **Grp Type** column in the Work Agenda for each event now contains “REL”, the **Rel Type** column now contains “R”, and **Rel Event #** column now contains the event number of the earliest event.

Unrelating Events

To unrelate events that have been related, complete these steps:

1. Open the Group dialog box by selecting **Group** from the Work Agenda Actions menu.
2. Change the Group Method to “unrelate.”
3. In the Trouble Events list, select the row for the event that you wish to unrelate. The event number appears in the Selected Events field.
4. If there are other events to you want to unrelate, select the row for those events in the Trouble Events list. The event numbers for the events are added to the Selected Events field.
5. Click the **OK** button. The selected events are unrelated. If two or more events are still part of that relationship, they remain related to each other. If the event that was displayed in the **Rel Event #** column was unrelated and two or more events are still part of that relationship, the **Rel Event #** column is updated with the event number of the earliest event remaining in the relationship.

Associating and Unassociating Calls with Devices

Sometimes a call comes in reporting a problem that is not clearly related to a particular customer or device. Until a device is identified for the problem, the event is considered a “fuzzy call.” When more information becomes available, you can associate the fuzzy call with a device. You can also unassociate these calls using the Trouble Information window.

Associating a Fuzzy Call with a Device

To associate an event with a device, complete these steps:

1. Open a Viewer window and load the map containing the device you want to associate.
2. In the Work Agenda list, select the row of the fuzzy event that you want to associate.
3. In the Work Agenda window, select Associate from the Actions menu. The Associate dialog box opens.
4. In the Viewer, select the device you want to associate the fuzzy call to. The device identification appears in the Device field of the Associate dialog box.
5. Click **OK** in the Associate dialog box. The row for the fuzzy event disappears from the Work Agenda, and the Oracle Utilities Network System Trouble Management analysis engine re-analyzes the fuzzy call using the selected associated device.

Unassociating/Reassociating a Call from/to a Device

To unassociate a call from one device and reassociate it to another device, complete these steps:

Note: If you are unassociating a call and you want to turn it into a fuzzy call, simply do not select a device to re-associate it with (i.e., omit the third and sixth steps below).

1. In the Work Agenda window, select the row for the event that contains the calls you want to unassociate.
2. Click on the **Info...** button. Call information about the event appears in the Trouble Information window.
3. Open a Viewer window and load the map containing the new device you would like to re-associate the call(s) with.
4. Select the call row(s) in the Trouble Information window.

5. In the Trouble Information window, select “Unassociate” from the Actions menu. The Unassociate dialog box opens.
6. Select a device in the Viewer to populate the New Device field in the Unassociate dialog box.
7. Click **OK**. The following occurs:
 - The call(s) are unassociated from the current device and associated with the new device.
 - The Oracle Utilities Network System Trouble Management analysis engine re-analyzes the event from which the calls were unassociated, as well as the unassociated calls using their new associated device.

Alerts

New and revised predicted events are sent to the Work Agenda from the Oracle Utilities Network System Trouble Management analysis engine. The system then alerts you to the new information with an audible alarm. The alarm will sound:

- Every three seconds continuously when an unacknowledged emergency or hazardous event or an event with a NFY status (Notify alarm) appears, until the event is acknowledged.
- Once every five minutes while there are any other unacknowledged events.

In addition, the system alerts you with Notify (NFY) alarms when:

- a dispatched crew has not been contacted by a specified time,
- the current time exceeds an Estimated Restore Time for an event, or
- an event that has a crew associated with it is repredicted to a new location by the Oracle Utilities Network System Trouble Management analysis engine.

Event Details

The Event Details window allows you to enter information about an event for reporting purposes. It displays various event information, including crew contact details, both the beginning and restoration times for the event, any partial restoration steps, and the operations event note.

Use Event Details to track information about the cause of an event and how the event is resolved. Some information is automatically entered into Event Details, and you can manually override some of this data. In addition, you can complete events from this window, giving you an opportunity to enter more detail about the event and validate the completion for proper event reporting.

This section includes the following topics:

- **Using the Event Details Window**
- **Finding an Event**
- **Equipment Failure Panel**
- **Recording Failed Equipment Information**

Using the Event Details Window

There are four ways to open Event Details for an event:

- Select a row in the Work Agenda, then click on the **Event Details...** button at the bottom of the window.
- Select a row in the Work Agenda, and then select Event Details... from the Actions menu.
- Select a dispatched crew in the Crew Actions window, click on the **Active Job Info...** button to bring up the Dispatch Information window, then click on the **Event Details...** button.

- Select a dispatched crew in the Crew List window, then click on the **Event Details...** button.

The Event Details window displays the following fields and buttons:

- The **Event #** is the number the system has assigned to the event.
- The **Device** is the name of the device associated with the event.
- The **Switching Plan #** is the switching plan number associated with the event, if any.
- **Zone(s)** displays the control zone(s) where the associated device is located.
- The **Next Crew Contact Required at** table displays when the operator next anticipates receiving contact from the associated crew(s). The **Crew ID** column of the table contains the crew name, and the **Date** column contains the date and time at which the next contact is expected. When the crew is initially dispatched, its contact time is set to two hours from the current time by default.
- The field beside the **Reset Selected Crew Contact Time** button is for entering the date and time that will go into the system if you click on the **Reset Selected Crew Contact Time** button.
- **Event Began** contains the date and time at which the event began. This field is editable.
- **Est # of Cust Out** contains the number of customers experiencing an outage for this event.
- **Event Restored** contains the date and time of event restoration (i.e., when the outage area was re-energized). This field is editable.
- The **Partial Restoration Log** table displays information related to restoration if the event is restored in stages. The Partial Restoration Log table does not display when the event is a non-outage. This table contains the following columns:
 - The **# Cust Out Before** column contains the total number of customers out at each stage.
 - The **Operation Time** column contains the date and time of the operation.
 - The **Device** column displays the device operated at each stage.
 - The **# Cust Restored** column contains the total number of customers that were restored at each stage.
 - The **# Cust Added** column contains the total number of customers that were added at each stage.
 - The **# Cust Out After** column contains total number of customers still without power after each stage.
 - The **Remarks** column contains any comments or remarks entered by the user.
 - The **Event #** column contains the event number associated with each partial restoration step.
- The **Copy Event Details to Partial Restoration Events** button is used to copy the values from many of the Event Details fields for the current event to all of the other events related to it via partial restoration. Any previously stored Event Details information for the related events will be overwritten (except for system-populated fields such as Event #, Device, Zone(s), Event Began, Est # of Cust Out, and Event Restored).
- The **Est Time to Restore (HH:MM)** field is used to enter the estimated time from the current time to complete the restoration in hours and minutes. The field also accepts entries in number of minutes greater than one hour, e.g. it is possible to enter "90" and the ERT is updated with a time 90 minutes from the current time. This field is used with the Update ERT button to update the fields. The Est Time to Restore (HH:MM) field is not displayed when the event is a non-outage.

- The **Est Restore Date** fields display the date and time of estimated restoration. These fields are editable. The Est Restore Date fields are not displayed when the event is a non-outage.
- The **Est Time to Repair (HH:MM)** field is used to enter the estimate time to repair in hours and minutes. This field is used when the crew on-site is only assessing the job and providing an estimate for the time it will take another crew to do the work. This field is editable, and Oracle Utilities Network System Storm Management uses the value, if installed.
- The **Operations Event Note** is a text field for you to enter notes about the event. These are notes that are made available to the call takers to pass on any specific details about the event to new callers associated with this event.

Event Details Drop-Down Lists

The following table describes the Event Details drop-down lists.

Drop-Down List	Allows you to designate...
System	what type of system the failure is on (e.g., overhead transmission, underground distribution, supply, etc.).
Sub-System	whether the sub-system is primary or secondary, radial or mesh, or a service drop.
Type	the type of device that is experiencing the problem.
Failure	the type of failure that is occurring.
Interrupting Device	the type of interrupting device involved with the event.
Weather	weather conditions at the time of the event.
Environment	environmental factors that have been involved with the event, such as humidity and salt spray.
Vegetation	the type of vegetation issues involved with the event, such as tree or vine, location (on or off ROW), and severity (contact or uprooted).
Foreign Interference	animals, vehicles, or any other type of foreign body that has contributed to the event.
Defective Equipment	the type of equipment defect involved with the event (e.g., age deterioration, customer equipment, etc.)
Scheduled	whether or not the event was planned and if it was planned for safety purposes.
Utility Error	the reason for the event if it was caused by the utility company.
Other	if the cause is something other than that listed in the drop-down menus or if the cause is unknown.
Remedy	the task performed to resolve the event.

Event Details Buttons

- The **Exclude from Interruption Indices** button allows you to designate if you want to exclude this event from the interruption indices calculations done by the Oracle Utilities Network Management System – Trouble Reporting product.
- The **Reason for Exclusion** field provides free-form text entry of the reason for the exclusion of this event from the interruption indices.

- The **Post-Completion Edit Log** table displays information related to event details being edited after the event is completed. The **Who** column contains the user id of who performed the edit. The **Date** column contains the date and time of the edit. The **Reason** column contains a description of why the edit was made. The **Changed Field** column contains the name of the field that was edited. The **Original Value** column contains the value that the field had prior to being edited.
- The **Save** button saves the data you have entered in the Event Details fields.
- The **Switching...** button opens a new emergency switch plan.
- The **Secondary Outages...** button opens the Service/Secondary Outages Manager for you to create confirmed service and secondary outages for any of the customers associated with the event, if the event is an outage.
- The **Equip Failure...** button opens the Equipment Failure window for you to enter information about failed equipment related to the event.
- The **Maintenance** button checks to see if the required fields have been entered, and if so, changes the event status to “MNP” (Maintenance Pending) if the event is presently in a status that’s eligible to transition to “MNP”. If the required fields (Remedy, Operations Event Note) have not been entered, an error message will open reminding you to do so, and the state transition will not be invoked.
- The **Complete Event** button checks to see if the required fields have been entered, and if so, the event is completed. If the required fields (Remedy and Failure) have not been entered, an error message will open reminding you to do so, and the completion will not occur.
- The **Exit** button closes the Event Details window. If you have not yet saved your revisions, a dialog box will open asking if you want to save them before exiting.

Finding an Event

The Event Details Find Event dialog may be used to load details for an event that may no longer be accessible from the Work Agenda or Crew tools but is still in the Oracle Utilities Network System database.

Find Event Dialog

To access the Find Event dialog, select Find Event from the Event Details File menu. The Event Details Find Event dialog displays the following fields and buttons:

- The **Event #** field is used to specify an event number as your search criteria. In this case, an exact match search is performed.
- The **Event start time from/to** fields are used to specify a date and time range as your search criteria. You may leave either the **from** or **to** field blank for this type of search, but not both. You may specify just a date, but in that case, the time is automatically assumed to be the current time. You may specify just a time, but in that case, the date is automatically assumed to be a) the current date, if the time is later than the current time or b) tomorrow’s date, if the time is earlier than the current time.
- The **Search** button is used to execute the search for the event based upon the entered search criteria.
- The table below the search criteria area is populated with any events found that match the search criteria.
- The **Event #** is the number the system has assigned to the event.
- The **Device** is the name of the device associated with the event.
- **Outage Time** contains the date and time at which the event began.
- **# Cust** contains the number of customers experiencing an outage for this event.

- The **Load** button populates the Event Details window with the information for the selected event in the table.
- The **Clear** button clears the search criteria fields and results.
- The **Close** button exits the Find Event Dialog.

Finding an Event by Event Number

To find an event by the event number, complete these steps:

1. In the Event Details window, select the **Find Event** option from the **File** menu. The Find Event dialog opens.
2. Enter the event number you wish to find into the **Event #** field.
3. Press the **Search** button. If the event is found, the table populates with the relevant information. If the event is not found, the table does not populate.
4. Select the event row from the table and press the **Load** button. The Event Details window populates with the information for the selected event.
5. Press the **Close** button on the Find Event dialog to exit from it.

Finding an Event by Event Start Time

To find an event by the event start time, complete these steps:

1. In the Event Details window, select the Find Event option from the File menu. The Find Event dialog opens.
2. Enter a desired date range into the **Event start time from/to** fields.
3. Press the **Search** button. If events are found that fall within the start time criteria, the table populates with the relevant information. If no events are found, the table does not populate.
4. Select the event row from the table and press the **Load** button. The Event Details window populates with the information for the selected event.
5. Press the **Close** button on the Find Event dialog to exit from it.

Equipment Failure Panel

Event Details lets you record detailed information about any failed equipment related to an event. You can record and track the type of equipment that failed, the manufacturer, serial number, and voltage details.

To record this information, use the Equipment Failure panel.

To access the Equipment Failure panel from the Event Details window, click the **Equip Failure...** button. The Equipment Failure Panel displays the following fields and buttons:

- **Item** is automatically populated with the Failure option selected in Event Details.
- The **Manufacturer** button opens the Manufacturers panel, providing a list of manufacturers to select from.
- **Serial #** is an editable (alphanumeric) field for you to enter the serial number for the equipment.
- **Primary Voltage** is an editable (alphanumeric) field for you to enter the primary voltage of the equipment.
- **Secondary Voltage** is an editable (alphanumeric) field for you to enter the secondary voltage of the equipment.
- **Rating** is an editable (alphanumeric) field for you to enter the rating of the equipment. The drop-down list beside the Rating field allows you to select the rating units.

- **Phase** allows you to designate whether the equipment is single-phase or three-phase.
- **Type** is an editable (alphanumeric) field for you to enter the type of equipment.
- **Size** is an editable (alphanumeric) field for you to enter the size of the equipment.
- Both the **OK** button and **Exit** button save the entered information and exit the Equipment Failure window.

Recording Failed Equipment Information

To record information about a failed device, complete these steps:

1. In the Event Details window, click the **Equip Failure...** button. The Equipment Failure panel opens.
2. Click the **Manufacturer** button, select the manufacturer, and click **OK**.
3. Enter the serial number, primary and secondary voltage, rating, type, and size of the equipment, as applicable.
4. Click on the drop-down list next to the Rating field and select the rating unit, as applicable.
5. Select the phase.
6. Click **OK**.

Service/Secondary Outage Manager

If you need to confirm a probable service outage or create new confirmed service/secondary outage events when a crew reports in from a site, you can use the Service/Secondary Outage Manager window. This window displays a table listing either all of the customers downstream of the predicted or confirmed outage device (when accessed via Event Details) or all of the customers connected to the selected device (when accessed via the Control Tool).

This section includes the following topics:

- **Using the Service/Secondary Outage Manager window**
- **Creating a Confirmed Service Outage**
- **Creating a Confirmed Secondary Outage**
- **Creating a Confirmed Service and Secondary Outage for the Same Customer**
- **Restoring a Customer with a Confirmed Service or Secondary Outage**

Using the Service/Secondary Outage Manager window

To access the Service/Secondary Outage Manager window, do one of the following:

- click the **Secondary Outages...** button on the Event Details window, or
- select a device in the Viewer that has customers connected to it, bring up the Control Tool, then click on the **Secondary Outages...** button.

The Service/Secondary Outage Manager window displays the following columns:

- The **Device** column contains the name of the device the customer is connected to.
- The **Address** column contains the customer's address.
- The **Call Date** column contains the date and time of the customer's call, if any.
- The **Service** column contains "YES" to indicate the customer is part of a confirmed service outage. Otherwise, it is blank.
- The **Secondary** column contains "YES" to indicate the customer is part of a confirmed secondary outage. Otherwise, it is blank.
- The **Grouping** column contains "YES" to indicate the customer has called in and their call has a groupable trouble code. Otherwise, it is blank.
- The **Prediction** column contains "SERVICE" to indicate the customer is involved in a probable service outage, "PRIMARY" to indicate the customer is involved in a probable device outage, or "CONFIRMED" to indicate the customer is involved in a confirmed service or confirmed secondary outage. Otherwise, it is blank.

Note: If a customer is affected by one or more service/secondary outages, there will be a separate row in Service/Secondary Outage Manager for each of these outages with Prediction of either SERVICE or CONFIRMED, as appropriate. In all other cases, exactly one row per customer will be displayed (customer being defined as having a unique device and account number).

If a customer is not affected by service or secondary outage, but is affected by a predicted device outage on the transformer, the Prediction will be PRIMARY. In all other cases, the Prediction will always be blank. However, the Call Date may still be populated if there is an outage call for the customer.

- The **Restored** column contains "YES" to indicate the customer has had their confirmed service or confirmed secondary outage restored. However, information must be entered in the Event Details window in order to complete it. Otherwise, it is blank.
- The **Name** column contains the name of the customer.

- The **Phone** column contains the phone number of the customer.
- The **Account Number** column contains the account number of the customer.
- The **Cust Type** column contains the customer type designation (e.g., 1, 2, 3).
- The **Event #** column displays the number the system has assigned to the customer's event.

Color Coding

The rows in the Service/Secondary Outage Manager window are color-coded to designate when a customer has a confirmed service outage, a confirmed secondary outage, or when the customer has been restored. When a customer is affected by multiple outages, multiple rows will be displayed representing the different outages.

Color	Description
Green	Confirmed Service Outage
Melon	Confirmed Secondary Outage
Blue	Restored

Service/Secondary Outage Manager Buttons

- The **OK** button applies any changes and closes the Service/Secondary Outage Manager window.
- The **Apply** button applies any changes without closing the Service/Secondary Outage Manager window.
- The **Service** button toggles the Service column value between blank and "YES". If you click on the **OK** or **Apply** button after toggling this value to "YES", then a confirmed service outage is created for the customer. If multiple customers have had their service column values toggled to "YES" when the **OK** or **Apply** button is pressed, then a confirmed service outage is created for each individual selected customer. If the selected row is for a predicted outage for which the customer has an incident, their incident will be removed from the event it is currently involved in (and that event will be repredicted) and become associated with the confirmed service outage. If the customer is selected to be involved in both a confirmed service and secondary outage, their incident will be associated with the confirmed service outage only.
- The **Secondary** button toggles the Secondary column value between blank and "YES". If you click on the **OK** or **Apply** button after toggling this value to "YES", then a confirmed secondary outage is created for the customer. If multiple customers have had their secondary column values toggled to "YES" when the **OK** or **Apply** button is pressed, then one secondary outage is created for all of those selected customers. If the selected row is for a predicted outage for which the customer has an incident, their incident will be removed from the event it is currently involved in (and that event will be repredicted) and become associated with the confirmed secondary outage.
- The **Grouping** button toggles the Grouping column value between "YES" and blank if the selected customer has called in. If you click on the **OK** or **Apply** button after toggling this value from "YES" to blank, and that incident is a non-groupable incident currently involved in a probable outage, then the incident will be changed from non-groupable to groupable and get repredicted. The purpose of this button is to turn calls that initially came into the system as non-groupable into groupable ones.
- The **Restore** button toggles the Restore column value between blank and "YES". If you click on the **OK** or **Apply** button after toggling this value to "YES", then all confirmed events the customer is involved in are restored (but not completed). Pop up warnings appear if you try to restore a customer that is not involved in an event at all, if you try to restore a customer

that is not part of a confirmed service or confirmed secondary outage, or if you try to restore a customer that is already restored. Only confirmed service and secondary outages created in this window can be restored from here.

- The **Event Details...** button opens the Event Details window for the row's event. If the customer is involved in more than one event, there are multiple rows in the Service/Secondary Outage Manager with each row representing a different outage.
- The **Exit** button exits the Service/Secondary Outage Manager window.

Service/Secondary Outage Manager Menus

The table below describes the Service/Secondary Outage Manager menus.

- File Menu options are:
 - **Print** – Opens the print dialog box to allow you to print the current list.
 - **Exit** – Closes the Service/Secondary Outage Manager window.
- Sort Menu - Allows you to sort the information in the list. For more information, see **Sorting** on page 1-3.
- Filter Menu - Allows you to filter the information in the list. For more information, see **Filtering** on page 1-5.
- Actions Menu - Allows you to perform the same function as the buttons at the bottom of the window. See the list of buttons and their descriptions in the previous section.

Creating a Confirmed Service Outage

To create a confirmed service outage for a customer, complete these steps:

1. Select the row in the Service/Secondary Outage Manager for the applicable customer.
2. Click the **Service** button. The **Service** column is now populated with "YES".
3. Click the **Apply** button. The Service/Secondary Outage Manager refreshes. The row for the selected customer is now colored green, and the **Prediction** column is now populated with "CONFIRMED". A new event row appears in the Work Agenda Trouble Event Lists. A CSVO symbol appears on the customer's device in the Viewer window.

Creating a Confirmed Secondary Outage

To create a confirmed secondary outage for a customer, complete these steps:

1. Select the row in the Service/Secondary Outage Manager for the applicable customer.
2. Click the **Secondary** button. The **Secondary** column is now populated with "YES".
3. Click the **Apply** button. The Service/Secondary Outage Manager refreshes. The row for the selected customer is now colored melon, and the **Prediction** column is now populated with "CONFIRMED". A new event row appears in the Work Agenda Trouble Event Lists. A CSVO symbol appears on the customer's device in the Viewer window.

Creating a Confirmed Service and Secondary Outage for the Same Customer

To create a confirmed service outage and secondary outage for a customer, complete these steps:

1. Select the row in the Service/Secondary Outage Manager for the applicable customer.
2. Click the **Service** button. The **Service** column is now populated with "YES".
3. Click the **Secondary** button. The **Secondary** column is now populated with "YES".
4. Click the **Apply** button. The Service/Secondary Outage Manager refreshes. There are now 2 rows for the customer with **Prediction** column populated with "CONFIRMED". One row is green and has the **Service** column populated with "YES" and the other row is melon and

has the **Secondary** column populated with “YES”. Both a CSVO and CSCO symbol appear on the customer’s device in the Viewer window.

Restoring a Customer with a Confirmed Service or Secondary Outage

To restore a confirmed service or secondary outage for a customer, complete these steps:

1. Select the row in the Service/Secondary Outage Manager for the applicable customer.
2. Click the **Restore** button. The **Restore** column is now populated with “YES”.
3. Click the **Apply** button. The Service/Secondary Outage Manager refreshes. The row for the selected customer is now colored blue. The CSVO/CSCO symbol disappears from the customer’s device in the Viewer window.

Event Recorder

Detailed information about an event is displayed in the Event Recorder. The Event Recorder works as a “flight recorder” for events, logging the progress of event completion step by step.

Event Recorder topics include:

- **Using the Event Recorder Window**
- **Adding a Comment to an Event**

Using the Event Recorder Window

To access the Event Recorder from the Work Agenda, select an event and choose **Event Recorder** from the Actions menu.

The Event Recorder window displays the following fields and buttons:

- The **Active Crews** table displays information about crews associated with the event. The **Crew ID** column contains the crew identifier. The **Contact** column contains the name of the crew contact person. The **Mobile #** column contains the mobile number for the crew contact. The **Pager #** contains the pager number for the crew contact. The **ASN/ENR Date** column contains the date and time the crew was assigned/dispatched to the event. The **Status** column contains the current status of the crew for this event.
- The **Release Crew** button releases the crew selected in the Active Crews table from the event.
- The **Event Action Steps** table displays information about each step of action that has taken place for the event. The **Crew ID** column contains the crew identifier of the crew that pertains to the step, if any. The **Date of Operation** contains the date and time the operation occurred, if a device is associated with the step. The **Date Reported** column contains the date and time the step was recorded in the system. The Date of Operation is non-editable. The **Description** column contains the description of the action that occurred for the step. The **User ID** column contains the id of the user who performed the action.

Buttons

- The **Refresh** button re-populates the Event Action Steps table with the most recently saved version of the steps.
- The **Save** button saves all newly added rows in the Event Action Steps table.
- The **Comment** button adds a new, editable comment row to the end of the Event Action Steps table.
- The **Delete** button deletes the selected step from the Event Action Steps table.
- The **Exit** button exits the Event Recorder window.

Adding a Comment to an Event

To add a comment to an event, complete these steps:

1. In the Event Recorder, click on the **Comment** button. A new row appears in the Event Action Steps table.
2. If there is a crew associated with your comment, click in the cell of the new row under the Crew column and type the crew name.
3. Click in the **Description** cell of the new row and type your comments.
4. Click the **Save** button. Your comment step is saved, and the system date and time you entered it is saved in the Date Reported column.

Create Event

Sometimes a crew out in the field may discover and report an issue that hasn't been identified by a customer. As an operator, you may wish to get these events recorded in Oracle Utilities Network System. One way to do so is to use the Create Event window.

To access the Create Event window, click the Summaries toolbox on the Environment Manager, then select the Create Event option. The Create Event window displays the following fields and buttons:

- The **Selected Device** field displays the name of the device on which to create the event.
- The **Event Date** field allows you to enter the start date for the event.
- The **Event Time** field allows you to enter the start time of the event.
- The **Outage/Non-Outage** buttons allow you to designate whether the event should be created as an outage or non-outage.
- The **OK** button creates the new event on the selected device and closes the Create Event window.
- The **Cancel** button closes the Create Event window without creating a new event.

Damage Assessment

When a crew out in the field is assessing damage that has occurred, you may wish to record the damage information in Oracle Utilities Network System. You can use the Damage Assessment window to record the type of damage and automatically estimate how long the repairs will take given that damage, as well as what materials are required to the repair.

This section contains the following topics:

- **Using the Damage Assessment Window**
- **Creating a Damage Report**

Using the Damage Assessment Window

To open the Damage Assessment window, select **Damage Assessment** from the Work Agenda Actions menu. This window contains the following components:

- **Damage Location Section**
- **Damage Specifics Section**
- **Damage Assessment Menu**
- **Damage Assessment Buttons**

Damage Location Section

The Damage Location section of the Damage Assessment window contains information regarding the location of the event, as well as which crew is reporting the damage and when. This section displays the following fields:

- The **Crew ID** contains the name of the crew reporting the damage. This field must be filled in prior to saving the report. If you try to save a report with the field blank, an error dialog appears.
- The **Mobile #** field allows you to enter the mobile phone number of the crew.
- The **Report Date** field contains the date that the damage was reported. This is initially auto-populated with the current date when you bring up the window. This field must be filled in prior to saving the report. This field is not editable.
- The **Report Time** field contains the time that the damage was reported. This is initially auto-populated with the current time when you bring up the window. This field must be filled in prior to saving the report. This field is not editable.
- The **Feeder** field displays the name of the feeder on which the event is located. This field is not editable.
- The **Device** field displays the name of the device on which the event is located. This field is not editable.
- The **Event #** field displays the system-assigned number for the event. This field is not editable.
- The **Location** field displays the location of the event. This is initially auto-populated with the address of the first customer call for the event.
- The **Company** field displays the name of the company in which the event is located. This field is not editable.
- The **Region** field displays the name of the region in which the event is located. This field is not editable.
- The **Branch** field displays the name of the branch in which the event is located. This field is not editable.
- The **Substation** field displays the name of the substation in which the event is located. This field is not editable.

Damage Specifics Section

The Damage Specifics section of the Damage Assessment window contains information regarding the specific damage that was found. This section displays the following fields and buttons:

- The **Affected Section** drop-down menu allows you to specify what type of network section is affected (Backbone, Lateral, Secondary, Service).
- The **Phase Affected** drop-down menu allows you to specify which phase(s) is affected.
- The **Location** drop-down menu allows you to specify in what type of location the damage is (Street, Rear Lot Line, Other).
- The **Load Affected** drop-down menu allows you to specify whether or not any load is affected (Yes, No).
- The **Tree Crew Required** toggle button allows you to indicate whether or not a tree crew is required to repair the damage.
- The **Type of Crew Needed** drop-down menu allows you to specify what type of crew is needed to repair the damage (Service, Trouble, Tree Crew, Line, Eval).
- The **Street Light Damage Noted** toggle button allows you to indicate whether or not any street light damage is noted.

- The **Comments** field allows you to specify additional comments regarding the damage specifics (up to 255 characters).
- The **Est Crew Repair Hours** field is auto-populated by the entries into the damage type table below it. If you have Oracle Utilities Network System Storm Management installed, when this damage report is saved, this value is what Oracle Utilities Network System Storm Management will begin to use as the Repair minutes value for this event.
- The damage type table allows you to specify the type of damage observed and whether or not it's accessible. The **Damage Type** column contains the description of the type of damage. The **Count** column is where you enter how many instances of each type of damage there are. The **Accessible** column is where you indicate whether or not the damage is accessible (valid values are Y and N). As you make your entries into this table, the **Est Crew Repair Hours** field above it is updated with the number of minutes estimated to perform the repairs for the event, based upon your entries.

Required Material Section

The Required Material section of the Damage Assessment window contains information regarding what materials are needed to repair the damage. This section displays the following fields:

- The **Part Id** field contains the identification number of the selected part. This field is initially auto-populated by your Part Name selection.
- The **Part Name...** button brings up a drop-down menu of part names. After you select a part name from the menu, the Part Id field is auto-populated with a default part number.
- The **Qty** field allows you to specify how many of each part are required.
- The **Save** button saves your selected part name, id and quantity to the parts table. If you try to save without a part name, id or quantity specified, an error dialog will appear:
- The **Delete** button removes the selected row from the parts table.
- The parts table records the name and quantity of parts required for the repair. The **Part Id** column contains the identification number of the part. The **Part Name** column contains the name of the type of part. The **Qty** column contains the required quantity of that part.
- The **Comments** field allows you to specify additional comments regarding the required material (up to 255 characters).

Damage Assessment Menu

- **File Menu**
 - **Save** – saves the damage report without closing the Damage Assessment window.
 - **Print** – opens the Print dialog box for printing out hard copies of the Damage Assessment window.
 - **Cancel** – closes the Damage Assessment window, but first asks the user if any unsaved changes should be saved.
 - **Exit** – closes the Damage Assessment window and auto-saves any unsaved changes.
- **Edit Menu**
 - **Clear** – resets all fields in the Damage Assessment window back to their default values.

Damage Assessment Buttons

- The **OK** button saves the damage report and closes the Damage Assessment window.
- The **Apply** button saves the damage report without closing the Damage Assessment window.
- The **Clear** button resets all fields in the Damage Assessment window back to their default values.

- The **Cancel** button closes the Damage Assessment window, but first asks the user if any unsaved changes should be saved.

Creating a Damage Report

To create a damage report for an event, complete these steps:

1. Select the desired event in the Work Agenda Trouble Event List window.
2. Select the **Damage Assessment...** option from the Actions menu. The Damage Assessment window appears populated with information regarding the event.
3. Enter the name of the crew performing the assessment in the **Crew ID** field.
4. Complete the relevant information in the Damage Specifics section.
5. Complete the relevant information in the Required Material section.
6. Press the **OK** button. The Damage Assessment window disappears and the damage report is saved. The **Est Crew Repair Hours** value is now accessible to Oracle Utilities Network System Storm Management, if installed.

AMR Requests

The Work Agenda AMR Requests and Completed AMR Requests lists are available from the Work Agenda File menu. These pages display information about each set of ping requests. This section includes the following topics:

- **Accessing the AMR Requests List**
- **Creating an AMR Request for a Service Outage**
- **Creating an AMR Request for a Device Outage**
- **Creating an AMR Request Without an Outage**
- **Completing AMR Requests**

Accessing the AMR Requests List

To access the AMR Requests List from the Trouble Events List:

1. Select the Work Agenda event row with an active ping request.
2. Press the **Show AMR Request** button. The Work Agenda navigates to the AMR Requests page and auto-filters on the selected event.

To access the AMR Requests List from the AMR Requests page:

1. Select a row with an active event.
2. Press the **Show Event** button. The Work Agenda navigates to the active Trouble Events List and highlights the select event row.

The AMR Requests List displays the following fields and buttons:

- The **Request #** column is the system-generated index of the request.
- The **Device** column is the start device.
- The **Feeder** column is the device's feeder.
- The **Substation** column is the device's substation.
- The **Request Date** column is the date the ping was requested.
- The **Event #** column is the outage event (or 0 if N/A)
- The **# Queried** column is the number of meters pinged.

- The **# Responded** is the total number of responses received to date.
- The **# Off** column is the number of deenergized responses received.
- The **Status** column displays ACT=active, CMP=completed, CNL=canceled.
- The **Who Requested** column displays the login user name that initiated the request.
- The **Show Event** button navigates back to the Active Trouble Events List page for the selected row's event.
- The **Complete** button completes the ping request (see **Completing AMR Requests** on page 2-28).
- The **Cancel** button cancels the ping request and takes no further action.
- The **Exit** button closes the tool.

Creating an AMR Request for a Service Outage

To create a ping request for a service outage:

1. Select the event row in the Work Agenda and press the **AMR Confirm** button. A dialog appears, asking whether you wish to perform a simple ON/OFF ping, or a full ping.
2. Select the desired action and press **Ok**. The row is updated with a Y in the **AMR Requested** column, and a new row is added to the AMR Requests page for the event.

Creating an AMR Request for a Device Outage

To create a ping request for a device outage:

1. Select the event row in the Work Agenda and press the **AMR Confirm** button. The Trouble Info AMR Customers page displays all AMR-enabled meters for the selected event.
2. Double-click on each row you wish to ping to set the row as To Be Pinged (TBP).
3. Press the **AMR Confirm** button. A dialog appears, asking you whether you wish to perform a simple ON/OFF ping, or a full ping.
4. Select the desired action and press **Ok**. The table refreshes to display the chosen rows as Has Been Pinged (HBP) by the login user at the current Request Date.

The Work Agenda row updates with a Y in the **AMR Requested** column, and a new row is added to the Work Agenda AMR Requests page for the event.

Creating an AMR Request Without an Outage

To create a ping request without an outage:

1. Press the **AMR Customer List...** button on the Control Tool. The Trouble Info AMR Customers page displays all AMR-enabled meters downstream from the selected device.
2. Double-click on each row you wish to ping to set the row as To Be Pinged (TBP).
3. Press the **AMR Confirm** button. A dialog appears, asking you whether you wish to perform a simple ON/OFF ping, or a full ping.
4. Select the desired action and press **Ok**. The table refreshes to display the chosen rows as Has Been Pinged (HBP) by the login user at the current Request Date.

A new row is added to the Work Agenda AMR Requests page with no event information.

Completing AMR Requests

From the Work Agenda AMR Requests page, select a ping row and press the **Complete** button. The options presented to you depend on the status of the original event:

Event Completed/Restored and Any Meters Off

- A dialog appears that lists meters still off
- You can highlight meters to submit as new AMR calls and press **Ok**, or **Cancel** to ignore them
- AMR ping request transitions to the CMP state

Event Completed/Restored and All Meters On

- AMR ping request transitions to the CMP state

Event Active and All Meters Off

- A dialog appears that lists meters that are off
- You can press **Ok** to navigate back to the Trouble Events List and confirm the event, or **Cancel**
- AMR ping request transitions to the CMP state

Event Active and All Meters On

- A dialog appears that lists meters that are on
- You can press **Ok** to cancel the associated event, or **Cancel**
- AMR ping request transitions to the CMP state

Event Active and Any Meters On

- A dialog appears that lists meters that are on and indicate that the prediction device is incorrect. User can navigate to the Viewer to repredict downstream, if desired.
- AMR ping request transitions to the CMP state

No Event and Any Meters Off

- A dialog appears that lists meters that are off
- You can highlight meters to submit as new AMR calls and press **Ok**, or **Cancel**
- AMR ping request transitions to the CMP state

No Event and All Meters On

- AMR ping request transitions to the CMP state

Outage Correction

After an outage is completed, you can revise the outage restoration sequence and times by re-recording the outage restoration sequence in study mode. This requires you to log in as an Outage Correction user type.

This Outage Correction environment only includes the tools needed to re-record a completed outage in study mode:

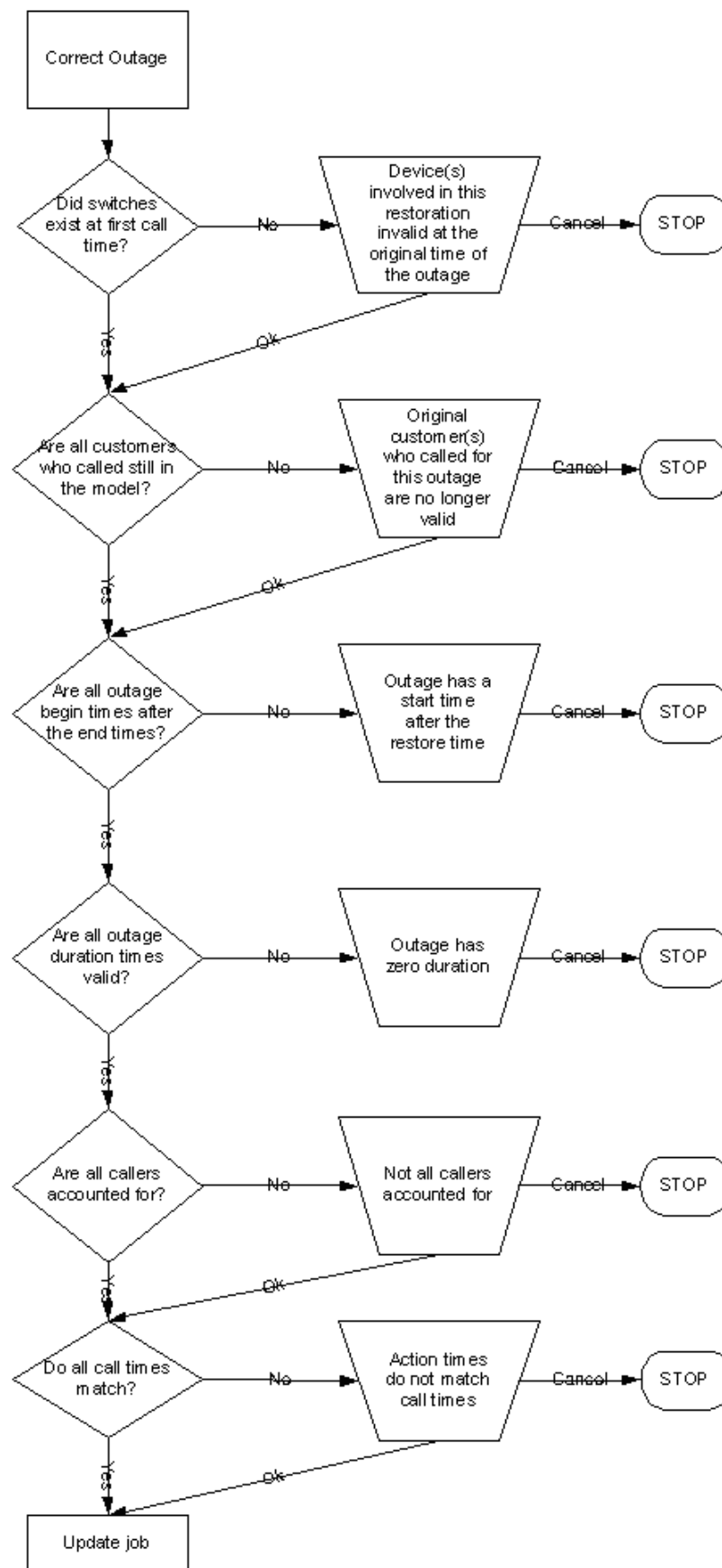
- The Work Agenda only contains the Completed List
- The Viewer cannot enter Real-Time mode
- The Switch Sheet Editor can only display the Outage Correction switch plan type, and cannot enter Real-Time mode.

Re-Recording the Outage Restoration Sequence in Study Mode

1. From the Event Details for a completed event, press the **Switching...** button to create an Outage Correction switch plan, if one does not already exist for the event.

Note: You can turn on recording in the Outage Correction plan and record the corrected outage and restoration steps in the Viewer, using the Control Tool's date/time selector to save the correct operation times.

2. Once you have recorded the entire set of outage and restoration steps, press the **Correct Outage** button. A confirmation dialog appears.
3. Press **OK** on the confirmation dialog to proceed. The system attempts to validate the proposed plan using the process depicted in the following diagram:



Upon success, the Work Agenda updates with the new outage time, customer count, and outage device. The Event Details, when re-loaded will reflect any partial restorations changes as well.

Note: Since outages may be corrected long after the outage has been completed, this algorithm computes outage details against the nominal network. Before beginning an outage correction, you should reset your study session to nominal and record any preparation steps needed to replicate the network as it was at the time of the outage.

Managing Crews with Trouble Management

This section describes how to manage crews in Trouble Management. It includes the following topics:

- **Trouble Management Windows for Managing Crews**
- **Crew Administration**
- **Crew Makeup**
- **Crew Actions**
- **Crew List**
- **Crew Information**
- **Active Job Information**
- **Other Crew Functions**
- **AVL Crews**

Trouble Management Windows for Managing Crews

Oracle Utilities Network Management System – Trouble Management has a number of windows that allow you to manage crews efficiently. Each window has a special function. This section describes the various windows and functions that relate to managing crews. The table below highlights the functionality of the windows involved with crew management.

Window	Description
Crew Administration	Allows you to activate, deactivate, delete, and temporarily transfer crews to different control zones.
Crew Makeup	Allows you to edit and create new crews.
Crew Actions	Provides a visual representation of crew status and classification; allows you to assign and place en route crews to events; provides access to the Crew Makeup, Crew Information and Active Job Information windows.
Crew List	Displays a list of crews and allows you to open the Crew Information and Event Details windows.
Crew Information	Displays detailed crew information not shown in the Crew List and allows you to unassign a crew from an event and open the Active Job Information window.

Window	Description
Active Job Information	Provides basic crew information, event location, and a list of calls associated with the crew's en route/onsite event. Also allows you to place crews en route, place crews onsite, suspend crews, move crews and release crews. Enables you to open the Event Details window and update the estimated restoration time for the crew's en route/onsite event.

Crew Administration

The Crew Administration window allows you to activate, deactivate, and delete crews, as well as temporarily assign crews to a different control zone. To open the Crew Administration window, click on the **Crew Admin** button on the Environment Manager.

Crew Administration topics include:

- **Using the Crew Administration Window**
- **Activating a Crew**
- **Making a Crew Inactive**
- **Transferring a Crew to Another Control Zone**
- **Deleting a Crew**

Using the Crew Administration Window

Menus

The Crew Administration menus are:

- **File Menu**
 - **New** – Opens the Crew Makeup dialog box for you to create a new crew.
 - **Edit** – Opens the Crew Makeup dialog box for the crew you have selected. From here you can make edits to the crew.
 - **Delete** – Permanently deletes the selected crew.
 - **Print** – Opens the Print dialog box.
 - **Exit** – Closes the Crew Administration window.
- **Filter Menu**
 - Allows you to filter the list of crews by type or to show only the crews in your subscribed control zone. Selecting All in this menu will turn off any filters and show all crews in the system.
- **Actions Menu**
 - **Activate** – Activates the selected crew
 - **Deactivate** – Deactivates the selected crew
 - **Transfer Zone...** – Temporarily transfer the crew to a different control zone
 - **Release Temp Zone** – Return the crew from its temporary control zone assignment back to its original control zone
 - **Toggle Mobile Off** – Allows the user to override the mobile flag setting of “Yes” for a mobile crew in order to activate it from the Oracle Utilities Network Management System

- **Toggle Mobile On** – Allows the user to turnoff the override of the mobile flag and set it back to “Yes”

Crew Administration Lists

The Crew Administration lists display the following lists:

- The **Control Zone** list displays all the control zones in the system. To view the crews assigned to a specific control zone, click on the name of that zone in this list.
- The **Inactive** list displays all the inactive crews assigned to the selected control zone. To view information about an inactive crew, select the crew name in this list. The information appears in the fields at the bottom of the window.
- The **Active** list displays all the active crews assigned to the selected control zone. To view information about an active crew, select the crew name in this list. The information appears in the fields at the bottom of the window.

Note: The **My Crews** button must be toggled off in order to work with the Control Zone list.

Crew Administration Buttons

The Crew Administration window displays the following buttons.

- The **Transfer Zone...** button opens the Control Zones dialog box, which allows you to temporarily transfer the crew to a zone you have authority over.
- The **Release Temp Zone** button returns the crew from its temporary control zone assignment back to its original control zone. If a crew is temporarily assigned to another zone, that zone name will appear in the Temporary Zone field on the lower left-hand corner of the Crew Administration window.
- The **My Crews** button filters the list of crews to only show the crews assigned to the control zones you have authority over.
- The forward arrow button activates the selected inactive crew and moves the crew name to the Active list.
- The backward arrow button inactivates the selected active crew and moves the crew name to the Inactive list.

Activating a Crew

To activate a crew, complete these steps:

1. In the Crew Administration window, select the crew you want to activate in the Inactive list. The information for that crew displays in the fields at the bottom of the window.
2. Click on the forward arrow button to move the crew to the Active list. The crew becomes active and the name of the crew moves from the Inactive list to the Active list.

Notes: You cannot activate crews that are assigned to a control zone that you do not have authority over. In that case, you must first transfer the crew to a control zone that you have authority over.

You cannot activate crews that are mobile crews (Mobile Flag = “Yes”) without first overriding the mobile flag setting. This is done by selecting the mobile crew in the Inactive list and then selecting the Toggle Mobile Off option from the Actions menu.

Making a Crew Inactive

To deactivate a crew, complete these steps:

1. In the Crew Administration window, select the crew you want to deactivate in the Active list. The information for that crew displays in the fields at the bottom of the window.
2. Click on the backward arrow button to move the crew to the Inactive list. The crew becomes inactive and the name of the crew moves from the Active list to the Inactive list.

Notes:

- You cannot make an assigned or en route/onsite crew inactive.
- You cannot deactivate crews that are assigned to a control zone that you do not have authority over.
- You cannot deactivate mobile crews (Mobile Flag = “Yes”) from within Oracle Utilities Network Management System. Only mobile crews that have had their mobile flag overridden (Mobile Flag = “No (Overridden)”) may be deactivated from within Oracle Utilities Network Management System.

Transferring a Crew to Another Control Zone

To temporarily transfer a crew to another control zone, complete these steps:

1. Select the name of the crew you want to move in the Active or Inactive list. Make sure the **My Crews** radio button is toggled off if you want crews in other control zones to be visible to you.
2. Open the Control Zones dialog box by either clicking the **Transfer Zone...** button or by selecting Transfer Zone... from the Actions menu. The Control Zones dialog box will appear and contain the control zones that you presently have authority over.
3. In the Control Zones dialog box, select the name of the control zone you want to move the crew to in the Items list.
4. Click the **OK** button. The crew’s Temporary Zone field populates with the new zone name. The Control Zone field remains unchanged.
5. To return the crew to its original control zone assignment, either click the **Release Temp Zone** button or select the Release Temp Zone option from the Actions menu. The Temporary Zone field becomes blank.

Notes: Transferring a crew to another control zone is only a temporary change. Once a crew is deactivated, it will revert back to its original control zone assignment. If you wish to permanently change a crew’s assigned control zone, use the Edit button to bring up the Crew Makeup window and make the change there.

You can only transfer crews to control zones that you have authority over.

Deleting a Crew

To delete a crew, complete these steps:

1. If the crew is active, you must first deactivate it using the **Making a Crew Inactive** on page 2-34 procedures listed above.
2. With the crew highlighted in the Inactive list, select **Delete** from the File menu. A dialog box appears asking you to confirm the delete.
3. Click **OK**. The crew is deleted from the system.

Note: You cannot delete mobile crews (Mobile Flag = “Yes” or “No (Overridden)”) from within Oracle Utilities Network Management System.

Crew Makeup

The Crew Makeup window allows you to edit and create new crews.

Crew Makeup topics include:

- **Using the Crew Makeup Window**
- **Creating a New Crew**
- **Filtering Crew Personnel**
- **Removing Personnel from a Crew**
- **Removing a Vehicle from a Crew**
- **Editing a Crew**

Using the Crew Makeup Window

To open the Crew Makeup window, select **New...** or **Edit...** from the File menu in the Crew Admin window or click either the **New...** or **Edit...** button in the Crew Actions window. The Crew Makeup window displays the following fields and buttons:

- The **Type** drop-down list allows you to select the type of crew (e.g., Line, Eval, Trouble).
- The **Temp/Perm** drop-down list allows you to specify whether a crew is temporary or permanent. When a crew is set to temporary, a dialog box appears whenever it is deactivated asking if the crew should be removed.
- The **Edit...** button opens the Control Zones dialog box, allowing you to select the Control Zone the crew will be assigned to.
- The **Add... (Personnel)** button opens the Personnel dialog box, allowing you to enter a crew member's name and select their job type.
- The **Select Personnel...** button opens the Select Personnel dialog box, allowing you to select from a pre-defined list of personnel.
- The **Remove (Personnel)** button removes the selected individual from the personnel list.
- The **Add... (Vehicles/Equipment)** button opens the Vehicles/Equipment dialog box, allowing you to assign vehicles to the crew.
- The **Select Vehicles/Equipment...** button opens the Select Vehicles/Equipment dialog, allowing you to select from a pre-defined list of vehicles/equipment.
- The **Remove (Vehicles/Equipment)** button removes the selected vehicle from the Vehicles/Equipment list.
- The **OK** button saves the crew changes and closes Crew Makeup.
- The **Apply** button saves the crew changes and leaves Crew Makeup open.
- The **Cancel** button closes Crew Makeup without saving any changes.

Creating a New Crew

To create a new crew, complete these steps:

1. Open the Crew Makeup window either by selecting **New...** from the File menu in Crew Administration or by clicking on the **New...** button in Crew Actions.
2. Enter the Crew ID, mobile and pager numbers, and contact.
3. Select the crew type and temporary or permanent from the drop-down lists.
4. Click the **Edit...** button to open the Control Zone dialog box. Select a control zone and click **OK**.

5. Click the **Add...** (Personnel) button to open the Personnel dialog box. Enter a crew member's name and select their job title, then click **Apply**.

Or,

Click the **Select Personnel...** button to open the Select Personnel dialog box. Select one or more rows from the Select Personnel dialog (using the <Ctrl> and/or <Shift> keys), then click **OK**.

6. Repeat the previous step until all crew members are added, then click **OK** to close the Personnel dialog box.

Note: The Crew Size field increases with each person you add to the crew. If you want to add crew members without listing their names, you can change the number in this field. The system will not let you enter a number smaller than the number of individuals listed.

7. Click on the **Add...** (Vehicles/Equipment) button to open the Vehicles/Equipment dialog box. Select the vehicle type, and then click **Apply**.

Or,

Click the **Select Vehicles/Equipment...** button to open the Select Vehicles/Equipment dialog box. Select one or more rows from the Select Vehicles/Equipment dialog (using the <Ctrl> and/or <Shift> keys), then click **OK**.

8. Repeat the previous step until all vehicles are added, then click **OK** to close out of the dialog box.
9. Click **Ok** to save the crew.

Filtering Crew Personnel

Press the Filter button in the Select Personnel dialog to display the Crew Personnel Filter dialog. In the Crew Personnel Filter, filter a filter can be applied to the Personnel table by choosing one of the columns (**District**, **Employee ID**, **Employee Name**, or **Job Title**), typing in the filter text, and clicking OK. The Select Personnel dialog will only display the personnel which fully or partially matches the filter text.

Removing Personnel from a Crew

To remove an individual from a crew you have open in Crew Makeup, select his or her name in the Personnel list and click **Remove**. The name disappears from the Personnel list and the number in the Crew Size field decreases by one.

Removing a Vehicle from a Crew

To remove a vehicle from a crew you have open in Crew Makeup, select the vehicle from the Vehicles/Equipment list and click **Remove**. The vehicle disappears from the Vehicle/Equipment list.

Editing a Crew

To edit a crew, complete these steps:

1. Open the Crew Makeup window either by selecting Edit... from the File menu in Crew Administration or by clicking the **Edit...** button in the Crew Actions window.
2. Make the changes to the crew.
3. Click **Ok** to save the changes.

Note: You may not edit mobile crews (Mobile Flag = "Yes" or "No (Overridden)") from within Oracle Utilities Network Management System.

Crew Actions

The Crew Actions window contains buttons representing each crew. The buttons display the Crew ID and are color coded to show status. The Crew Actions window allows you to assign and place en route crews to an event and access the Crew Makeup, Crew Information, and Active Job Information windows.

The Crew Actions window opens by default when you login to Oracle Utilities Network Management System. If it has been closed, you can open it again by clicking on the **Crew Actions** button on the Environment Manager.

Crew Actions topics include:

- **Color Coding**
- **Crew Actions Buttons**
- **Assigning a Crew**
- **Placing a Crew En Route Using Crew Actions**
- **Changing Crew Availability**
- **Finding the Event a Crew is En Route To**
- **Filtering the Crew Actions Window**

Color Coding

The table below describes the color coding used on the Crew Actions and Crew List windows.

Color	Description
Green	En Route
Dark Green	Onsite
Yellow	Unavailable
Cyan	Assigned
Orange	Suspended
White	Available

Crew Actions Buttons

The Crew Actions window displays the following buttons:

- The **Show All Crews** drop-down menu allows you to filter the crews that are displayed. When you click on an event row in the Work Agenda window and then select one of the items in this drop-down list (region, branch, substation, etc.), Crew Actions will filter out any crews that are not assigned to the same region/branch/ substation/etc. as the selected event. If a crew is assigned to a control zone level higher than the selected filter level (e.g. the crew is assigned to a Region and the filter applied is Substation), the crew will not be filtered out when the selected event also resides in that crew's assigned control zone.
- The **New...** button opens the Crew Makeup window for you to create a new crew.
- The **Edit...** button opens the Crew Makeup window for you to edit the selected crew.
- The **Locate Crew** button will focus the Viewer on the selected crew, if the crew is an AVL crew.
- The **View** button will focus on the device associated with the en route/onsite event and the Work Agenda window will highlight the associated event row, if the crew is en route/onsite.

- The **Availability...** button opens the Crew Availability dialog box where you can change the availability of a crew.
- The **Assign** button assigns the selected crew to the event selected in the Trouble Events list of the Work Agenda.
- The **En Route** button places the selected crew en route to the event selected in the Trouble Events list of the Work Agenda window.
- The **Onsite** button places the selected crew onsite to the event it is currently en route to.
- The **Active Job Info...** button opens the Active Job Information window.
- The **Crew Info...** button opens the Crew Information window.
- The **Filter** button opens the Crew Actions Filter dialog box where you can select the filter criteria by which the crew icons are displayed. You can filter by crew type, control zone, and whether or not to include inactive crews.
- The **Switching...** button opens the Switch Sheet Editor window and loads the switching plan associated with the event the crew is en route to/onsite at, if the crew is en route to/onsite at a planned event.
- The **Exit** button closes the Crew Actions window.

Assigning a Crew

You do not have to assign a crew to an event before placing it en route. Assigning merely lines up the event for the crew to work later. To assign a crew to an event, complete these steps:

1. Locate the event you want to assign the crew to in the Trouble Events list of the Work Agenda. Select the row of that event.
2. Select the crew you want to assign the event to in the Crew Actions window.
3. Click the **Assign** button. The button for the crew turns cyan (unless it is currently unavailable, i.e., yellow), and the event information is automatically entered into the Crew Information window for the crew.

Note: You can assign multiple events to a single crew. You can also assign multiple crews to a single event.

Placing a Crew En Route Using Crew Actions

To place a crew en route to an event, complete these steps:

1. Locate the event you want to place the crew en route to in the Trouble Events list of the Work Agenda. Select the row of that event.
2. Select the crew you want to place en route in the Crew Actions window. The crew cannot already be en route to another event.
3. Click the **En Route** button. If the selected crew is unavailable, you will be prompted to first make the crew available. The icon for the crew turns green, and the event information is automatically entered into the Crew Information window for the crew.

Note: You can place multiple crews en route to a single event.

Changing Crew Availability

Making a crew available/unavailable is different from making it active/inactive. When a crew is inactive (e.g., finished working for the day), the crew does not appear in the Crew Actions window (unless you have the Inactive Crews filter toggled off). When a crew is unavailable, (e.g., at lunch), it appears in the Crew Actions window (in yellow). You can assign an unavailable crew, but you cannot place it en route. See **Activating a Crew** on page 2-33 and **Making a Crew Inactive** on page 2-34 for more information on active/inactive crews.

To change a crew's availability, complete these steps:

1. Select the crew you want to change in the Crew Actions window. You cannot change an en route/onsite crew.
2. Click on the **Availability...** button. The Update Crew Availability dialog box opens.
3. Click on the Available Yes/No drop-down list and select "Yes" to make the crew available or "No" to make it unavailable.
4. If you are making an available crew unavailable, click in the Description field and type a brief reason for the change (e.g., on break).
5. Click **OK**. The crew icon changes to yellow. If you now try to place the crew en route to an event, a dialog box will appear asking if you want to make the crew available.

Note: You can assign events to both available and unavailable crews.

Finding the Event a Crew is En Route To

To find the event a crew is en route to, select the crew in the Crew Actions window and click the **View** button. The Trouble Events list opens in the Work Agenda with the event row highlighted, and the Viewer focuses on the device associated with the en route event.

Note: The Work Agenda event row will only appear if the event is on the list you currently have displayed in the Work Agenda window. The Viewer will only focus on the device if you have a Viewer window open.

Filtering the Crew Actions Window

To filter the crews that appear in the Crew Actions window, complete these steps:

1. Click the **Filter...** button in the Crew Actions window. The Crew Actions Filter dialog box appears.
2. If you want to exclude certain crew types, click on the types you do not want to view.
3. If you want inactive crews to appear, click on the Inactive Crews option.
4. If you want to view only the crews assigned to a particular control zone, click on the name of the control zone in the Crew Zone list.
5. Do one of the following:
 - Click **Apply** to view the changes in the Crew Actions window without closing the Crew Actions Filter dialog box, or
 - Click **OK** to close the dialog box and apply the filters you've selected.

Note: You can also filter the crews by Company/Region/Branch/Substation/Feeder of the event selected in the Work Agenda window. To use this feature, select an event (in the Work Agenda window), click on the **Show All Crews** drop-down list (in the Crew Actions window), and select the option (Company, Region, etc.) you want. This filter works in addition to any filters you have set using the Crew Actions Filter dialog box.

Crew List

The Crew List window shows all crews while color-coding the rows to indicate status. Like the Crew Actions window, the Crew List window lets you display a filtered view of crews and open the Crew Information window for more detailed information.

Unlike Crew Actions, the Crew List window also lets you open the Event Details window so you can enter reporting information and close the event.

Crew List topics include:

- **Using the Crew List Window**
- **Filtering the Crew List**
- **Using Crew Search**

Using the Crew List Window

To open the Crew List window, click the **Crew** button. The Crew List displays the following fields and buttons:

- The **Control Zone** column contains the name of the control zone the crew is assigned to.
- The **Crew ID** column contains a string that identifies the crew. The user in the Crew Makeup window assigns this string.
- The **Crew Type** column contains the type of crew (e.g., Eval, Service, Line, etc.).
- The **Contact** column contains the contact name for the crew.
- The **Crew Size** column contains the number of crew members.
- The **Feeder** column contains the feeder for the device where the crew is en route/onsite.
- The **Device** column contains the name of the device the crew is en route to/onsite at.
- The **Est Restore Time** column contains the date and time when the event the crew is en route to is estimated to be restored.
- The **# Asgn** column contains the number of events assigned to the crew.
- The **Crew Hrs Wkd** column contains the length of time the crew has been active.
- The **Active** column indicates whether or not the crew is active (Y = yes, N = no).
- The **Mobile Flag** column indicates whether or not the crew is a mobile system.
- The **Crew Info...** button opens the Crew Information window. (See **Crew Information** on page 2-42.)
- The **Event Details...** button opens the Event Details window for the event the crew is en route to/ onsite at. (See **Event Details** on page 2-13.)
- The **Crew Search...** button opens the Crew Search dialog (See **Using Crew Search** on page 2-41).
- The **Switching...** button opens the Switch Sheet Editor window and loads the switching plan associated with the event the crew is en route to/onsite at, if the crew is en route to/ onsite at a planned event.
- The **Exit** button closes the Crew List window.

Crew List Color Codes

The table below describes the Crew List color codes.

Color	Description
Green	En Route
Dark Green	Onsite
Yellow	Unavailable
Cyan	Assigned

Color	Description
Orange	Suspended
White	Available

If a crew is unavailable (e.g., on break), it will appear in the Crew List as either “Unavailable” or the entered reason will appear in the Feeder/Device columns.

Filtering the Crew List

To filter the list of crews displaying in the Crew List window, complete these steps:

1. Click on the Filter menu.
2. Choose one of the following:
 - To filter the list to only display a specific crew type or status, select the type. The menu closes and the list is filtered.
 - To create a more detailed filter using any of the columns in the Crew List, select **Dialog**. The Filter Dialog box opens and you can create and apply a filter as described in **Filtering** on page 1-5.

To turn a filter off, select **All** from the Filter menu.

Using Crew Search

To search for a crew member or a type of crew vehicle, use the Crew Search dialog. To bring up the Crew Search dialog, click the **Crew Search...** button on the Crew List window.

Searching for a Crew Member

To search for a particular crew member, complete these steps:

1. Click the **Crew Search...** button on the Crew List window. The Crew Search dialog appears.
2. Enter the member’s name (or portion of the name) into the **Enter member name** field.

Note: The search is case-sensitive.

3. Click the **OK** button. The search is performed.
 - If no matches are found, an error dialog appears.
 - If multiple matches are found, a dialog appears, which allows you to select the desired crew member. Select the desired crew and press the **OK** button.
 - If there is only one match found, or after you’ve selected the desired member from the Select Crew dialog, the Crew Information window opens with information regarding the crew that the member belongs to, and the crew’s row is selected in the Crew List window.

Searching for a Vehicle

To search for a particular type of crew vehicle, complete these steps:

1. Click the **Crew Search...** button on the Crew List window. The Crew Search dialog appears.
2. Change the Search for option to “vehicle”. Below the Search for option now appears a drop-down menu of vehicle types to choose from.
3. Select the desired vehicle type.
4. Click the **OK** button. The search is performed.
 - If no matches are found, an error dialog appears.
 - If one or more match is found, the Select Crew dialog appears.

- Select the desired crew and press the **OK** button. The Crew Information window opens with information regarding the crew that the member belongs to, and the crew's row is selected in the Crew List window.

Crew Information

The Crew Information window displays detailed crew information not shown in Crew Actions or the Crew List. It allows you to unassign a crew or access the Active Job Information window to place a crew en route to any of its assigned events.

This section includes the following topics:

- **Using the Crew Information Window**
- **Unassigning a Crew**
- **Placing a Crew En Route to an Assigned Event**

Using the Crew Information Window

To open the Crew Information window, do any of the following:

- From the Crew List window, select the row of the crew you want to view and click on the **Crew Info...** button.
- From the Crew List window, select the row of the crew you want to view and select Crew Info... from the Actions menu.
- From the Crew Actions window, select the icon of the crew you want to view and click on the **Crew Info...** button.

The top section of the Crew Information windows displays information about the selected crew. The middle section displays information about the event the crew is *en route* to, if any. The bottom section displays information about the events *assigned* to the crew, if any.

The Crew Information window displays the following fields and buttons:

- The **Crew ID** field displays the string that identifies the crew. This string is assigned by the user in the Crew Makeup window.
- The **Mobile #** field displays the crew's mobile phone number.
- The **Pager #** field displays the crew's pager number.
- The **Contact** field displays the name of the crew's contact person.
- The **Type** field displays the type of crew (e.g., Eval, Service, Line, etc.).
- The **Temp/Perm** field displays whether the crew is a temporary crew or a permanent crew.
- The **Control Zone** field displays the control zone the crew is assigned to.
- The **Personnel** field displays the names of all the crew members and their job titles.
- The **Vehicles/Equipment** field displays the vehicles assigned to the crew.
- The **Event #** field displays the event number of the event the crew is en route to/onsite at.
- The **Feeder** number displays the name of the feeder for the device where the crew is en route to/onsite at.
- The **Est Restore Time** field displays the date and time when the event the crew is en route to/onsite at is estimated to be restored.
- The **Device** field displays the name of the device related to the event.
- The **Event #** column contains the event number of the event the crew is assigned to.
- The **Assign Date** column contains the date the crew was assigned to the event.

- The **Assign Time** column contains the time the crew was assigned to the event.
- The **Feeder** column contains the name of the feeder involved in the event.
- The **Device** column contains the name of the device related to the event.
- The **# Calls** column contains the number of customer calls received for the event.
- The **# Out** column contains the number of customers experiencing an outage for the event.
- The **Suspended** column indicates whether the assignment is an event that the crew was previously en route to but suspended from (Y = yes, N = no).

Buttons

- The **Drop Assignment** button removes the event from the list of crew assignments.
- The **Place En Route** button opens the Active Job Information window for you to place the crew en route to an event on the assigned list. You must select an event on the assigned list before you click this button.
- The **Cancel** button closes the Crew Information window.

Unassigning a Crew

To drop an assignment from a crew, complete these steps:

1. In the Crew Information window, select the assigned event. The buttons at the bottom of the window become enabled.
2. Click the **Drop Assignment** button. A message box opens asking if you are sure you want to remove the assignment.
3. Click **Yes**. The following occurs:
 - The crew is unassigned from the event.
 - The event is removed from the list of crew assignments.
 - The crew button/crew row changes to white (if the crew is not en route or assigned to another event).

Placing a Crew En Route to an Assigned Event

If a crew has been assigned to an event, you can place the crew en route to the event using the Crew Info window.

To place the crew en route to the assigned event, complete these steps:

1. In the Crew Actions window, select the assigned crew.
2. Click the **Crew Info...** button. The Crew Information window opens.
3. Select the row for the event in the assignments table.
4. Click the **Place En Route** button. The Active Job Information window opens and the crew is placed en route to the event.

Active Job Information

The Active Job Information window provides basic crew information, event location, and a list of calls associated with the selected crew. This section includes the following topics:

- **Using the Active Job Information Window**
- **Updating Event Information**
- **Placing a Crew En Route using the Active Job Information Window**
- **Moving a Crew**
- **Suspending a Crew**
- **Returning a Suspended Crew to a Non-Suspended Status**
- **Releasing a Crew from an En Route/Onsite Event**

Using the Active Job Information Window

To open the Active Job Information window, do one of the following:

- From **Crew Actions**, select the en route/onsite crew you want to view active job information about and then click the **Active Job Info...** button. The Active Job Information window opens.
- From **Crew Information**, select the row of the assigned event you want to place the crew en route to. Then click on the **Place En Route** button. The Active Job Information window opens.

The Active Job Information window displays the following fields and buttons:

- The **Crew ID** field displays the string that identifies the crew. This string is assigned by the user in the Crew Makeup window.
- The **Contact** field displays the name of the crew's contact person.
- The **Event #** field displays the event number of the event the crew is en route to/onsite at.
- The **Feeder** number displays the name of the feeder for the device where the crew is en route to/onsite at.
- The **Device** field displays the name of the device related to the event.
- The table in the middle of the window displays information regarding each call received for the en route/onsite event. The **Address** column contains the address of the caller. The **Call Date** column contains the date on which the call was received. The **Call Time** column contains the time at which the call was received. The **CMT** column indicates whether or not customer comments were entered on the call (Y = yes, N = no).
- The **View All Calls** drop-down menu toggles a filter on or off to show only calls with customer comments.
- The **Call Info...** button opens the Call Information window, used to view customer call information for a selected row.
- The **Not Onsite** drop-down menu is a toggle for you to designate whether the crew has arrived onsite yet or not. The field to the right of the menu is editable and populates with the current time when you toggle the crew to **Onsite**.
- The **Not Suspended** drop-down menu is a toggle for you to designate whether the crew has been suspended from the event. The field to the right of the menu is editable and populates with the current time when you toggle the crew to **Suspended**.
- The **Est Time to Restore (HH:MM)** field allows you to enter the estimated amount of time for the event to be restored. This field does not allow negative numbers to be entered.

- The **Update ERT** button, when clicked, will take the value you typed in the Est Time to Restore (HH:MM) field and update the **Estimated Restore Date** and **Estimated Restore Time** fields based on the current system date and time.
- The **Operations Event Note** field allows you to enter notes about the event.

Buttons

- The **OK** button saves the changes you have made and closes the Active Job Information window.
- The **Event Details...** button opens the Event Details window for the en route/onsite event.
- The **Move Crew...** button opens the Move Crew dialog box where you enter the location you want to move the crew to, either manually or by selecting a device in the Viewer.
- The **Release Crew** button releases the crew from the event.
- The **Cancel** button closes the Active Job Information window without saving any changes.

Updating Event Information

To update event information, complete these steps:

1. Open the Active Job Information window by selecting a crew in Crew Actions and clicking **Active Job Info...**
2. To update the Estimated Restore Date or time, enter the Estimated Time to Restore and click the **Update ERT** button. The Est Restore Date and time will change accordingly.
3. To add event notes, enter them in the Operations Event Notes field.
4. Click **OK**. The Active Job Information window closes and your changes are saved.

Placing a Crew En Route using the Active Job Information Window

To place a crew en route to an assigned event, complete these steps:

1. In the Crew Information window, select the row of the assigned event you want to place the crew en route to.
2. Click the **Place En Route** button. The Active Job Information window appears with the Crew and Event information fields populated. The button/row for the crew turns green and the event information is automatically entered into the Crew Information window for the crew.

If you try to place en route a crew that has already been placed en route to an event, an error dialog box will appear.

Moving a Crew

Moving a crew does not change the event the crew is en route to, rather, it moves the crew to another device location and keeps it associated with the same event. By default, Oracle Utilities Network Management System Trouble Management locates a crew at the predicted or confirmed clearing device so that graphically the crew appears to be at the same location as the outage symbol in the Viewer. In some cases, the crew may actually have to work at a location different from the clearing device. It is not required or necessary to move the crew, but moving the crew to the actual device location is helpful in keeping more accurate track of what is going on in the field.

To move a crew, complete these steps:

1. Open the Active Job Information window for the crew you want to move.
2. Click the **Move Crew...** button. The Move Crew dialog box opens.
3. Either type in the name of the device that is the new crew location or select the new device location in the Viewer window.

4. Click **OK**. The crew symbol moves on the Viewer map, and the crew's Device updates on the Crew List. The crew remains en route to/onsite at that same event.

Suspending a Crew

Occasionally, you may need to remove a crew from an event and send them to another, higher-priority event. When the crew finishes work on the higher-priority event, they will return to the current event to finish it. To reroute a crew to another event without losing its assignment to the current event, the system lets you suspend a crew.

To suspend a crew, complete these steps:

1. Open the Active Job Information window from the Crew Actions window by clicking on the crew you want to reroute and then clicking the **Active Job Info...** button.
2. Click on the **Not Suspended** toggle button and select **Suspended**.
3. Click **OK**. The crew's button/row changes to orange to indicate the crew is suspended. You can now place the crew en route to the new event.

Returning a Suspended Crew to a Non-Suspended Status

Once a suspended crew has completed their higher-priority event, you can return the crew back to their original assignment. To remove the suspended status from the crew, simply place the crew en route back to the original event. (See **Placing a Crew En Route Using Crew Actions** or **Placing a Crew En Route using the Active Job Information Window**.)

If the crew cannot return to the original assignment, you can simply drop the assignment from the crew using the procedures for **Unassigning a Crew**. When you drop the assignment, the crew will no longer be suspended.

Releasing a Crew from an En Route/Onsite Event

To release a crew from an en route/onsite event, complete these steps:

1. Open the Active Job Information window for the crew you want to release.
2. Click the **Release Crew** button. The following occurs:
 - The crew will be released from the event.
 - The crew's active job information will be removed from the Crew List window.
 - The crew button/row changes to white (if the crew is not assigned to another event).

Other Crew Functions

There are other crew functions that can be performed using other windows. This section describes those functions.

Releasing a Crew using Work Agenda

To release a crew from an event using the Work Agenda window, complete these steps:

1. Select the row in the Trouble Events list for the event that the crew is assigned or en route to.
2. Click the **Rel Crew** button.
 - The crew is released from the event.

Note: If more than one crew is associated with the event, a dialog will appear, prompting you to select which crew to release.
 - The crew's active job information is removed from the Crew List window.

- The crew button/row changes to white (if the crew is not assigned or en route to another event).

Moving a Crew using the Control Tool

To move a crew using the Control Tool, complete these steps:

1. In the Viewer window, locate the device that the crew is en route to/onsite at.
2. Double-click on the device to bring up the Control Tool.
3. Select the **Move Crew...** option on the Control Tool. The Move Crew dialog box opens.
4. Either type in the name of the device that is the new crew location or select the new device location in the Viewer window.
5. Click **OK**. The crew symbol moves on the Viewer map, and the crew's Device updates on the Crew List. The crew remains en route to/onsite at that same event, however.

AVL Crews

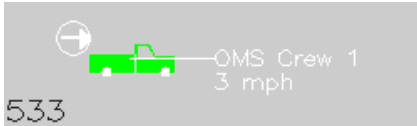
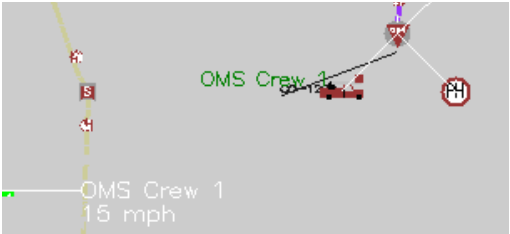
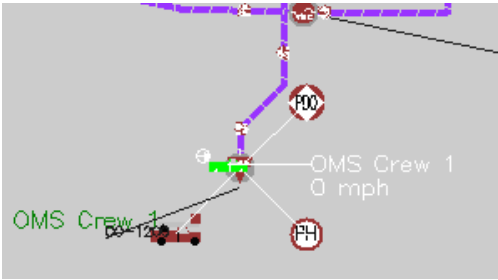
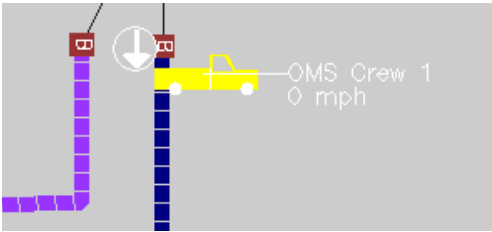
In a system that has AVL-enabled crews, there are special AVL crew condition symbols that will appear in the Viewer window. These condition symbols also have their own set of Control Tool options.

AVL Crew Symbols

The AVL crew condition symbols consist of a truck, whose color denotes its status (assigned, en route, unavailable, etc.), a directional arrow indicating its direction of travel, the Crew ID of the crew, and miles per hour reading indicating how fast it is traveling. Below are examples of what these symbols may look like in the Viewer window.

The table below describes the AVL crew condition symbol color codes.

Color	Description	Example
White	Available	This figure shows a crew that is available and unassigned. 
Cyan	Assigned	

Color	Description	Example
Green	En Route	The following figure shows a crew enroute.  The following figure shows a crew en route with the destination visible:  The following figure shows a crew onsite: 
Yellow	Unavailable	The following figure shows an unavailable crew: 

AVL Crew Control Tool Options

The AVL crew condition symbols have their own special set of control tool options.

Using the Control Tool for an AVL Crew

To bring up a control tool for an AVL crew, complete these steps:

1. In the Viewer window, locate the AVL crew condition symbol.
2. In the Work Agenda window, select the row of the event you wish to associate with the AVL crew, if any.
3. Double-click on the AVL crew condition symbol to bring up the Control Tool.

The Control Tool window for an AVL crew contains the following buttons:

- The **Assign** button assigns the selected crew to the event indicated in the Event Info section of the Control Tool window.
- The **En Route** button places the selected crew en route to the event indicated in the Event Info section of the Control Tool window.
- The **Release Crew** button releases the crew from the event indicated in the Event Info section of the Control Tool window.
- The **Crew Detail...** button opens the Crew Information window.
- The **Show En Route Location** button will focus the Viewer on the device that the crew is en route to.
- The **Update Avail...** button opens the Crew Availability dialog box where you can change the availability of a crew.
- The **Active Job Info...** button opens the Active Job Information window.
- See **Using the Operator's Workspace Control Tool** on page 1-37 for additional information regarding the Control Tool and its options.

Managing Calls with Trouble Management

As calls come in from customers reporting outages and other problems, they can be sent into the Oracle Utilities Network Management System or entered directly within Oracle Utilities Network Management System. Oracle Utilities Network Management System – Trouble Management analyzes the calls and applies a set of analysis rules. It then groups the calls based upon those rules and presents the information to you in terms of trouble events. Customers may also request to be called back as a customer service and to verify restoration.

This section displays the following topics:

- **Changing Rule Sets**
- **Entering Trouble Calls**
- **Using the Trouble Information Window**
- **Viewing Call Information**
- **Emailing Customer Lists**

Changing Rule Sets

Rule sets are a collection of analysis rules that Oracle Utilities Network Management System Trouble Management uses to determine how and when certain devices will be predicted out and how fast a prediction moves upstream. For example, a rule set might cause fuses to be predicted out if three or more service outages are predicted on downstream transformers. Meanwhile, circuit breakers might require five downstream device outages to cause an upstream prediction to them.

You can change the rule set for the control zone(s) you have authority over using the Authority window.

To change the rule set for a control zone, complete these steps:

1. Click the **Authority** button in the Environment Manager. The Authority window opens.
2. Select the row of the control zone you want to change.
3. Click the **Change Rule Set...** button. A dialog box opens.
4. In the Rule Sets available list, select the rule set you want to change to.
5. Click the **OK** button. The rule set for that control zone is updated. Oracle Utilities Network Management System Trouble Management will begin grouping and prioritizing new trouble calls in that control zone based on the new rule set.

Note: You can only change the rule set for one row at a time.

Entering Trouble Calls

Use the Trouble Call Entry window to enter trouble calls.

Using the Trouble Call Entry Window

To access this window, click the **Misc Tools** button on the Environment Manager and then the **Trouble Call Entry** toggle button on the Misc Tools dialog. The Trouble Call Entry window displays the following fields and buttons:

- The **Call ID** field is used to enter the unique call identifier in order to recall previous calls.
- **Account #** contains the customer's account number.
- **Telephone** contains the customer's telephone number.
- **Name** contains the customer's name.

- **Address** contains the customer's address.
- **City** contains the customer's city, state, and zip code.
- **Customer Type** contains the customer's type value.
- **Customer Device** contains the name of the customer's service device.
- **Reported State Date** contains the date and time the problem began for the customer.
- The **Callback Requested** button designates whether or not the customer wants to receive a follow up call.
- **Customer Comment** is a text field for you to enter any further comments about the customer complaint.
- The **Event/Customer Info** field contains summary information for any known existing event that may be affecting that customer, including the event type and number of customers affected. The system automatically populates this field.
- The **Operations Event Note** field contains notes entered by operations staff, if any.
- **Estimated Restore Time** contains the date and time at which the event is estimated to be restored.

Buttons

- The **Power** button displays the type of power problem reported by the customer (e.g., Dim Lights), if any. When you click here, a drop-down list of power problems displays.
- The **Cause** button displays the potential cause of the problem reported by the customer (e.g., Tree Limb on Wire), if any. When you click here, a drop-down list of causes displays.
- The **Description** button displays any additional descriptive clues as reported by the customer (e.g., Sagging Wire). When you click here, a drop-down list of descriptions displays.
- The **Street Light** button displays any problem with street lighting (e.g., Traffic Signal Out). When you click here, a drop-down list displays.
- The **Meter** button displays the action to take with the customer's meter (e.g., Disconnect). When you click here, a drop-down displays.
- The **Meet** button indicates whether the crew is needed to meet the fire or police departments or an electrician. When you click here, a drop-down displays.
- The **Priority** button indicates if the trouble is high priority or life threatening. When you click here, a drop-down displays.
- The **Cancel Call** button allows you to cancel previous calls from the customer.
- The **Submit Call** button saves the currently displayed customer call and clears the fields.
- The **Search** button searches the database for the customer based on information you have entered in the Trouble Call Entry fields.
- The **Next Customer** button finds the next customer attached to the same device.
- The **Clear Form** button clears all the fields in the Trouble Call Entry window.
- The **Event History** button opens the Event History For dialog box, which displays information on previous events for the customer.
- The **Meet** button opens the Meet dialog, which allows you to enter an appointment for the customer.
- The **Print** button opens the Print dialog box to print the currently displayed customer call.
- The **Exit** button exits the Trouble Call Entry window.

Entering a Trouble Call

To enter a trouble call, complete these steps:

1. Open the Trouble Call Entry window by clicking the **Misc Tools** button on the Environment Manager and then the **Trouble Call Entry** toggle button on the Misc Tools dialog.
2. Do one of the following:
 - Type the name of the customer in the **Name** field, or
 - Type the customer's account number in the **Account #** field.
3. Click the **Search** button. The customer's information populates the fields in the window.
 - If there are multiple customers with the same name, the Search Results window opens listing all of the customers that match the name you entered. Select the customer you are looking for and click **OK**.
 - If there are 4 or fewer customers with the same name, the Trouble Call Entry window will populate with the information for the first customer found. You can use the **Next Customer** button to navigate through the rest of the matches.
 - If there are over 100 customers that match the name you entered, a message box prompts you to enter more information.
4. Enter information about the complaint by selecting items from the Request drop-down menus.
5. If the customer would like to receive a follow-up call, click on the **Callback Requested** toggle.
6. Enter any customer comments in the Customer Comment field.
7. Click the **Submit Call** button. The fields clear and a dialog opens to display the unique identifier (Call ID) for the call just entered. Oracle Utilities Network Management System Trouble Management will either add the call to a current event or post a new event in the Work Agenda. It will also post the appropriate flags (e.g., probable service outage, broken pole, etc.) on the device in the Viewer.

Entering Fuzzy Calls

Fuzzy calls are calls that are not initially associated with a device. For example, a fuzzy call results when you receive a call from the police reporting that a pole is down at a street intersection. When more information becomes available, you can associate a fuzzy call with a device. For information on associating a fuzzy call, see **Unassociating/Reassociating a Call from/to a Device** on page 2-12.

To enter a fuzzy call, complete these steps:

1. Open the Trouble Call Entry window by clicking the **Misc Tools** button on the Environment Manager and then the **Trouble Call Entry** toggle button on the Misc Tools dialog.
2. Clear all the fields by clicking the **Clear Form** button.
3. Enter the street name or intersection in the Address field.
4. Click the **Search** button. A Call Entry Message appears telling you there is no match for this address, but the call may be saved.
5. Click **OK**.
6. Enter information about the complaint by selecting items from the drop-down menus.

7. Click **Submit Call**. The fields clear and a dialog opens to display the unique identifier (Call ID) for the call just entered. A new event appears in the Trouble Events List of the Work Agenda with an unknown device type and the location you entered.

Meets

Meets are appointments to meet someone, usually at a specified date and time. For example, a customer may call up and request a voltage check at their home next Thursday at 9:00am. Meets may also be of a more immediate nature, such as the Fire Department calling up and requesting that someone come out immediately to disconnect power at a location for safety reasons.

This section includes the following topics:

- **Using the Meets Dialog**
- **Creating a New Scheduled Meet**
- **Creating a New ASAP Meet**
- **Rescheduling a Meet**
- **Canceling a Meet**

Using the Meets Dialog

To display the Meets dialog, click the **Meets** button on the Trouble Call Entry window. The Meets dialog displays the following fields and buttons:

- The **Scheduled/ASAP** buttons allow you to designate whether the meet should be a scheduled (future) meet or an ASAP (critical) meet.
- The **Scheduled Date** field allows you to specify the date of the scheduled meet.
- The **Scheduled Time** field allows you to specify the time of the scheduled meet.
- The **New Meet** button closes the Meet dialog and sends in a meet call for the customer.
- The **Reschedule Meet** button closes the Meet dialog and sends in a reschedule meet call for the customer.
- The **Cancel Meet** button closes the Meet dialog and sends in a cancel meet call for the customer.
- The **Exit** button closes the Meet dialog and returns you to the Trouble Call Entry window.

Creating a New Scheduled Meet

To create a scheduled (future) meet for a customer, complete these steps:

1. Complete all but the last step as described in the **Entering a Trouble Call** on page 2-52 section (do everything except click the **Submit Call** button).
2. Click the **Meet** button. The Meet dialog appears with the Scheduled button already selected.
3. Enter a date in the future into the **Scheduled Date** field.
4. Enter a time into the **Scheduled Time** field.
5. Click the **New Meet** button. The Meet dialog disappears. The fields clear in the Trouble Call Entry window and a dialog opens to display the unique identifier (Call ID) for the call just entered. Oracle Utilities Network Management System Trouble Management will post a new event in the Work Agenda with an **Evt Type** of “MEET”, a **Status** of “NEW”, and a **Start Date** consisting of the Scheduled Date and Time you specified. It will also post a future meet symbol on the device in the Viewer.

Creating a New ASAP Meet

To create an ASAP (critical) meet for a customer, complete these steps:

1. Complete all but the last step as described in the **Entering a Trouble Call** on page 2-52 section (do everything except click the **Submit Call** button).
2. Click the **Meet** button. The Meet dialog appears with the Scheduled button already selected.
3. Select the **ASAP** button. The Scheduled Date and Scheduled Time fields are disabled.
4. Click the **New Meet** button. The Meet dialog disappears. The fields clear in the Trouble Call Entry window and a dialog opens to display the unique identifier (Call ID) for the call just entered. Oracle Utilities Network Management System Trouble Management will post a new event in the Work Agenda with an **Evt Type** of “MEET”, a **Status** of “RED”, and a **Start Date** consisting of the current date and time. It will also post a critical meet symbol on the device in the Viewer, and a continuous audible alarm will sound every 3 seconds until the event is acknowledged in the Work Agenda. Acknowledging the critical meet changes its **Status** to “CRT”.

Rescheduling a Meet

To reschedule an existing meet for a customer, complete these steps:

1. Open the Trouble Call Entry window by clicking the **Misc Tools** button on the Environment Manager and then the **Trouble Call Entry** toggle button on the Misc Tools dialog.
2. Do one of the following:
 - Type the name of the customer in the **Name** field, or
 - Type the customer’s account number in the **Account #** field.
3. Click the **Search** button. The customer’s information populates the fields in the window.
4. Click the **Meet** button. The Meet dialog appears.
5. To reschedule the meet to a different scheduled date/time:
 - Enter a date in the future into the **Scheduled Date** field.
 - Enter a time into the **Scheduled Time** field.
6. To reschedule the meet to ASAP:
 - Select the **ASAP** button. The Scheduled Date and Scheduled Time fields are disabled.
7. Click the **Reschedule Meet** button. The Meet dialog disappears. The fields clear in the Trouble Call Entry window and a dialog opens to display the unique identifier (Call ID) for the call just entered. Oracle Utilities Network Management System Trouble Management will update the existing meet event in the Work Agenda with the appropriate **Start Date** value. If the meet was previously a future meet and is now ASAP, its **Status** will change to “RED”, its symbol will change to a critical meet symbol in the Viewer, and a continuous audible alarm will sound every 3 seconds until the event is acknowledged in the Work Agenda. If the meet was previously an ASAP meet and is now a future meet, its **Status** will change to “NEW”, and its symbol will change to a future meet symbol in the Viewer.

Canceling a Meet

To cancel an existing meet for a customer, complete these steps:

1. Do one of the following:
 - Type the name of the customer in the **Name** field, or
 - Type the customer’s account number in the **Account #** field.
2. Click the **Search** button. The customer’s information populates the fields in the window.

3. Click the **Meet** button. The Meet dialog appears.
4. Click the **Cancel Meet** button. The Meet dialog disappears. The fields clear in the Trouble Call Entry window and a dialog opens to display the unique identifier (Call ID) for the call just entered. Oracle Utilities Network Management System Trouble Management will update the existing meet event in the Work Agenda with a **Status** of “C-CNL”.
5. Select the “C-CNL” event row in the Work Agenda and click the **Cancel** button. The Cancel dialog appears.
6. Enter a reason in the **Reason Text** field, and then click the **Ok** button.

The meet event’s **Status** is now “CNL”, indicating that it has been canceled.

Aging of Meets

As a future meet nears its scheduled time, Oracle Utilities Network Management System Trouble Management will automatically turn the scheduled future meet into an ASAP critical meet. The threshold for this to occur is once the difference between the scheduled time and the current time is 20 minutes or less.

Event History

When you have a customer’s information loaded in the Trouble Call Entry window, you may view their past outage event history by bringing up the Event History dialog.

Displaying the Event History

To bring up a customer’s outage event history, press the **Event History** button. (If a customer doesn’t have any outage event history, the system displays a message indicating that no event history exists.)

The Event History displays the following fields and buttons:

- At the upper-left hand corner of the dialog appears the customer’s name.
- The **Date/Time** column contains the start date and time of the past event.
- The **Dur (min)** column contains the duration of the past event, in minutes.
- The **Type** column contains the Type drop-down menu option that was selected in the Event Details window for the past event.
- The **Failure** column contains the Failure drop-down menu option that was selected in the Event Details window for the past event.
- The **Remedy** column contains the Remedy drop-down menu option that was selected in the Event Details window for the past event.
- Both the **OK** and **Cancel** button close the Event History dialog.

Using the Trouble Information Window

Oracle Utilities Network Management System Trouble Management displays customer information about trouble events using the Trouble Information window. The Trouble Information window has three main views. The view that opens initially depends on from where you open the window.

This section includes the following topics:

- **Trouble Information Views**
- **Callers View**
- **Customers View**
- **Critical Customer View**
- **Supply Points View**
- **AMR Customers View**

Trouble Information Views

The table below describes the various Trouble Information views.

View	Description
Callers	Lists all calls associated with an event.
Customers	Lists all the customers: located on/downstream from a given device, when accessed via the Control Tool affected by a given event, when accessed via the Trouble Event Lists affected on a given device, when accessed via Trouble Summaries
Critical Customer	Lists all of the customers designated as critical that are affected in a given control zone/on a given device, when accessed via Trouble Summaries

Callers View

The Callers view lists all calls associated with an event.

Callers View topics include:

- **Displaying the Callers View**
- **Moving a Customer to a Different Device**
- **Ungrouping Calls**

Displaying the Callers View

To open the Callers view by selecting an event in the Trouble Events List (in the Work Agenda window) and clicking the **Info...** button. The Callers View displays the following fields and buttons:

- The **Event #** field displays the number assigned to the event by the system.
- The list title displays how many calls the event has, as well as how many calls are still active and how many have been restored.
- The **Updated** field displays the date and time at which the Callers view was last populated, as this list is not dynamically updated.
- The **Feeder** field displays the feeder on which the affected device resides.
- The **Device** field displays the name of the device associated with the event.

- The **Device Type** field displays the type of device associated with the event.
- The **Customer Comment** field displays any customer comments that were entered by the call taker for the selected call.
- The **Sort/Filter** identifiers display which sort and/or filter is applied to the view.
- The **Clues** column displays the trouble code clues received for the call.
- The **Device** column displays the name of the customer's service device.
- The **Name** column displays the customer's name.
- The **Telephone** column displays the customer's telephone number.
- The **Date** column displays the date and time of the customer's call.
- The **Crit** column displays the customer type value of the customer.
- The **CMT** column displays "Y" if the call contains customer comments and "N" if it does not.
- The **Address** column displays the customer's address.
- The **Account #** column displays the customer's account number.
- The **Meter #** column displays the customer's meter number.
- The **Active** column indicates whether or not customer is considered to still be actively out (Y) or restored (N).
- The **Grp** column indicates whether the event is to be manually ungrouped. The possible types are:
 - TBU
 - N/A
- The **Customers** button changes the Trouble Information window to the Customer View.
- The **AMR Customers** button changes the Trouble Information window to the AMR Customer View.
- The **Supply Points** button changes the Trouble Information window to the Supply Points View.
- The **Call Info...** button opens the Call Information window for the selected call.
- The **Move Customer...** button opens the Move Customer dialog box, allowing you to move a customer to a new device.
- The **Exit** button closes the Trouble Information window.

Menus

The File, Sort, and Filter menus are similar to other menus in Oracle Utilities Network Management System. For detailed information on these menus, see **Getting Started With Operator's Workspace** on page 1-1.

The following table describes the options available on the Callers view Actions menu.

Action Menu Option	Description
Call Info...	Opens the Call Information window for the selected call.
Customers	Changes the Trouble Information window to the Customers View.
Supply Points	Changes the Trouble Information window to the Supply Points View.
AMR Customers	Changes the Trouble Information window to the AMR Customers View.
Ungroup	Opens the Ungroup dialog box, allowing you to ungroup calls from the event.
Unassociate	Opens the Unassociate dialog box, allowing you to unassociate calls from their device and (optionally) associate them with a new device.
Move Customer...	Opens the Move Customer dialog box, allowing you to move a customer to a new device.
Exit	Closes the Trouble Information window.

Moving a Customer to a Different Device

You can move a customer to a different device if you discover the customer is associated with an incorrect device.

To move a customer to a different device, complete these steps:

1. Locate the device you want to move the customer to in the Viewer window.
2. Select the event row in the Trouble Events list (in the Work Agenda window) for the customer you want to move.
3. Click the **Info...** button. The Trouble Info window opens in the Callers View.
4. Select a caller row in the list of callers that corresponds with the customer you want to move.
5. Either click the **Move Customer...** button or select Move Customer... from the Actions menu. A dialog box opens displaying the name, address, and device information for the customer.
6. Go back to the Viewer window and click on the device you want to move the customer to. The identification of the new device appears in the New Device field in the Move Customer dialog box.
7. Click **OK**. Although the map does not reflect the change, the system considers the customer as served by the new device, and the customer's call is re-analyzed by the Trouble Analysis engine using the new device information.

Note: Moving a customer to a new device is a temporary change since Oracle Utilities Network Management System Trouble Management does not directly modify the customer information. However, Oracle Utilities Network Management System Trouble Management will track the change and successive calls for that customer will be associated with the new device. Your technical department must make permanent changes to the customer information.

Ungrouping Calls

You can ungroup calls that were automatically grouped by the system as a result of trouble analysis rules. For example, you would ungroup a call from an event that is not actually related to the event, but rather should be its own non-groupable event.

To ungroup calls, complete these steps:

1. Select the event row in the Trouble Events list (in the Work Agenda window) you want to ungroup and click the **Info...** button. The Trouble Information window opens.
2. Select the row(s) in the Trouble Info window for the call(s) you want to ungroup.
3. Select Ungroup from the Actions menu. The Ungroup dialog box opens.
4. Click **OK**.
 - In the Work Agenda, the calls are ungrouped and a new event row appears in the Trouble Events list with the appropriate device association.
 - In the Work Agenda, the ungrouped calls are removed from the # Calls column for the event they were ungrouped from.

Note: Events that are manually ungrouped will not be automatically grouped again by the system. However, you can manually group them again.

Customers View

Depending upon where it's accessed from, the Customers view lists all the customers located on/downstream from a given device, affected by a given event, or affected on a given device.

To open this view, click on the **Customers** button in the Callers view. The Customers View displays the following fields and buttons:

- The **Event #** field displays the number assigned to the event by the system.
- The list title displays either how many customers are located on/downstream from a given device, affected by a given event, or affected on a given device, depending upon from where the view is accessed.
- The **Updated** field displays the date and time at which the Customers view was last populated, as this list is not dynamically updated.
- The **Feeder** field displays the feeder on which the associated device resides.
- The **Device** field displays the name of the associated device.
- The **Device Type** field displays the type of the associated device.
- The **Customer Comment** field displays any customer comments that were entered by the call taker for the selected customer, if any.
- The Sort/Filter identifiers display which sort and/or filter is applied to the view.
- The **Clues** column displays the trouble code clues received for the customer's call, if any.
- The **Device** column displays the name of the customer's service device.
- The **Name** column displays the customer's name.
- The **Telephone** column displays the customer's telephone number.
- The **Date** column displays the date and time of the customer's call, if any.
- The **Crit** column displays the customer type value of the customer.
- The **CMT** column displays "Y" if the call contains customer comments and "N" if it does not.
- The **# Calls** column displays how many times a customer has called for the event.

- The **Address** column displays the customer's address.
- The **Account #** column displays the customer's account number.
- The **Meter #** column displays the customer's meter number.
- The **Callers** button changes the Trouble Information window to the Callers View.
- The **Supply Points** button changes the Trouble Information window to the Supply Points View.
- The **AMR Customers** button changes the Trouble Information window to the AMR Customers View.
- The **Call Info...** button opens the Call Information window for the selected customer, if they have called in.
- The **Email** button opens the Email dialog, which allows you to email the list of customers currently displayed in the Customers View.
- The **Exit** button closes the Trouble Information window.

Critical Customer View

The Critical Customer view lists all of the customers designated as critical that are affected in a given control zone/on a given device.

To open the Critical Customer view, click on the **Show Crit Cust...** button in the Trouble Summaries window. The Critical Customer view displays the following fields and buttons:

- The **Event #** field displays the number assigned to the event by the system.
- The list title displays either how many critical customers are affected in a given control zone or on a given device, depending upon from where the view is accessed.
- The **Updated** field displays the date and time at which the Critical Customer view was last populated, as this list is not dynamically updated.
- The **Feeder** field displays the feeder on which the associated device resides.
- The **Device** field displays the name of the associated device.
- The **Device Type** field displays the type of the associated device.
- The **Customer Comment** field displays any customer comments that were entered by the call taker for the selected customer, if any.
- The Sort/Filter identifiers display which sort and/or filter is applied to the view.
- The **Clues** column displays the trouble code clues received for the customer's call, if any.
- The **Device** column displays the name of the customer's service device.
- The **Name** column displays the customer's name.
- The **Telephone** column displays the customer's telephone number.
- The **Date** column displays the date and time of the customer's call, if any.
- The **Crit** column displays the customer type value of the customer.
- The **CMT** column displays "Y" if the call contains customer comments and "N" if it does not.
- The **# Calls** column displays how many times a customer has called for their current event.
- The **Address** column displays the customer's address.
- The **Account #** column displays the customer's account number.
- The **Meter #** column displays the customer's meter number.

- The **Call Info...** button opens the Call Information window for the selected customer, if they have called in.
- The **Exit** button closes the Trouble Information window.

Supply Points View

Depending upon where it's accessed from, the Supply Points view lists all of the supply Points located downstream from a given device, or all of the supply points associated with a given event.

To open this view, click the **Supply Points** button in the Callers or Customers view. The Supply Points View displays the following fields:

- The **Event #** field displays the number assigned to the event by the system.
- The list title displays how many supply points the event has.
- The **Feeder** field displays the feeder on which the affected device resides.
- The **Device** field displays the name of the device associated with the event.
- The **Device Type** field displays the type of device associated with the event.
- The **Device** column displays the name of the customer's service device.
- The **# Customers** column displays the sum of all customers attached to the supply point.
- The **# KEY** column displays the sum of all KEY customers attached to the supply point.
- The **# EMR** column displays the sum of all EMR customers attached to the supply point.
- The **# MED** column displays the sum of all MED customers attached to the supply point.
- The **# Crit Tot** column displays the sum of all critical customers attached to the supply point.
- The **Control Zone** column displays the supply point's control zone name.
- The **# Calls** column displays the sum of all calls entered for the event from the supply point.
- The **Grp** column displays the pending action for the row:
 - TBG – To Be Grouped
 - TBU – To Be Ungrouped
 - FAIL – Action failed

See **Graphical Grouping** on page 2-11 for more information.

AMR Customers View

Depending upon where it's accessed from, the AMR Customers view lists all the AMR-enabled meters located on/downstream from a given device or affected by a given event.

To open this view, click on the **AMR Customers** button in the Callers or Customers view. The AMR Customers View displays the following fields and buttons:

- The **Event #** field displays the number assigned to the event by the system.
- The list title displays either how many AMR Customers are located on/downstream from a given device, affected by a given event, or affected on a given device, depending upon from where the view is accessed.
- The **Updated** field displays the date and time at which the Customers view was last populated, as this list is not dynamically updated.
- The **Feeder** field displays the feeder on which the associated device resides.
- The **Device** field displays the name of the associated device.
- The **Device Type** field displays the type of the associated device.

- The **Customer Comment** field displays any customer comments that were entered by the call taker for the selected customer, if any.
- The Sort/Filter identifiers display which sort and/or filter is applied to the view.
- The **Clues** column displays the trouble code clues received for the customer's call, if any.
- The **Device** column displays the name of the customer's service device.
- The **Phases** column displays the phases of the customer's service device.
- The **Name** column displays the customer's name.
- The **Telephone** column displays the customer's telephone number.
- The **Date** column displays the date and time of the customer's call, if any.
- The **Crit** column displays the customer type value of the customer.
- The **CMT** column displays "Y" if the call contains customer comments and "N" if it does not.
- The **# Calls** column displays how many times a customer has called for the event.
- The **Address** column displays the customer's address.
- The **Account #** column displays the customer's account number.
- The **Meter #** column displays the customer's meter number.
- The **Request #** column displays the index of the last AMR ping request.
- The **Request Date** column displays the date of the last AMR ping request.
- The **Completed By** column displays the login name of the user who completed the last ping request.
- The **Received Date** column displays the date of the last AMR reading.
- The **Probability** column displays the probability percentage from the last AMR reading.
- The **Status** column displays the ON/OFF response from the last AMR reading.
- The **Customers** button changes the Trouble Information window to the Customers View.
- The **Callers** button changes the Trouble Information window to the Callers View.
- The **Call Info...** button opens the Call Information window for the selected customer, if they have called in.
- The **AMR Confirm** button initiates a ping request for the selected meters.
- The **Update** button refreshes the table with the latest AMR response information.
- The **Exit** button closes the Trouble Information window.

See **AMR Requests** on page 2-26 for more information.

Viewing Call Information

Information about logged calls is displayed in the Call Information window. This window replaces the paper tickets previously used to track outages. An event (represented by a single row in the Trouble Events list of the Work Agenda) can have multiple calls if calls have been grouped to one event. The Call Information window may be accessed either from the Trouble Information window or the Dispatch Information window. You cannot edit the fields in the Call Information window; they are for display only.

Using the Call Information Window

To open the Call Information window from the Trouble Information window, select the row of the call you want to display and then click on the **Call Info...** button or select **Call Info...** from the Actions menu.

To open the Call Information window from the Dispatch Information window, select the row of the call you want to display and click on the **Call Info...** button.

The Call Information window displays the following fields and buttons:

- **Account #** displays the customer's account number.
- **Event Status** displays the current status of the event that this call is a part of.
- **Telephone** displays the customer's phone number.
- **Event #** displays the number assigned to the event by the system.
- **Name** displays the customer's name.
- **Clues** displays the short description representation of the Request drop-down menu selections that were entered in the Trouble Call Entry window when the call was logged.
- **Address** displays the customer's address.
- **Reported Start Date** displays the date and time the problem began for the customer.
- **City** displays the customer's city, state and zip code.
- **Call Taker ID** displays the user name of the person who entered the call.
- **Customer Type** displays the customer type value for the customer.
- **Crew ID** displays the name of the crew that has been dispatched to the event, if any.
- **Customer Device** displays the name of the customer's service device.
- **Callback Date** displays the date and time by which the customer has requested a follow up call.
- **Zone(s)** displays the control zone(s) the customer is located in.
- **Customer Comment** displays any customer comments that were entered at the time the call was logged.

Buttons

- The **Print** button opens the Print dialog box to print the currently displayed customer call information.
- The **Exit** button exits the Call Information window.

Emailing Customer Lists

The Email dialog allows you to email the list of customers from the Trouble Information Customers View to designated recipients. The recipient(s) will receive an email message with an attached CSV file containing the current contents of the Trouble Information Customers table. You may also add other file attachments to the email message.

Opening the Email Dialog

To open the Email dialog, click on the **Email** button on the Customers view.

Sending an Email

To email the contents of the Trouble Information Customers table, complete these steps:

1. Select the **Email** button on the Customers View. The Email dialog appears.

2. Type the email address(es) of the recipient(s) into the **To** field.
3. Type the email address(es) of the carbon copy recipient(s) into the **Cc** field, if any.
4. Type an email subject into the **Subject** field.
5. Type any additional accompanying text for the email in the body field.
6. Press the **Attach...** button to select any additional files to attach to the email.
7. Press the **Send** button to send the email or the **Cancel** button to cancel the sending of the email. If the email is successfully sent, the Email dialog disappears.

Viewing Trouble Summaries

The Trouble Summaries window displays the current event information grouped according to control zone level from company to device.

To access the Trouble Summaries window, click the **Summaries** toolbox on the Environment Manager, then clicking **Trouble Summaries**. The following summaries are available:

- **Company Summary**
- **Region Summary**
- **Branch Summary**
- **Substation Summary**
- **Feeder Summary Window**

The data displayed at each level gives you a summary of the event information in a specific area. The buttons on the bottom of the Trouble Summaries window change depending on the control zone level you are viewing. The table on the Trouble Summaries window displays information relating to the summary level that you have selected. Many of the columns are the same from one level to another (e.g., the same columns display for the Company, Region, and Branch). The **SUM** row in the Company, Region, and Branch summaries displays the total numbers for each column in the table.

Company Summary

The Company Summary provides information about each region within the utility with active events. If you want to view additional detail on a particular region, you can select the row for the region and click the **Region Summary** button or double-click on the row for the region to view the Region Summary.

The Company Summary window displays the following fields and buttons:

- The **Last Update** field displays the date and time at which the Company Summary was last refreshed.
- The **Region** column contains the name of the region within the company level.
- The **Est Rest Time** column contains the latest date and time of estimated restoration in the region.
- The **Fdrs Out** column contains the number of feeders in the region that are considered out of service. Specifically, this is the number of events in the region where the device class of the probable/confirmed outage device is circuit.
- The **# Calls** column contains the number of customers in the region that have called.
- The **# Out** column contains the number of customers in the region experiencing an outage.
- The **# of Device Outages** column contains the total number of device outages in the region.
- The **# of Service Outages** column contains the total number of service outages in the region.
- The **# Not Dispatched** column contains the total number of events in the region that do not have crews dispatched.
- The **# Crit** column contains the number of critical customers in the region experiencing an outage.

Buttons

- The **Region Summary** button displays the Region Summary information for the selected region.

- The **Show Crit Cust...** button opens the Trouble Information Critical Customer view, which either displays all affected critical customers in the Company if no row was selected when the button is pressed, or displays the critical customers affected for the selected region if a region row is selected when the button is pressed.
- The **Refresh** button updates the data displayed in the Company Summary. The information in the table is not dynamically updated. The date and time that the information was last updated is shown above the table in the Last Update field.
- The **Exit** button closes the Company Summary window.

Region Summary

The Region Summary provides information about each branch within a selected region with active events. If you want to view additional detail on a particular branch, you can select the row for the branch and click the **Branch Summary** button or double-click on the row for the branch to view the Branch Summary.

The Region Summary displays the following fields and buttons:

- The **Last Update** field displays the date and time at which the Region Summary was last refreshed.
- The **Branch** column contains the name of the branch within the region.
- The **Est Rest Time** column contains the latest date and time of estimated restoration in the branch.
- The **Fdrs Out** column contains the number of feeders in the branch that are considered out of service. Specifically, this is the number of events in the branch where the device class of the probable/confirmed outage device is circuit.
- The **# Calls** column contains the number of customers in the branch that have called.
- The **# Out** column contains the number of customers in the branch experiencing an outage.
- The **# of Device Outages** column contains the total number of device outages in the branch.
- The **# of Service Outages** column contains the total number of service outages in the branch.
- The **# Not Dispatched** column contains the total number of events in the branch that do not have crews dispatched.
- The **# Crit** column contains the number of critical customers in the branch experiencing an outage.
- The **Branch Summary** button displays the Branch Summary information for the selected branch.
- The **Show Crit Cust...** button opens the Trouble Information Critical Customer view, which either displays all affected critical customers in the region if no row was selected when the button is pressed, or displays the critical customers affected for the selected branch if a branch row is selected when the button is pressed.
- The **Refresh** button updates the data displayed in the Region Summary. The information in the table is not dynamically updated. The date and time that the information was last updated is shown above the table in the Last Update field.
- The **Exit** button closes the Region Summary window.

Branch Summary

The Branch Summary provides information about each substation within a selected branch with active events. If you want to view additional detail on a particular substation, you can select the row for the branch and click the **Substation Summary** button or double-click on the substation row to view the Substation Summary.

The Branch Summary displays the following fields and buttons:

- The **Last Update** field displays the date and time at which the Branch Summary was last refreshed.
- The **Substation** column contains the name of the substation within the branch.
- The **Est Rest Time** column contains the latest date and time of estimated restoration in the substation.
- The **Fdrs Out** column contains the number of feeders in the substation that are considered out of service. Specifically, this is the number of events in the substation where the device class of the probable/confirmed outage device is circuit.
- The **# Calls** column contains the number of customers in the substation that have called.
- The **# Out** column contains the number of customers in the substation experiencing an outage.
- The **# of Device Outages** column contains the total number of device outages in the substation.
- The **# of Service Outages** column contains the total number of service outages in the substation.
- The **# Not Dispatched** column contains the total number of events in the substation that do not have crews dispatched.
- The **# Crit** column contains the number of critical customers in the substation experiencing an outage.
- The **Substation Summary** button displays the Substation Summary information for the selected substation.
- The **Show Crit Cust...** button opens the Trouble Information Critical Customer view, which either displays all affected critical customers in the branch if no row was selected when the button is pressed, or displays the critical customers affected for the selected substation if a substation row is selected when the button is pressed.
- The **Refresh** button updates the data displayed in the Branch Summary. The information in the table is not dynamically updated. The date and time that the information was last updated is shown above the table in the Last Update field.
- The **Exit** button closes the Branch Summary window.

Substation Summary

The Substation Summary provides information about each feeder served by a selected substation with active events. If you want to view additional detail on a particular feeder, you can select the row for the branch and click the **Feeder Summary** button or double-click the feeder row to view the Feeder Summary.

The Substation Summary displays the following fields and buttons:

- The **Last Update** field displays the date and time at which the Substation Summary was last refreshed.
- The **Feeder** column contains the name of the feeder within the substation.
- The **# Calls** column contains the number of customers on the feeder that have called.

- The **# Out** column contains the number of customers on the feeder experiencing an outage.
- The **# of Device Outages** column contains the total number of device outages on the feeder.
- The **# of Service Outages** column contains the total number of service outages on the feeder.
- The **# Not Dispatched** column contains the total number of events on the feeder that do not have crews dispatched.
- The **# Crit** column contains the number of critical customers on the feeder experiencing an outage.
- The **First Call Date** column contains the date and time of first event on the feeder.
- The **Feeder Summary** button displays the Feeder Summary information for the selected feeder.
- The **Show Crit Cust...** button opens the Trouble Information Critical Customer view, which either displays all affected critical customers in the substation if no row was selected when the button is pressed, or displays the critical customers affected for the selected feeder if a feeder row is selected when the button is pressed.
- The **Refresh** button updates the data displayed in the Substation Summary. The information in the table is not dynamically updated. The date and time that the information was last updated is shown above the table in the Last Update field.
- The **Exit** button closes the Substation Summary window.

Feeder Summary Window

The Feeder Summary provides information about each device with active events within a selected feeder. It also displays a summary row for the feeder. If you want to view additional affected customer information for particular feeder or device, you can select the row for the feeder/device and click the **Customer Summary** button or double-click on the row to view the Customer Summary on the Trouble Info window.

The Feeder Summary displays the following fields and buttons:

- The **Last Update** field displays the date and time at which the Feeder Summary was last refreshed.
- The **Feeder/Device** column contains the name of the feeder or device on the feeder.
- The **# Calls** column contains the number of customers on the feeder/device that have called.
- The **# Out** column contains the number of customers on the feeder/device experiencing an outage.
- The **# of Device Outages** column contains the total number of device outages on the feeder/device.
- The **# of Service Outages** column contains the total number of service outages on the feeder/device.
- The **# Not Dispatched** column contains the total number of events on the feeder/device that do not have crews dispatched.
- The **# Crit** column contains the number of critical customers on the feeder/device experiencing an outage.
- The **First Call Date** column contains the date and time of first event on the feeder/device.
- The **Customer Summary...** button opens the Trouble Information Customers view, which displays information about the customers on the selected feeder/device.

- The **Show Crit Cust...** button opens the Trouble Information Critical Customer view, which either displays all affected critical customers on the feeder if no row was selected or a feeder row is selected when the button is pressed, or displays all affected critical customers on the device if a device row is selected when the button is pressed.
- The **Refresh** button updates the data displayed in the Feeder Summary. The information in the table is not dynamically updated. The date and time that the information was last updated is shown above the table in the Last Update field.
- The **Exit** button closes the Feeder Summary window.

Chapter 3

Model Management

This chapter describes how to manage changes to your system data model.

Note: For complete information about configuring, validating, and testing the data model, see “Building the System Data Model” in the Oracle Utilities Network Management System Configuration Guide.

This chapter includes the following topics:

- **Overview**
- **Logging In**
- **Using the Model Management Window**
- **Model Management Actions**

Overview

Model Management is a tool for managing changes to your system model. The process of extracting updates from the GIS and updating the model is unique for each company. Typically, model updates are handled by a set of scripts that run automatically on a regular schedule. If there are problems in the update process, the model administrator can use the Model Management tool to identify and resolve the problems and then re-apply the model updates.

The following describes the model update process and introduces several terms that are used in this chapter:

- **GIS Data Extraction** is the customer-specific process by which data is extracted from the GIS to Oracle’s vendor-neutral model preprocessor (MP) file format.
- MP files must be **preprocessed** before they can be built into the model. Preprocessing converts the MP files into the .mb file format required by the Model Builder.
- A set of transactions (.mb files), collectively referred to as a **patch**, are submitted to the Model Builder for processing. Patches are applied to or built into the core operations model.
- The **Model Builder (MBService)** processes the .mb files, saves the information into the Oracle Utilities Network Management System Operations Model RDBMS, and writes out a set of **maps**, which are used by the Viewer to display portions of the system model.
- If any problems arise during preprocessing or model building, you can use the Model Management tool to perform the following tasks:
 - Identify maps that need to be built (referred to as pending maps)
 - View a list of recent patches and their statuses
 - Display all patches that were applied to a particular map

- Rebuild individual maps or run a full model build
- Run the post process script
- View the Preprocessor Log, the Patch Build Log, and the Patch Build Report
- Enable or disable model build reporting
- Delete a pending map

Logging In

To log in to Model Management, complete these steps:

1. Depending on how your system was installed, do one of the following:
 - Click the **Model Management** icon found under the appropriate program group in your Windows Start Menu.
 - Double-click the **Model Management** icon on your desktop.
 - Open a web browser and type the Model Management URL in the browser's address field.

The Model Management Login window displays.

2. Enter your user name in the User Name field.
3. Enter your password in the Password field.
4. Click the **Validate** button. The bottom portion of the Login window sensitizes.
5. Select the appropriate User Type from the drop-down menu.
6. Click the **Login** button. Upon successful login, the Model Management window opens.

Changing Your Password

You also use the Login dialog box to change your password. To change your password, complete these steps from the Model Management Login window:

1. Enter your user name and password on the Model Management Login window, then click **Validate**. The bottom portion of the Web Callbacks Login window sensitizes.
2. Click **Change Password..** A Change Password dialog box appears.
3. Type your old password in the Old Password field.
4. Type your new password in the New Password field.
5. Retype your new password in the Verify Password field to verify the change.
6. Click the **OK** button. You are returned to the Login screen.
7. Click the **Login** button to finish logging in.

Using the Model Management Window

The Model Management window displays the following information:

- **Pending Map Section**
- **Patches Section**
- **Menu and Toolbar Options**
- **Status Bar**

Model Management actions include:

- **Displaying the Map History**
- **Displaying the Preprocessor Log**
- **Deleting a Pending Map**
- **Building Maps**
- **Rebuilding a Patch**
- **Displaying the Patch Build Log**
- **Displaying the Patch Build Report**
- **Enabling and Disabling Model Building**

Pending Map Section

The **Pending Maps** section lists all maps that need to be built. This section displays the following columns:

- **Map Name** displays the name of the model map.
- The **Pending Actions** column displays one of the following:
 - **To be preprocessed:** The updates have not been preprocessed. Updates must be preprocessed into .mb files before they can be built into the model.
 - **To be committed:** The updates were preprocessed into .mb files, but have not been committed (built into the model).
- The **Last Build Status** displays the status of the last attempt to build the map. Statuses are:
 - **New:** No attempt has yet been made to complete the pending action.
 - **Failed submit:** The patch was submitted to the Model Builder but the map could not be built. See **Rebuilding a Patch** on page 3-6 for details on correcting this problem.
 - **Failed commit:** The patch was submitted to the Model Builder but the map could not be committed due to a dynamic data error. See **Rebuilding a Patch** on page 3-6 for details on correcting this problem
 - **In progress:** The pending action is currently in progress.

Patches Section

The **Patches** section lists all patches for the last 24 hours. To see patches for another time period, change the beginning and ending dates above the list as desired, then click the **Refresh** button.

The Patches section displays the following columns:

- The **Patch** column displays the patch number. The system assigns a number to a patch when it is submitted.

- **Map Name(s)** displays the name of the model map(s).
- **Creation Date** displays the date the patch was created.
- **Commit Date** displays the date the patch was submitted to the Model Builder.
- **Build Status** displays the status of the patch submission. Statuses are:
 - **Successful** - The patch was successfully applied and the model was updated.
 - **Failed Submit** - The patch was submitted to the Model Builder, but the map could not be built. See **Rebuilding a Patch** on page 3-6 for details on correcting this problem.
 - **Failed commit**: The patch was submitted to the Model Builder, but the map could not be committed due to a dynamic data error. See **Rebuilding a Patch on page 3-6** for details on correcting this problem.
 - **In Progress** - The patch is currently being processed by the Model Builder. The map file(s) are either being parsed, being applied, or being committed to the database.

Menu and Toolbar Options

The Model Management menu bar provides access to commonly used functions. Most of the functions in the Actions menu are also available on the toolbar. The toolbar icon is shown next to the menu option in the following list.

- **File Menu**
 -  **Print** - Lets you print the contents of the Model Management window.
 -  **Exit** - Closes the Model Management window and exits the application.
- **Actions Menu**
 -  **Refresh** - Refreshes both the Pending Maps and Patches lists.
 -  **Halt Model Build** - Stops all model build activity. See **Enabling and Disabling Model Building** on page 3-7 for more information.
 -  **Enable Model Build** - Enables model building activity that was previously halted.
 - **Run Full Model Build** - Rebuilds the entire system model, not just individual maps.
 -  **Run Post Process** - Runs the post-processing script. Post processing takes place after maps are built. The default post-processing script performs a recompute and recache of the control zones in DDSservice, but this can be modified to perform various tasks, such as generating control zones or computing EE details from the model.
 - **Enable Model Build Reporting** - Enables or disables model build reporting. The Model Build Report lists all objects that were modified when a particular patch was applied. If enabled, a checkmark appears next to the menu option.
 -  **Build Map** - Prompts you to enter one or more map names and then rebuilds the specified maps. If you are entering multiple map names, separate names with spaces, as shown below:

Landbase_49132336 Primary_49132336

Status Bar

The status bar displays the following information:

- **Maps to Build** - The total number of maps that need to be built. These maps are displayed in the Pending Maps section of the screen.
- **Failed Map** - The total number of maps that could not be built (were submitted and failed).
- **Model Build Status:**
 - **Enabled** - Model building is currently enabled. To disable, choose  **Halt Model Build**.
 - **Halted** - Model building has been halted. To re-enable, choose  **Enable Model Build**.
 - **In Progress** - A model build is currently in progress.

Model Management Actions

You can perform the following actions from the Model Management window:

- **Displaying the Map History**
- **Displaying the Preprocessor Log**
- **Deleting a Pending Map**
- **Building Maps**
- **Rebuilding a Patch**
- **Displaying the Patch Build Log**
- **Displaying the Patch Build Report**
- **Enabling and Disabling Model Building**

Displaying the Map History

To view a list of all patches that affect a particular map, follow these steps:

1. Select a map from the Pending Maps list on the Model Management window.
2. Right-click and select **Map History** from the pop-up menu. The Map History dialog opens. The columns on this dialog match the columns in the Patches list on the Model Management window.
3. Filter the list as desired by typing the target text in the filter boxes at the top of each column.
4. To take action on an item in the list, right-click the item and then select one of the following options from the pop-up menu:
 - **Rebuild Patch**
 - **Patch Build Log**
 - **Patch Build Report**

Displaying the Preprocessor Log

The preprocessor log displays information and warnings generated during preprocessing. Follow these steps to display the preprocessor log file associated with a map:

1. Select a map from the Pending Maps list on the Model Management window.
2. Right-click and select **Preprocessor Log** from the pop-up menu. The preprocessor log opens.

Deleting a Pending Map

You can delete a pending map if you do not want the map to be rebuilt. Follow these steps:

1. Select the map you want to delete from the Pending Maps list on the Model Management window.
2. Right-click and select **Delete** from the pop-up menu. A confirmation window appears.
3. Click **Yes** to confirm deletion.
4. Click the **Refresh** button on the toolbar. The map is removed from the Pending Maps list.

Building Maps

To build one or more pending maps, follow these steps:

1. Select the map you want to build from the Pending Maps list on the Model Management window.
2. Right-click and select **Build Map(s)** from the pop-up menu. The system builds the selected map and displays the results in the Result dialog.
3. Review the results and then click **Close**.
4. Click the **Refresh** button on the toolbar. If the build was successful, the map is removed from the Pending Maps list and a new row is displayed in the Patches list for this map.

Rebuilding a Patch

To rebuild a patch, follow these steps:

1. Select a patch from the Patches list on the Model Management window.
2. Right-click and select **Rebuild Patch** from the pop-up menu. The results of the rebuild process are displayed in the Results dialog.
3. Review the results, and then click **Close**.
4. Click the **Refresh** button on the toolbar. A new row is displayed in the Patches list for this patch.

Displaying the Patch Build Log

The Patch Build Log displays information and warnings generated during the build process. To display the log for a specific a patch build, follow these steps:

1. Select a patch from the Patches list on the Model Management window.
2. Right-click and select **Patch Build Log...** from the pop-up menu. The log entries are displayed in the Patch Build Log dialog.
3. Click **Close** to exit.

Displaying the Patch Build Report

The Patch Build Report contains a list of all objects that were modified when a particular patch was built.

Note: The Patch Build Report is only generated if Model Build Reporting is enabled at the time the patch was built. Use the **Enable Model Build Reporting** option on the Actions menu to enable or disable Model Build Reporting.

To display the build report associated with a patch, follow these steps:

1. Select a patch from the Patches list on the Model Management window.
2. Right-click and select **Patch Build Report...** from the pop-up menu. The Patch Build Report dialog is displayed.
3. Review the report, and then click **Close**.

Enabling and Disabling Model Building

You can temporarily suspend all model building activity if needed. This is useful if, for example, a major storm causes widespread outages. By halting model builds, you can lighten the load on the system while it manages the outages. When storm damage has been repaired, you can resume model building.

To stop model building, select **Halt Model Build** from the Actions menu or click the  toolbar icon.

To resume model building, select **Enable Model Build** from the Actions menu or click the  toolbar icon.

Chapter 4

Configuration Assistant

Oracle Utilities Network Management System – Configuration Assistant is an application used to assist with the configuration process of hand-editing text files (e.g. SQL) that may sometimes be tedious, error-prone and non-intuitive. Configuration Assistant provides a graphical view of the Oracle Utilities Network Management System configuration options and allows the user to add, edit, and store configuration changes.

This chapter includes the following topics:

- **Getting Started with the Configuration Assistant**
- **Using the Configuration Assistant Window**
- **User Administration Tab**
- **Event Management Rules Tab**
- **Event Details Options Tab**
- **Work Agenda Predefined Filters Tab**

Getting Started with the Configuration Assistant

This section includes the following topics:

- **Accessing Configuration Assistant**
- **Logging In**
- **Changing Your Password**

Accessing Configuration Assistant

Configuration Assistant is accessed using a URL (web address) or as a local application, depending on your site's policy. Your system administrator determines the web address, if applicable. If accessing Configuration Assistant from a browser, complete these steps:

- Open your web browser by clicking the shortcut on the desktop, or from the Start menu.
- In the Address field of the browser, enter the URL for Configuration Assistant, then press Enter. Please wait while Configuration Assistant starts.
- If this is the first time running an Oracle Utilities Network Management System Windows-based product on your PC, you may be prompted to do a one-time download of a Java plugin. If so, select Yes/Accept/Agree on all subsequent dialogs until Configuration Assistant opens.

Note: You or your system administrator can add Configuration Assistant to your Start menu and/or create a shortcut icon on your desktop for quick access

to Configuration Assistant. When you start up Configuration Assistant for the first time, it will (depending on installation method) ask if you want to install a shortcut in your Start menu and on your desktop.

Logging In

The Login window is the first Configuration Assistant window you see. You must enter a valid user name and password, and then click the **Login** button. Once your user name and password are validated, the main Configuration Assistant window opens.

To login to Configuration Assistant, complete these steps:

1. Depending on how your system was installed, either:
 - Click the **Configuration Assistant** icon found under the appropriate program group in your Windows Start Menu, or
 - Double click the **Configuration Assistant** icon on your desktop, or
 - Open a web browser and type the Configuration Assistant URL in the browser's Address field. The Configuration Assistant Login window displays.
2. Enter your User ID. This is the user name provided to you by the system administrator.
3. Enter your Password.
4. Click the **Validate** button. The bottom portion of the Configuration Assistant Login window sensitizes.
5. Select the appropriate User Type. This drop-down menu contains the list of user types within your authority.
6. Click the **Login** button. The appropriate Configuration Assistant window opens, based upon the User Type selected.

Changing Your Password

You also use the Login dialog box to change your password. To change your password, complete these steps:

1. Depending on how your system was installed, either:
 - Click the **Configuration Assistant** icon found under the appropriate program group in your Windows Start Menu, or
 - Double click the **Configuration Assistant** icon on your desktop, or
 - Open a web browser and type the Configuration Assistant URL in the browser's Address field. The Configuration Assistant Login window displays.
2. Enter your user name.
3. Enter your password.
4. Click the **Validate** button. The bottom portion of the Configuration Assistant Login window sensitizes.
5. Click on the **Change Password...** button. A Change Password dialog box will appear.
6. Type your old password in the Old Password field.
7. Type your new password in the New Password field.
8. Retype your new password in the Verify Password field to verify the change.
9. Click the **OK** button. You are returned to the Configuration Assistant Login screen.
10. Click the **Login** button to finish logging in.

Using the Configuration Assistant Window

This section describes the menus, toolbar options, and tabs that are available from the Configuration Assistant window. Topics include:

- **Configuration Assistant Menus**
- **Toolbar**
- **User Administration Tab**
- **Event Management Rules Tab**
- **Event Details Options Tab**
- **Work Agenda Predefined Filters Tab**

Configuration Assistant Menus

The Configuration Assistant menu bar provides access to all functions. There are two menus on the Configuration Assistant menu bar:

- **File Menu**
- **Help Menu**

File Menu

- **Export Configuration** - Generates SQL statements for the current state of the configuration associated with every tab on the application. These SQL statements may then be saved to a file and/or printed.
- **Print Preview** - Opens the Print Preview dialog, which allows you to print out the User Administration tab, Event Management Rules tab, Event Details Options tab, and Work Agenda Predefined Filter tab information from the current Configuration Assistant window.
- **Exit** - Closes the Configuration Assistant window.

Help Menu

- **About Configuration Assistant** - Opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Oracle Utilities Network Management System Web Gateway that the application is using.

Toolbar

The Configuration Assistant toolbar provides a shortcut to many of the options available from the Configuration Assistant menus. The toolbar appears below the menu bar by default. You can also dock it on the left side, right side, or bottom of the window or in its own window.

The Configuration Assistant displays the following buttons:

- **Export Configuration** - Generates SQL statements for the current state of the configuration associated with every tab on the application. These SQL statements may then be saved to a file and/or printed.
- **Print Preview** - Opens the Print Preview dialog, which allows you to print out the User Administration panel, Event Management Rules panel, Event Details Options panel, and Work Agenda Predefined Filter panel information from the current Configuration Assistant window.

Moving the Toolbar

To move the toolbar, complete these steps:

1. Click on the toolbar.

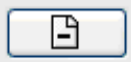
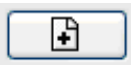
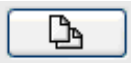
2. Drag it to the new position while holding down the mouse button.
3. Release the mouse button. The toolbar moves to the new location.
4. If you release the mouse button when the toolbar is in close proximity to the left of Configuration Assistant window, the toolbar will dock on that side of the Configuration Assistant window (the outline of the toolbar will change from black to red when you've dragged it to a position where it will dock itself). Otherwise,
5. The toolbar displays in its own window.

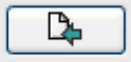
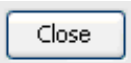
If the toolbar is in its own window, you can move it back to its last docked position by clicking the **X** in the upper right hand corner of the toolbar window.

Print Preview

The Print Preview dialog appears whenever one of the printing options is selected in Configuration Assistant.

The following table describes the buttons on the Print Preview dialog.

Button	Description
 Previous Page	Used to traverse the preview to the previous page in a multi-page output.
 Next Page	Used to traverse the preview to the next page in a multi-page output.
 Zoom Out	Used to zoom out on the contents of the preview.
 Zoom In	Used to zoom in on the contents of the preview.
 Scale Out	Used to scale out the font used for the print output.
 Scale In	Used to scale in the font used for the print output.
 Toggle Orientation	Toggles the page orientation of the output between portrait and landscape.

Button	Description
 Page Setup	Brings up the Page Setup dialog, which allows you to select paper size and source, set page orientation, set margins, and select the printer.
 Reset to Default Setting	Reverts the preview window back to its default settings.
 Print	Sends the print output to your selected printer, and then closes the Print Preview dialog.
 Close	Closes the Print Preview dialog without printing any output.

The Print Preview dialog also allows you to set the margins of the output interactively.

First, position your cursor over the preview output until you see a red outline. Next, while the cursor over the red outline, click and hold your left mouse button and drag the red line to the desired location.

User Administration Tab

The User Administration tab allows an administrator to add a user, remove a user, reset a user's password, modify the set of user types associated with a user, and view a user's login activity. This tab contains four panels:

- **Current Users Panel**
- **User Type Memberships Panel**
- **User Log Panel**
- **User Authentication Method Panel**

From this tab, you can perform the following tasks:

- **Adding a User**
- **Editing a User (NMS-Internal Authentication Enabled / LDAP Username Authentication)**
- **Resetting a User Password (NMS-Internal Authentication Mode Only)**
- **Removing a User**
- **Saving Exported User Configuration**
- **Changing User Type Memberships**
- **Rearranging Current User Types**
- **Resetting a User Login**

Current Users Panel

The Current Users panel on the lists all of the users currently configured to use one or more modules of Oracle Utilities Network Management System, and allows you to add, edit and remove users, as well as reset their password.

Each time you select a row in the Current Users table, the User Type Memberships and User Log panels repopulate with information that pertains to the selected user.

The Current Users Panel displays the following fields and buttons:

- The **Username** column contains the Oracle Utilities Network Management System login name of the user.
- The **Full Name** column contains the full name of the user.
- The **Last Logon** column contains the date and time the user was last logged in.
- The **Last Logoff** column contains the date and time the user was last logged off.
- The **Add** button allows you to create a new user.
- The **Remove** button allows you to remove an existing user.
- The **Edit** button allows you to modify the Username and Full Name of the user.
- The **Reset Password** button allows you to change the password of the user.
 - Note:** This button is only available when using NMS-Internal Authentication.
- The **Refresh** button refreshes the table with the current contents of the database.
- The **Service Recache** button causes the Oracle Utilities Network Management System services to recache with the changes you've made in the Configuration Assistant window. If you do not do this, your changes will not be recognized until Oracle Utilities Network Management System services are restarted.
- The **Export Configuration** button generates SQL statements for the current state of the configuration associated with the User Administration tab. These SQL statements may then be saved to a file and/or printed.

Adding a User

To add a new user to Oracle Utilities Network Management System, complete these steps:

1. Display the User Administration tab on the Configuration Assistant window.
2. Click the **Add** button in the Current Users panel. The Add Edit User Information dialog appears.
3. Enter a name into the Username field.
4. Enter a full name into the Full Name field. The Save button is enabled when LDAP Username Authentication mode is selected.
5. Enter a default zone in the Default Zone Set field.
6. Enter an excluded zone into the Excluded Zone Set field.
7. Select the user's account setting: External User, Priority User Active User.
8. Enter a password in the Password and Confirm Password fields. (These fields are only available in NMS-Internal Authentication mode.) The Save button is enabled when NMS-Internal Authentication mode is selected.
9. Click the **Save** button. The new user is added to the Current Users table.
 - If the Username that was entered already exists, an error appears.

- If the values entered in the Password and Confirm Password fields do not match, an error appears.

Editing a User (NMS-Internal Authentication Enabled / LDAP Username Authentication)

To edit the name information for an Oracle Utilities Network Management System user, complete these steps:

1. Display the User Administration tab on the Configuration Assistant window.
 2. Select the user you wish to edit in the Current Users table.
 3. Click the **Edit** button. The Add / Edit User Information dialog appears.
 4. Modify any of the enabled fields as desired.
 5. Click the **Save** button. The user information is updated in the Current Users table.
- If the Username was modified to a name that already exists, an error appears.

Resetting a User Password (NMS-Internal Authentication Mode Only)

To reset the password for an Oracle Utilities Network Management System user, complete these steps:

1. Display the User Administration tab on the Configuration Assistant window.
 2. Select the user whose password you wish to change in the **Current Users** table.
 3. Click the **Reset Password** button. The Add / Edit User Information dialog appears.
 4. Enter a password into the Password and Confirm Password fields. The Save button becomes sensitized.
 5. Click the **Save** button. The user's new password is saved.
- If the values entered in the Password and Confirm Password fields do not match, an error appears.

Removing a User

To remove a user from Oracle Utilities Network Management System, complete these steps:

1. Display the User Administration tab on the Configuration Assistant window.
2. Select the user you wish to remove in the Current Users table.
3. Click the **Remove** button. A confirmation dialog appears.
4. Click **Yes** to go ahead and remove the user. Click **No** to cancel the removal.

Saving Exported User Configuration

To generate and save SQL statements for the current state of the configuration associated with the User Administration tab, complete the following steps:

1. Display the User Administration tab on the Configuration Assistant window.
2. Click the **Export Configuration** button beneath the Current Users table. A dialog appears indicating that the configuration is being generated.
3. Once the generation is finished, the Generated Configuration dialog appears.
4. To save the generated SQL statements to a file, click the **Save** button. The Save Configuration File dialog appears.
5. Type a name for the file into the File name field. The Save Configuration File dialog disappears.

6. To print out the generated SQL statements, click the **Print** button. The Print Preview dialog appears.
7. Adjust the scale, orientation, and page setup as desired.
8. Click the **Print** button to print the page(s). The Print Preview dialog disappears and the print output appears at your selected printer.
9. Click the **Cancel** button to close the Generated Configuration dialog.

User Type Memberships Panel

The User Type Memberships Panel on the **User Administration Tab** lists all of the products and user types a selected user is currently configured to access. You may add or remove access to products and user types for a selected user.

The User Type Membership Panel displays the following fields and buttons:

- The Products column lists the Oracle Utilities Network Management System product modules that a user may be configured to have login access to. When you select an item in the Product column, the Remaining User Types and Current User Types columns populate to show you which user types for the product that the selected user currently does and does not have access to.
- The Remaining User Types column lists the user types for the selected product that the selected user does not currently have access to.
- The Current User Types column lists the user types for the selected product that the selected user does currently have access to.
- The **Add Selected User Type(s)** button allows you to grant access to a selected user type from the Remaining User Types column to the selected user.
- The **Remove Selected User Type(s)** button allows you to remove access to a selected user type from the Current User Types column from the selected user.

Changing User Type Memberships

To modify the user type memberships for a user, complete the following steps:

1. Display the User Administration tab on the Configuration Assistant window.
2. Select the user whose memberships you wish to modify in the Current Users table. The User Type Memberships table populates with the current user type information for the selected user.
3. Select the desired product from the Products column. The Remaining User Types and Current User Types columns populate with the current user type information for that product for the selected user.
4. Select the user type(s) from the Remaining User Types column that you'd like to add to the user for the selected product. The Add Selected User Type(s) button becomes sensitized.
5. Click the **Add Selected User Type(s)** button. The selected user type(s) now appear in the Current User Types column.
6. Select the user type(s) from the Current User Types column that you'd like to remove the user from for the selected product. The Remove Selected User Type(s) button becomes sensitized.
7. Click the **Remove Selected User Type(s)** button. The selected user type(s) now appear in the Remaining User Types column.

Rearranging Current User Types

To rearrange the order of appearance of the configured user types on the login window(s), complete the following steps:

1. Display the **User Administration** tab on the Configuration Assistant window.
2. Select the user whose memberships you wish to modify in the Current Users table. The User Type Memberships table populates with the current user type information for the selected user.
3. Select a user type in the Current User Types column that you wish to move in the list. The arrows to the right of the column are now sensitized.
4. Click the appropriate arrow to change the user type order:
 - Click the  button to move the selected user type up to the top of the list.
 - Click the  button to move the selected user type up one position in the list.
 - Click the  button to move the selected user type down one position in the list.
 - Click the  button to move the selected user type down to the bottom of the list.

User Log Panel

The User Log panel on the **User Administration Tab** displays the login history for the selected user. From this panel you may also fix log entries for a user that is enable to login because the system thinks the user is already logged in from elsewhere (e.g. a system error of some sort prevented the database from being updated with the correct information).

The User Log panel displays the following fields and buttons:

- The **Host** column displays the name of the host machine that the user was logged in from.
- The **Display** column displays the name of the display machine that was being used.
- The **Product** column displays the name of the product the user was logged in to.
- The **User Type** column displays the name of the user type the user was logged in as.
- The **Login Date** displays the date and time of the user login.
- The **Login Status** displays the status of the user login (e.g. SUCCESSFUL).
- The **Logout Date** displays the date and time of the user logout.
- The **Logout Status** displays the status of the user logout (e.g. SUCCESSFUL).
- The **Reset Login** button allows you to force a logout entry into the database for a user that is still logged in per the User Log information. This is useful in cases where a user's client may have crashed for some reason and the user's loss of client isn't recorded in the database as a logout.

Resetting a User Login

To reset a user login, complete the following steps:

1. Display the User Administration tab on the Configuration Assistant window.
2. Select the user whose login you wish to reset in the Current Users table. The User Log table populates with the login history for the selected user.
3. Select the row in the User Log table that pertains to the login you wish to reset (this must be a row where the Logout Date, Logout Status, and Logout Method columns are blank). The **Reset Login** button sensitizes.
4. Click the **Reset Login** button. The User Log table updates the selected row with the current date and time for the Logout Date, FORCED for the Logout Status, and SYSTEM for the Logout Method.

User Authentication Method Panel

The User Authentication Method panel allows the administrator to choose how the system verifies a user's password. For NMS-Internal, logins are validated against an internal repository of user names and passwords. For LDAP, the user names and passwords are stored on an LDAP server. Also, if LDAP is selected, the Configuration Assistant will not display the "Reset Password" button on the Current Users panel.

Note: Using LDAP authentication requires additional system configuration.

Event Management Rules Tab

The Event Management Rules tab allows an administrator to add, edit, remove, update, and activate Event Management Rules in the Oracle Utilities Network Management System. These rules govern the behavior and output of Oracle Utilities Network Management System Trouble Management in various situations, such as outage prediction, crew behavior, momentary outage processing, etc.

The Event Management Rules tabs contains three panels:

- **Rule Categories Panel**
- **Currently Configured Rules Panel**
- **Documentation Panel**

From this tab, you can perform the following tasks:

- **Selecting a Category to View**
- **Resizing the Rule Categories Panel**
- **Filtering the Currently Configured Rules Table**
- **Adding a Rule to the Configuration**
- **Removing a Rule from the Configuration**
- **Editing a Rule in the Configuration**
- **Saving Exported Configuration**

Rule Categories Panel

The Rule Categories panel on the Event Management Rules tab lists all of the Event Management Rules available for configuration, organized by functional category.

The Rule Categories panel displays the following buttons:

- The **Expand All** button expands all of the rule category folders to display their contents.
- The **Collapse All** button collapses all of the rule category folders.

Selecting a Category to View

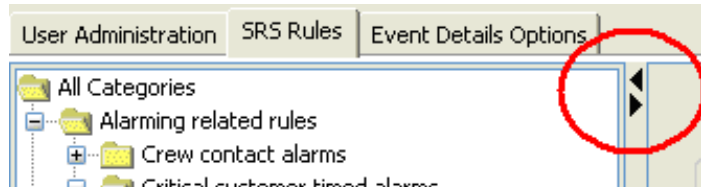
When you select a category folder from the Rule Categories panel, the folder expands to display the names of the Event Management Rules within that category. Some of the categories may also have sub-categories.

When an individual rule is displayed in the list, a symbol appears to the left of the rule. The  symbol indicates that the rule is already configured in at least one rule set. The  symbol indicates that the rule is not presently configured in any rule set.

When you select an individual rule (or certain categories) in the list, the Documentation panel on the Event Management Rules tab populates with documentation for the selected rule.

Resizing the Rule Categories Panel

You can resize the Rule Categories panel by dragging the right side of the panel to the left or right. You can also quickly resize it by clicking on one of the directional arrows next to the upper right-hand corner of the Rule Categories panel.



Currently Configured Rules Panel

The Currently Configured Rules panel on the **Event Management Rules Tab** lists the entire collection of SRS rules currently configured for Oracle Utilities Network Management System, and it allows you to add, edit and remove rules.

The Currently Configured Rules panel displays the following fields and buttons:

- The **Set Name** column displays the set name that the rule is configured in.
- The **Incident Type** column displays the configured incident type value of the rule.
- The **Rule Name** column displays the rule name.
- The **Rule Value 1** column displays the configured rule value 1 value of the rule.
- The **Rule Value 2** column displays the configured rule value 2 value of the rule.
- The **NCG Class** column displays the configured ncg class value of the rule.
- The **NCG Index** column displays the configured ncg index value of the rule.
- The **Rule Value Integer 1** column displays the configured rule value integer 1 value of the rule.
- The **Rule Value Integer 2** column displays the configured rule value integer 2 value of the rule.
- The **Rule Value Integer 3** column displays the configured rule value integer 3 value of the rule.
- The **Rule Value Integer 4** column displays the configured rule value integer 4 value of the rule.
- The **Rule Value Integer 5** column displays the configured rule value integer 5 value of the rule.
- The **Add** button allows you to add a rule to the configuration.
- The **Remove** button allows you to remove a selected rule from the configuration.
- The **Edit** button allows you to edit the selected rule in the configuration.
- The **Refresh** button refreshes the table with the current contents of the database.
- The **Service Recache** button causes the Oracle Utilities Network Management System services to recache with the changes you've made in the Configuration Assistant window. If you do not do this, your changes will not be recognized until Oracle Utilities Network Management System services are restarted.
- The **Export Configuration** button generates SQL statements for the current state of the configuration associated with the Event Management Rules tab. These SQL statements may then be saved to a file and/or printed.

Filtering the Currently Configured Rules Table

To filter the Currently Configured Rules table based upon a selected column value, complete these steps:

1. Display the Event Management Rules tab on the Configuration Assistant window.
2. Click into the cell that contains the value you want to filter the Currently Configured Rules table by.
3. Position your cursor over the relevant cell value, then right-click. A pop-up menu with the option **Toggle Auto Filter** appears.
4. Click the **Toggle Auto Filter** option on the pop-up menu. The Currently Configured Rules table is now filtered by the selected column/cell value combination. The label above the table displays what filter is currently applied to the table.
5. To remove the filtering, right-click over any portion of any row in the Currently Configured Rules table. A pop-up menu with the option **Toggle Auto Filter** appears, and a check now appears next to the option.
6. Click the **Toggle Auto Filter** option on the pop-up menu. The Currently Configured Rules table now contains all of its rows once again, as the filtering has been removed.

Adding a Rule to the Configuration

To add a rule to the configuration, complete these steps:

1. Display the Event Management Rules tab on the Configuration Assistant window.
2. Click on the **Add** button beneath the Currently Configured Rules table. The Event Management Rule Fields dialog appears.
3. Select the name of the rule you wish to add from the Rule Name drop-down menu.
4. Select the name of the rule set you wish to add the rule to from the Ruleset drop-down menu.
5. Indicate whether or not you want the rule to be activated in the rule set by checking (or unchecking) the **Active** checkbox.
6. Enter the desired configuration values for the remainder of the fields.
7. Click the **Save** button to save the newly added rule.
8. If the newly added rule already exists in the specified rule set, a conformation dialog appears.
 - Clicking **Yes** will go ahead and overwrite the existing configuration of the rule with the new configuration that you specified. Clicking **No** will not add the new rule and preserve the existing one.

Note: This is the only validation currently performed when adding a rule. Please refer to the individual rule documentation for further information regarding what the valid values are for a particular rule.

Removing a Rule from the Configuration

To remove a rule from the configuration, complete these steps:

1. Display the Event Management Rules tab on the Configuration Assistant window.
2. Select the rule you wish to remove in the Currently Configured Rules table.
3. Click the **Remove** button. A confirmation dialog appears.
4. Click **Yes** to go ahead and remove the rule. Click **No** to cancel the removal.

Editing a Rule in the Configuration

To edit a rule in the configuration, complete these steps:

1. Display the Event Management Rules tab on the Configuration Assistant window.
2. Select the rule you wish to edit in the Currently Configured Rules table.
3. Click the **Edit** button. The Event Management Rule Fields dialog appears.
4. Modify the rule fields as desired.
5. Click on the **Save** button. The rule information is updated in the Currently Configured Rules table.
 - If the rule was modified such that it has a name of a rule that already exists in another rule set, an error dialog appears.
 - Clicking **Yes** will go ahead and overwrite the existing configuration of the rule with the new configuration that you specified. Clicking **No** will not add the new rule and preserve the existing one.

Note: This is the only validation currently performed when editing a rule. Please refer to the individual rule documentation for further information regarding what the valid values are for a particular rule.

Saving Exported Configuration

To generate and save SQL statements for the current state of the configuration associated with the Event Management Rules tab, complete the following steps:

1. Display the Event Management Rules tab on the Configuration Assistant window.
2. Click the **Export Configuration** button beneath the Currently Configured Rules table. A dialog appears indicating that the configuration is being generated. Once the generation is finished, the Generated Configuration dialog appears.
3. To save the generated SQL statements to a file, click the **Save** button. The Save Configuration File dialog appears.
4. Type a name for the file into the File name field. The Save Configuration File dialog disappears.
5. To print out the generated SQL statements, click the **Print** button. The Print Preview dialog appears.
6. Adjust the scale, orientation, and page setup as desired.
7. Click the **Print** button to print the page(s). The Print Preview dialog disappears and the print output appears at your selected printer.
8. Click the **Cancel** button to close the Generated Configuration dialog.

Documentation Panel

When you select an individual rule (or certain categories) from the list in the Rule Categories panel of the **Event Management Rules Tab**, the Documentation panel populates with documentation for the selected rule.

Event Details Options Tab

The Event Details Options tab allows an administrator to configure the contents of each of the option menus that reside on the Trouble Management and Web Trouble Event Details windows. (See **Event Details** on page 2-13 for more information.)

This tab contains one panel:

- **Event Details Options Panel**

Use this tab to perform the following tasks:

- **Adding an Option**
- **Removing an Option**
- **Editing an Option**
- **Saving Exported Event Details Configuration**
- **Rearranging Options**

Event Details Options Panel

The Event Details Options panel allows you to add, edit, remove, and reorder the contents of each of the option menus that reside on the Trouble Management and Web Trouble Event Details windows.

The Event Details Options panel displays the following fields and buttons:

- The **Event Type** allows you specify which event type configuration you want to modify the options of (e.g., Outage, Non Outage, Planned Event, Switching Event).
- The **Event Details Option Menus** selection menu contains a list of the option menus that exist for the selected Event Type.
- The **Options for Currently Selected Menu** table populates with the currently configured options for the selected option menu and event types.
- The **Add** button allows you to add a new option to the selected option menu for the selected event type.
- The **Remove** button allows you to remove the selected option.
- The **Edit** button allows you to edit the selected option.
- The **Refresh** button refreshes the table with the current contents of the database.
- The **Export Configuration** button generates SQL statements for the current state of the configuration associated with the Event Details Options tab. These SQL statements may then be saved to a file and/or printed.

Adding an Option

To add a new option to an option menu, complete the following steps:

1. Display the Event Details Options tab on the Configuration Assistant window.
2. Select the Event Type whose option menu you wish to change.
3. Select the option menu you wish to change from the Event Details Option Menus drop-down list.
4. Click the **Add** button. The Add/Edit Option dialog appears.
5. Type the name of the option you wish to add into the Option Name field.
6. Click the **Save** button to save the new option. The Options for Currently Selected Menu table updates with the new option.

- If you enter the name of an option that already exists, an error dialog appears.

Removing an Option

To remove an option from an option menu, complete the following steps:

1. Display the Event Details Options tab on the Configuration Assistant window.
2. Select the Event Type whose option menu you wish to change.
3. Select the option menu you wish to change from the Event Details Option Menus drop-down list.
4. Select the option you wish to remove from the Options for Currently Selected Menu table.
5. Click the **Remove** button. A confirmation dialog appears.
6. Click **Yes** to go ahead and remove the option. Click **No** to cancel the removal.

Editing an Option

To edit an existing option to an option menu, complete the following steps:

1. Display the Event Details Options tab on the Configuration Assistant window.
2. Select the Event Type whose option menu you wish to change.
3. Select the option menu you wish to change from the Event Details Option Menus drop-down list.
4. Select the option you wish to edit from the Options for Currently Selected Menu table.
5. Click the **Edit** button. The Add/Edit Option dialog appears.
6. Make the desired changes in the Option Name field.
7. Click the **Save** button to save the new option. The Options for Currently Selected Menu table updates with the edited option.

Note: If you enter the name of an option that already exists, an error dialog appears.

Saving Exported Event Details Configuration

To generate and save SQL statements for the current state of the configuration associated with the Event Details Options tab, complete the following steps:

1. Display the Event Details Options tab on the Configuration Assistant window.
2. Click the **Export Configuration** button beneath the Options for Currently Selected Menu table. A dialog appears indicating that the configuration is being generated.
3. Once the generation is finished, the Generated Configuration dialog appears.
4. To save the generated SQL statements to a file, click the **Save** button. The Save Configuration File dialog appears.
5. Type a name for the file into the File name field. The Save Configuration File dialog disappears.
6. To print out the generated SQL statements, click the **Print** button. The Print Preview dialog appears.
7. Adjust the scale, orientation, and page setup as desired.
8. Click the **Print** button to print the page(s). The Print Preview dialog disappears and the print output appears at your selected printer.
9. Click the **Cancel** button to close the Generated Configuration dialog.

Rearranging Options

To rearrange the order of appearance of the options on an option menu, complete the following steps:

1. Display the Event Details Options tab on the Configuration Assistant window.
2. Select the Event Type whose option menu you wish to change.
3. Select the option menu you wish to change from the Event Details Option Menus drop-down list. The Options for Currently Selected Menu table populates with the options for the selected option menu and event type.
4. Select an option in the table that you wish to move in the list. The arrows to the right of the column are now sensitized.
5. Use the arrow buttons to rearrange options:
 - Click the  button to move the selected user type up to the top of the list.
 - Click the  button to move the selected user type up one position in the list.
 - Click the  button to move the selected user type down one position in the list.
 - Click the  button to move the bottom of the list.

Work Agenda Predefined Filters Tab

The Work Agenda Predefined Filters tab on the Configuration Assistant window allows you to add, modify, and delete pre-defined filters for the Work Agenda. These pre-defined filters are used to remove (hide) specified rows from the Work Agenda list so that only the desired events are shown. Use this tab to perform the following tasks:

- **Adding a Filter**
- **Editing a Filter**
- **Deleting a Filter**
- **Print Preview**

The Work Agenda Predefined Filters tab displays the following fields and buttons:

- The **Current Filter** drop-down displays the name of the currently displayed filter and allows you to select an existing predefined filter.
- The **Column Name** column displays all columns by which you can filter.
- The **Filter Type** column displays the available filter types:
 - **Any** - No filter is applied. All values for this column are included. This is the default.
 - **Match** - When this filter type is selected, the Work Agenda will include only items where the value of the column specified in the Column Name field matches the value specified in the Value field.
 - **Like** - When this filter type is selected, the Work Agenda will include only items where the value of the column specified in the Column Name field includes the value specified in the Value field.
 - **Not Like** - When this filter type is selected, the Work Agenda will include only items where the value of the column specified in the Column Name field does not include the value specified in the Value field.
 - **Multi-Match** - When this filter type is selected, the Work Agenda will include only items where the value of column specified in the Column Name field matches any of the values specified in the Value field.
 - **Not** - When this filter type is selected, the Work Agenda will include only items where the value of the column specified in the Column Name field does not match the value specified in the Value field.
 - **Multi-not** - When this filter type is selected, the Work Agenda will include only items where the value of the column specified in the Column Name field does not match any of the values specified in the Value field.
 - **>** - When this filter type is selected, the Work Agenda will include only items where the value of the column specified in the Column Name field is greater than the value specified in the Value field.
 - **<** - When this filter type is selected, the Work Agenda will include only items where the value of the column specified in the Column Name field is less than the value specified in the Value field.
- The **Value** column allows you to enter the filter value.
- The **Add** button allows you to add a new filter.
- The **Save** button allows you to save a new filter or edit an existing filter.
- The **Delete** button allows you to remove the selected filter.
- The **Refresh** button refreshes the table with the current contents of the database.

- The **Export Configuration** button generates SQL statements for the current state of the configuration associated with the Work Agenda Predefined Filter tab. These SQL statements may then be saved to a file and/or printed.

Adding a Filter

To add a new filter, follow these steps:

1. Click the **Add** button on the Work Agenda Predefined Filters tab. The Add Filter Name dialog is displayed.
2. Enter a meaningful name for the filter and click **OK**. The new filter name is displayed in the Current Filter box. The Filter Options table displays a list of columns by which you can filter the Work Agenda. By default, the Filter Type for all columns is Any, indicating that no filter is currently applied.
3. To apply a filter to a particular column, select the desired Filter Type (described in the previous section) and enter the filter Value. For example, to filter the Work Agenda by restore date, locate the Restore Date column, then select '>' from the Filter Type drop-down, and enter a date in the Value column. The filter will display only events with a Restore Date greater than the date you entered.
4. Repeat step 3 for each column you want to filter by.
5. Click **Save**. The new filter criteria are saved and will be available from the Work Agenda.

Editing a Filter

To edit an existing filter, follow these steps:

1. From the Current Filters combo box, select the filter you want to edit.
2. Modify the filter settings as needed. To remove a filter, select **Any** from the Filter Type drop-down for that column. To filter by a particular column, select the desired Filter Type and enter a filter Value.
3. Click **Save**. The filter is updated and will be available from the Work Agenda.

Deleting a Filter

To delete an existing filter, follow these steps:

1. From the Current Filters combo box, select the filter you want to delete.
2. Click the **Delete** button. A confirmation dialog is displayed.
3. Click **OK** to confirm the deletion. The filter is deleted and will no longer be available from the Work Agenda.

Note: The Trouble Management Work Agenda has 'views' that typically apply filters. The standard views are "All," "To Do," "In Progress," "Incomplete," and "Completed." If you delete the filter that is applied for a view, then the view will no longer apply a filter of that name. If you later create a new filter of that name, it will not be applied in the Trouble Management Work Agenda without additional configuration done outside of Configuration Assistant. This limitation does not impact the Web Trouble Work Agenda.

Saving an Exported User Configuration

To generate and save SQL statements for the current state of the configuration associated with the Work Agenda Predefine Filter tab, complete the following steps:

1. Display the Work Agenda Predefine Filter tab on the Configuration Assistant window.

2. Click the Export Configuration button beneath the Current Filter table. A dialog appears indicating that the configuration is being generated.
3. Once the generation is finished, the Generated Configuration dialog appears.
4. To save the generated SQL statements to a file, click the **Save** button. The Save Configuration File dialog appears.
5. Type a name for the file into the File name field. The Save Configuration File dialog disappears.
6. To print out the generated SQL statements, click the **Print** button. The Print Preview dialog appears.
7. Adjust the scale, orientation, and page setup as desired.
8. Click the **Print** button to print the page(s). The Print Preview dialog disappears and the print output appears at your selected printer.
9. Click the **Cancel** button to close the Generated Configuration dialog.

Chapter 5

Redliner

Oracle Utilities Network Management System – Redliner provides tools for the capture, annotation, emailing and saving of images. You can use these tools to document and collaborate on Oracle Utilities Network Management System and other related screens. You can save screen captures as JPEG files that may be marked-up, commented upon, or distributed via email. You can also use Redliner for sending detailed information to other work groups including customer service centers, marketing, media relations, and technical support.

This chapter includes the following topics:

- **Redliner Window**
- **Working with Images**

Redliner Window

The Redliner main window is used to capture and annotate images. You can perform other actions in the window using the menu or buttons on the toolbar. You will initially access Redliner through a desktop shortcut or from your computer's Start menu.

Menus

There are three menus on the Redliner menu bar: File, Action, and Help.

File Menu

The following table describes the File Menu options.

Option	Description
New	Refreshes the transparent image window by taking a new screen capture and clearing any user edits.
Save...	Opens the Save JPEG image dialog, which allows you to save the current image as a JPEG file.
Print...	Opens the Print dialog, which allows you to print the image.
Email...	Opens the Redliner Email dialog, which allows you to email the image as an attachment.
Exit	Closes the Redliner window.

Action Menu

The following table describes the Action Menu options.

Option	Description
Refresh	Refreshes the transparent image window by taking a new screen capture and clearing any user edits.
Email Settings...	Opens the Redliner Preferences dialog, which allows you to enter email settings such as SMTP Server, Display Name, Reply to Address, etc.

Help Menu

The following table describes the Help Menu options.

Option	Description
About...	Opens a dialog that displays information regarding what application is present running.

Toolbar

The Redliner toolbar provides a shortcut to many of the options available from the Redliner menus. The toolbar appears below the menu bar.

The following table describes the buttons on the Redliner Toolbar.

Button	Description
Draw	Allows user to draw in the transparent image window. Note that this toggle button is mutually exclusive with the Insert Text button.
Insert Text	Allows user to insert text into the transparent image window by opening up the Insert Text dialog. Note that this toggle button is mutually exclusive with the Draw button.
Change Color	Opens the Select Color dialog, which allows you to select a color to use.

Status Bar

The status bar appears at the bottom of the Redliner window, providing operating details for the application.

- The left-most field displays the locked/unlocked status of the image in the transparent image window.
- The center field displays whether Redliner is in drawing or text edit mode.
- The right-most field displays the current color selection.

Working with Images

This section describes how to work with images using Redliner. It includes the following topics:

- **Capturing an Image**
- **Annotating an Image**
- **Saving an Image**
- **Emailing an Image**
- **Printing an Image**

Capturing an Image

The Redliner transparent image window captures your screen at start time and refreshes when resized and repositioned to reflect the windows, desktop, and images behind the tool. The window can be resized and repositioned infinitely in order to capture the exact image needed.

Once the image has been edited, however, the image becomes locked, and repositioning and resizing will not change the image. The locked/unlocked status is always indicated on the Redliner status bar.

To reset the image capture and remove any editing you have performed, select the **File->New** or **Action->Refresh**.

Annotating an Image

The options on the Redliner toolbar are used to annotate a captured image.

- Use the **Draw** button to draw freehand on the image.
- Use the **Insert** button to type text on the image.
- Use the **Change Color** button to select which color to use with the Draw and Insert Text options.

Drawing

To draw on a Redliner captured image, complete these steps:

1. Click the **Draw** button on the toolbar.
2. Click and hold the left mouse button while dragging the cursor around the image to draw freehand lines on the image.

Note: There is no undo action for drawing.

Inserting Text

To insert text onto a Redliner captured image, complete these steps:

1. Click the **Insert Text** button on the toolbar.
2. Place the mouse cursor over the transparent image window and single-click the left mouse button. The Insert Text dialog appears.
3. Select the desired Font, Style, and Size from the Text Properties section of the dialog.
4. Type the desired text into the Text to Insert field.
5. Press the **OK** button. The text appears at the location the cursor was at when the left mouse button was clicked to bring up the Insert Text dialog.

Note: There is no undo action for text insertion.

Changing the Color of Lines or Text

To change the color of the text and/or lines to be added to an image, complete these steps:

1. Click the **Change Color** button on the toolbar. The Select Color dialog appears.
2. Select a color from the Swatches tab of the Select Color dialog.
3. Use the options on the HSB (Hue/Saturation/Brightness) and RGB (Red/Green/Blue) tabs of the Select Color dialog to adjust the selected color, if desired.
4. Click the **OK** button. The Select Color dialog closes, and the newly selected color appears in the right-most field of the status bar.
5. Click either the **Draw** button or **Insert Text** button to proceed to use the newly selected color on the image.

Saving an Image

To save an image that you have captured in the Redliner window, complete these steps:

1. Select the **Save...** option from the File menu. The Save JPEG Image dialog appears.
2. Type the name you wish to give the image into the File name field.
3. Click the **Save Image** button on the dialog. The Save JPEG Image dialog closes and a JPEG file is saved with the name and location you specified in the Save JPEG Image dialog.

Emailing an Image

You may email the current contents of the Redliner window to someone directly from Redliner. The image capture is automatically attached as a JPEG file to the email, and the Redliner Email dialog allows you to enter standard email information including recipient(s) (To:), carbon copy recipients (Cc:), and subject heading (Subject:) in the appropriate fields.

Email Settings

Before you can send email from Redliner, you must first configure the email settings in the Redliner Preferences dialog. To configure the settings, complete these steps:

1. Select the **Email Settings...** option from the Action menu. The Redliner Preferences dialog appears.
2. Type your name into the **Display Name:** field. This is name that will appear as the sender's name in the email sent to the recipient.
3. Type your email address into the **Reply to Address:** field. This is the address that will appear as the sender's email address in the email sent to the recipient.
4. Change the name in the Attachment Name: field, if desired. This is the name that the image attachment will be given in the email sent to the recipient.
5. Type the name of your SMTP server into the **SMTP Server Name:** field. Your system administrator can provide you with this information.

Note: Redliner keeps a history of the email addresses that you have emailed images to. Press the **Clear** button beside the **Clear Address History** field to clear out this history.

6. Press the **OK** button on the Redliner Preferences dialog.

Sending an Email

To email the image captured in the Redliner window, complete these steps:

1. Select the **Email...** option from the File menu. The Redliner Email dialog appears.
2. Type the email address(es) of the recipient(s) into the To: field.

3. Type the email address(es) of the carbon copy recipient(s) into the Cc: field, if any.
4. Type an email subject into the Subject: field.
5. Type any additional accompanying text for the email.
6. Press the **Send Mail** button to send the email.
7. If the email is successfully sent, a confirmation dialog appears.
8. If the email is not successfully sent, an error dialog appears.
9. Click the **OK** button on the Sending Email dialog. The Sending Email dialog closes.

Printing an Image

To print the image captured in the Redliner window, complete these steps:

1. Select **Print...** from the File menu. The Print dialog appears.
2. Select the desired printer, page properties, print range, and copies in the Print dialog.
3. Press the **OK** button on the Print dialog. The Print dialog closes, and the output appears at your desired printer.

Chapter 6

Web Workspace

This chapter describes the Web Workspace application. It includes the following topics:

- **Getting Started with Web Workspace and Web Trouble**
- **Using the Environment Manager**
- **Using the Web Workspace Viewer**
- **Using the Web Workspace Control Tool**
- **Viewing Summaries**
- **Using the Alarms and Devices Lists**
- **Using the User Log**

Getting Started with Web Workspace and Web Trouble

Oracle Utilities Network Management System - Web Workspace is a real-time application that allows utilities to decentralize their operations during heavy workload and storm situations. You can use Web Workspace in remote operations offices in order to better coordinate crew dispatching and operations functions. Web Workspace shares data with other Oracle Utilities Network Management System modules to ensure the most accurate and current data is displayed to your users.

Web Workspace is the base module that centers on the graphical representation of the electrical system. It shares data with the Oracle Utilities Network Management System Operator's Workspace module. The Web Trouble module augments the Web Workspace module with crew and event management capabilities.

This section includes the following topics:

- **Logging In**
- **Common Features**
- **Dockable Windows Navigation**
- **Sorting and Filtering Data**
- **Logging In**
- **Using the Environment Manager**
- **Logging Out**

Logging In

You will initially access Web Workspace from a web browser, which will download the application to your computer. Subsequently, you may start it through a desktop shortcut, from your browser Favorites, or from your computer's Start menu.

Using the Login Window

The Login window is the first Web Workspace window you see. The Login window displays the following fields and buttons:

- The **User ID** field allows you to enter the user name provided to you by the system administrator.
- The **Password field** allows you to enter the password provided to you by the system administrator.
- The **Validate** button verifies your login credentials. If the user name and password are not entered correctly, the system displays an error dialog box.
- The **User Type** drop-down menu contains the list of user types within your authority.
- The **Login** button allows you to complete the login process. Once you click the Login button, the appropriate Web Workspace windows open, based upon the User Type selected.
- The **Change Password...** button brings up a dialog box that allows you to specify a new password for your user name.
- The **Quit** button exits the Login window.

Logging In

To log in to Web Workspace, complete these steps:

1. Depending on how your system was installed, do one of the following:
 - Click the Web Workspace icon found under the appropriate program group in your Windows Start Menu.
 - Double click the Web Workspace icon on your desktop.
 - Open a web browser and type the Web Workspace URL in the browser's Address field.The Web Workspace Login window displays.
2. Enter your user name.
3. Enter your password.
4. Click the **Validate** button. The bottom portion of the Web Workspace Login window sensitizes.
5. Select the appropriate User Type from the drop-down menu.
6. Click the **Login** button. The Environment Manager and various windows open.

Changing Your Password

You also use the Login dialog box to change your password. To change your password, complete these steps:

1. Depending on how your system was installed, do one of the following to start Web Workspace and display the login window:
 - Click the Web Workspace icon found under the appropriate program group in your Windows Start Menu.

- Double click the Web Workspace icon on your desktop.
 - Open a web browser and type the Web Workspace URL in the browser's Address field. The Web Workspace Login window displays.
2. Enter your user name.
 3. Enter your password.
 4. Click the **Validate** button. The bottom portion of the Web Workspace Login window sensitizes.
 5. Click on the **Change Password...** button. A Change Password dialog box will appear.
 6. Type your old password in the **Old Password** field.
 7. Type your new password in the **New Password** field.
 8. Retype your new password in the **Verify Password** field to verify the change.
 9. Click the **OK** button. You are returned to the Oracle Utilities Network Management System Web Workspace Login screen.
 10. Click the **Login** button to finish logging in

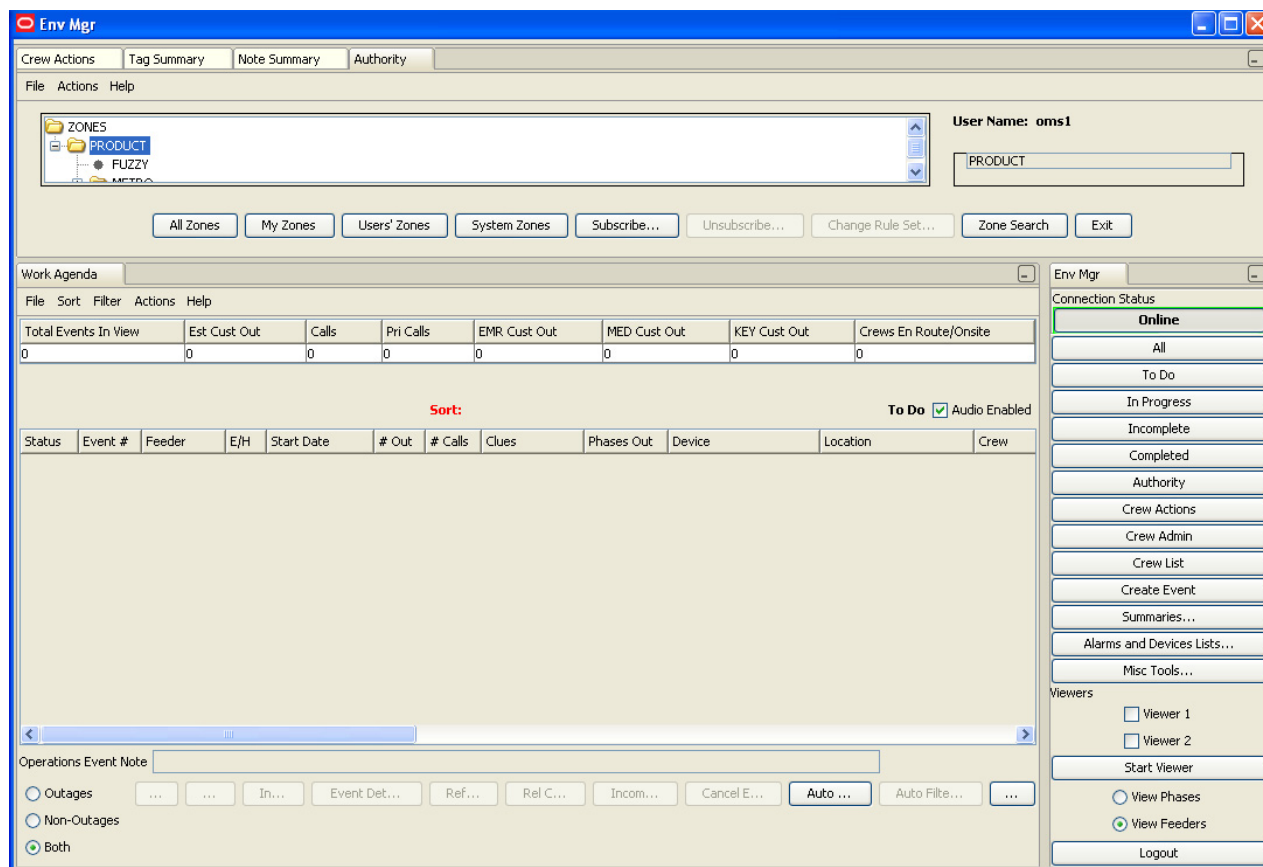
Common Features

There are several features that are common to nearly all Web Workspace and Web Trouble windows. The following sections describe those features.

- The **title bar** tells you what window or dialog box you are using.
- The **menu** bar provides drop-down menus for available actions. Menu options that are followed by an ellipsis [...] indicate that the option opens another window or dialog box.
- **File** menu items typically start standard procedures (e.g., printing or saving) and exit the window; however, File menus can vary between windows.
- The **Actions** menu provides access to features that are almost always specific to a particular window. Frequently used options on the Actions menu are often repeated as buttons on the bottom of the window.
- The **Help** menu appears on the menu bar on many applications. Help is currently not available in the Oracle Utilities Network Management System product. The only Help menu option is About, which primary provides version information.
- The **display area** displays the data provided by the window and allows you to manipulate that data.
- The **buttons** are used to perform an action or open a window. Button actions often correspond to Actions menu options. A button name that is followed by an ellipsis [...] indicates that the button opens another window or dialog box.

Dockable Windows Navigation

Web Workspace can be configured to use special windows called Dockable windows. This allows Web Workspace to have multiple tools running in one window. The following figure shows a Web Workspace & Web Trouble window that includes dockable Work Agenda and Environment Manager windows:



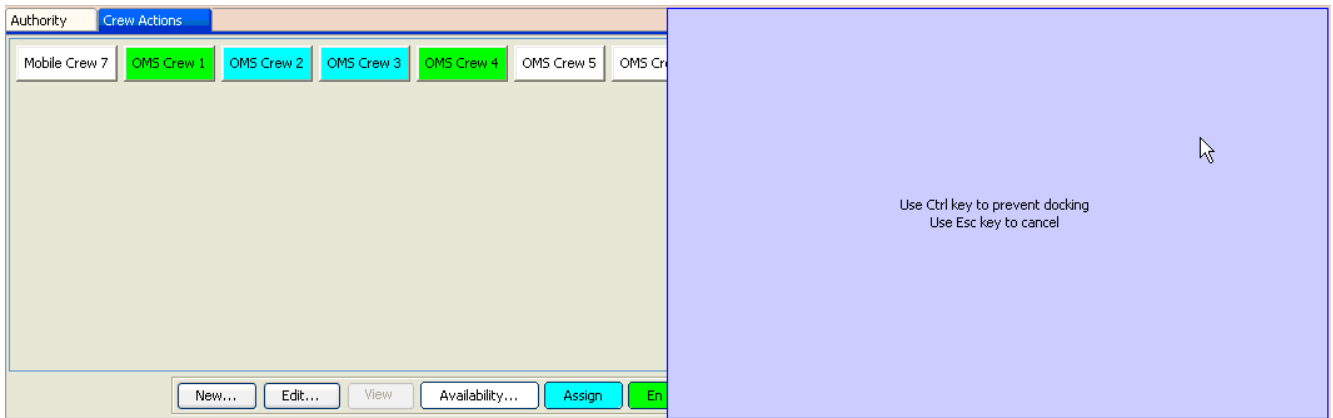
Adjusting Dockable Window Positions

In order to adjust the dockable window positions, perform the following steps:

Move cursor to the divider line, which will cause the mouse cursor to change to the double arrow cursor. Then hold down the left mouse button and drag the divider to the desired position.

Moving Dockable Windows

The dockable windows can be moved from one location to the other. To do this, grab the title of window and move to the desired location. As you move the window around, you can see where the window would be dropped if the mouse button were released.



Note the following about dockable windows:

- If you drop a window to the right of another window, it displays in a separate window to the right.
- If you drop a window in the middle of an existing window, it displays as a tab of the existing window:
- If you want a window to exist independently of the other windows, either move the window completely away from the existing dockable windows or hold down the <Ctrl> key as you release the mouse button.

Sorting and Filtering Data

You can perform single-column sorts and filters in certain Web Workspace windows. Some of the Web Workspace windows also allow you to create your own user-defined sorts and filters. These options, if available, will be found under the Sort and Filter menus located at the top of the window. You can sort tables to display the rows in a particular order or filter them to display a specific subset of the rows.

Sorting

You can apply ascending or descending sorts to a single column in a table (where configured) by clicking once on the column header; clicking a second time on the column header will sort the rows in the opposite order. An arrow appears next to the column label identifying if the sort is ascending or descending.

Sort topics include:

- **Using the Sort Dialog Box**
- **Creating a User-Defined Sort**
- **Editing and Deleting Saved Sorts**

Using the Sort Dialog Box

Some windows allow you to create, modify, apply, and save user-defined sorts. Sorts are saved for each application, user and user type. Thus, if a user logs in with multiple user types, each of the types will have their own set of sorts.

If a window supports user-defined sorts, click select **Sort Dialog...** from the Sort menu or click the **Sort** button on the toolbar to display the Sort Dialog.

The Sort Dialog displays the following items:

- The table within the dialog allows you to specify the order in which the sort criteria is applied, which column in the application is to be used in the sort criteria, and in which direction the sort is to be applied (ascending, descending).
- The **OK** button applies the current sort to the table of data and exits the Sort dialog.
- The **Save** button opens a dialog box for naming and saving the current sort. Saving automatically applies the sort. You can retrieve sorts through the option menu on the Sort dialog and the Sort menu in the window.
- The **Delete** button opens a dialog box asking you to confirm the deletion of the selected sort. Once it is deleted, you can no longer retrieve the sort.
- The **Show** button applies the current sort settings to the table of data, but does not exit the Sort dialog.
- The **Exit** button exits the Sort dialog.
- The Option menu presents a list of saved sorts for modification.

Creating a User-Defined Sort

To create a user-defined sort, complete these steps:

1. Open the Sort Dialog by selecting **Sort Dialog...** from the Sort menu.
2. In the row for Order 1, click on the drop-down menu under **Column** and select the first column you wish to sort by, and then click on the drop-down menu under **Direction** and select which order you wish to sort the column by.
3. Repeat the previous step for any other columns you additionally want to sort by.
4. Click the **Save...** button. The Store the Sort? dialog appears, prompting you to name the sort.
5. Click the **Yes** button. The Store the Sort? dialog appears, and the name you provided now appears in the option menu of saved sorts.
6. Click the **OK** button. The Sort dialog closes, and the sort is saved to the database.

Editing and Deleting Saved Sorts

You can use the option menu in the Sort Dialog to select a saved sort for modification. You can also delete a saved sort by selecting it from this menu and clicking on the **Delete** button.

Filtering

In addition to sorting, certain windows allow you to filter the data displayed. Single column value filtering can be performed on applications that have the **Auto Filter** and **Auto Filter Off** buttons configured.

Filtering topics include:

- **Using the Filter Dialog**
- **Creating a User-Defined Filter**
- **Editing and Deleting Saved Filters**

Using the Filter Dialog

The Filter dialog box is used to create, modify, apply, and save user-defined filters. User-defined filters are only accessible to the user who creates them and are erased when the user logs out.

To display this dialog, select **Show Filter Dialog** from the Filter menu or click the **Filter** button on the toolbar.

The Filter dialog displays the following items:

- The **Current Filter** drop-down menu presents a list of saved filters for modification. When you select a filter from the list, the filter criteria are displayed.
- The **Column Name** column displays the name of each column available in the table of data you are filtering.
- The **Type** column displays the type of filter, as described in the following table:

Option	Description
any	No filter is applied to this field.
match	Table rows display only if the field value exactly matches the filter value.
like	Table rows display only if the field value includes the filter value (e.g., “Status” includes “tat”).
not like	Table rows display only if the field value does not include the filter value (e.g., “Status” does not include “tot”).
multi-match	Matches with multiple arguments. Multiple filter values may be entered in the same field, separated by spaces.
not	Table rows display only if the field value does not match the filter value.
multi-not	Not with multiple arguments. Multiple filter values may be entered in the same field, separated by spaces.
>=	Greater than or equal to. Table rows display only if the field value is greater than or equal to the filter value.
<=	Less than or equal to. Table rows display only if the field value is less than or equal to the filter value.

- The **Value** field is the value you want to filter by. For example, to show only data for the current day, you would set the Type to Match and the Value to the current date.
- The **Save** button opens a dialog box for naming and saving the current filter. Saving automatically applies the filter. You can retrieve filters through the Current Filter option menu and the Filter menu in the window.
- The **Delete** button opens a dialog box asking you to confirm the deletion of the selected filter. Once it is deleted, you can no longer retrieve the filter.
- The **Apply** button applies the current filter settings to the table of data, but does not exit the Filter dialog box.
- The **Exit** button exits the Filter dialog box and removes any applied filter settings.

Creating a User-Defined Filter

To create a user-defined filter, complete these steps:

1. Open the Filter Dialog by selecting **Show Filter Dialog** from the Filter menu.
2. Click on the **Type** drop-down menu of a column you want to filter by and select the filter option you want.
3. In the **Value** column next to the selected **Type**, enter the desired filter criteria.
4. Repeat the two previous steps for any other columns you want to filter by.
5. Click the **Save** button. A dialog box appears, prompting you to name the filter.

6. Type a name into the field and click **Yes**. The table is filtered according to the selected criteria, and the Filter field above the table now displays the name of your newly created filter.

Note: You can view the filter by clicking on the Apply button, but if you click Exit, the applied filter will be undone before the dialog box closes.

Editing and Deleting Saved Filters

You can use the Current Filter drop-down menu in the Filter Dialog window to select a saved filter for modification. You can also delete a saved filter by selecting it from this menu and clicking on the **Delete** button.

Using the Environment Manager

The Environment Manager (referred to as Env Mgr or Eman) contains buttons for starting other windows and managing the visual workspace. The default location for the Environment Manager is the right side of the desktop.

The Environment Manager allows you to perform the following tasks:

- **Viewing the Connection Status**
- **Accessing Tools**
- **Starting Viewers**
- **Saving User Preferences**
- **Using the Miscellaneous Tools**
- **Taking Authority**
- **Creating an Event**
- **Logging Out**

Viewing the Connection Status

The connection status indicator on the Environment Manager indicates whether Web Workspace is connected to the server. One of the following options display:

- “Online” displays (green) when Web Workspace is connected
- “Offline” displays (red) when Web Workspace is disconnected

Accessing Tools

The Environment Manager provides a column of buttons for opening primary Web Workspace and Web Trouble windows.

The following table describes each of the button actions.

Button	Item Opened	Description
Work Agenda	To Do List in Work Agenda	Displays events that have not yet been assigned or dispatched, along with associated system and event information.
Authority	Authority window	Lets you manage control and monitoring of discrete zones of the operations area by subscribing particular users.
Crew Actions	Crew Actions window	Provides a visual representation of crews available for the subscribed authority zones, with the ability to change crew status.
Crew Admin	Crew Administration window	Enables you to create, edit, activate and deactivate crews.
Crew List	Crew List window	Displays a list of crews and specific information about each crew.
Create Event	Create Event window	Lets you record events identified in the field that have not been reported by a customer. See Creating an Event on page 6-14.

Button	Item Opened	Description
Summaries...		Displays a set of buttons for the three summary options described below. Select the summary you want to display.
Tag Summary	Tag Summary window	Displays a list of all tags in the subscribed authority zones. See Tag Summary on page 6-51.
Note Summary	Note Summary window	Displays a list of all notes in the subscribed authority zones. See Note Summary on page 6-49.
SCADA Summary	SCADA Summary window	Displays a list of all SCADA measurement points in the subscribed authority zones. See SCADA Summary on page 6-54.
Alarms and Devices Lists...		Displays a set of buttons for the alarms and devices lists described below. Click the button for the list you want to display.
Abnormal Devices List	Alarms and Devices Lists window, filtered as the Abnormal Devices List	Displays a list of off-nominal devices in the subscribed authority zones. See Abnormal Devices List on page 6-57.
Device Operations List	Alarms and Devices Lists window, filtered as the Device Operations List	Displays all recent operations performed in the user's control zones. See Device Operations List on page 6-58.
SCADA Alarms List	Alarms and Devices Lists window, filtered as the SCADA Alarms List	Displays a list of all SCADA alarms in the subscribed authority zones. See SCADA Alarms List on page 6-58.
System Alarms List	Alarms and Devices Lists window, filtered as the System Alarms List	Displays a list of system alarms. See System Alarms List on page 6-58.
Misc Tools...		Displays a set of buttons for the options described below. Click the button for the function you want to use.
User Preferences	User Preferences dialog box	Allows you to save or restore your current environment. See Saving User Preferences on page 6-11.
User Log	User Log window	Displays a list of all single-user actions within a certain time period. See Using the User Log on page 6-61.
Manage Documents	Associated Documents window	Allows you to associate documents to objects. See Associating Documents to Devices on page 6-47.
Feeder Load Summary	Feeder Load Summary Tool	Displays a list of the current feeder loads.

Starting Viewers

The Viewers section of the Environment Manager controls the display of the Viewer. To display a single Viewer window, click the Start Viewer button. You can display up to two Viewer windows. With more than one Viewer running, you can toggle between them using the Viewer 1 and Viewer 2 checkboxes. Once you open a Viewer window you can move and resize it.

The Viewers section displays the following buttons:

- The **Start Viewer** button opens a Viewer window.
- The **View Phases** radio button changes all Viewers' drawing areas to show conductor and cable coloring by phases.
- The **View Feeders** radio button changes all Viewers' drawing areas to show conductor and cable coloring by feeders.

For information about using the Viewer, see **Using the Web Workspace Viewer** on page 6-16.

Using the Miscellaneous Tools

The **Misc Tools...** buttons on the Environment Manager perform general administrative functions.

- Click the **User Preferences** button to open the User Preferences dialog box, which allows you to save window settings and table column sizing and placement. See **Saving User Preferences** on page 6-11 for more details.
- Click the **User Log** button to open the User Log window, which displays a list of all actions for a particular user in a selected time period. See **Using the User Log** on page 6-61.
- Click the **Manage Documents** button to open the Associated Documents window, which allows you to associate documents to objects. See **Associating Documents to Devices on page 6-47** for details.

Saving User Preferences

Each time Web Workspace is started, it displays its windows in the standard configured locations and sizes. However, you can lay out the windows to your liking and then save those placement and size settings. In addition, if you reorder or resize columns in a table, you can save those changes also.

To save user preferences:

1. Display the User Preferences dialog box. (From the Environment Manager, click the **Misc Tools...** button and then select **User Preferences**.)
2. Click the **Save** button to save the currently logged in user's preferences to the local machine. The following settings are saved:
 - The set of all currently open windows are saved and used as the set of windows to display on login.
 - The size of all started windows are saved and used as their initial size (except for docked windows).
 - The placement of all started windows are saved and used as their initial placement (does not affect dialog boxes or docked windows).
 - The current width of all columns in tables are saved and used as their initial width.
 - The current ordering of all columns in tables are saved and used as their initial order.

The **Restore** button reverts the preferences for the logged in user back to the system defaults for this user type.

The **Cancel** button closes the User Preferences dialog box without any change to the preferences.

Taking Authority

Control zones are the discrete sections of a utility's electrical distribution system for which users are responsible. You must take authority of control zones in order to see the trouble events, manage the crews and perform device operations in those areas.

The Authority window allows you to take authority over one or more control zones. You can examine and change the assignment of control zones, view the control zones within the distribution system, and identify which users have authority over each zone.

Use the Authority window to perform the following tasks:

- **Viewing Control Zone Authority**
- **Subscribing to a Control Zone**
- **Unsubscribing from a Control Zone**
- **Searching for a Zone**

For a description of the Authority Window, see the next topic.

Using the Authority Window

To access the Authority window, click the **Authority** button on the Environment Manager.

The Authority window displays the following fields and buttons:

- The **Zones** area displays the control zones in the distribution system. Buttons at the bottom of the window allow you to filter which zones display (e.g., All Zones).
- The **User Name** field displays the name of the user who is logged in.
- **Zone Users** displays the user(s) currently subscribed to the selected control zone. If no user is subscribed to the selected control zone, “system” displays in this field.
- **Control Zone** displays the currently selected control zone.

Buttons

- The **All Zones** button displays the entire set of control zones, and collapses the view to display only the zones under the top-level zone. There is also an option under the Authority window's Actions menu for this action.
- The **My Zones** button displays only those zones to which the current user is subscribed. There is also an option under the Authority window's Actions menu for this action.
- The **Users' Zones** button displays all zones that are not controlled by the system (i.e., have been subscribed to by one or more users). There is also an option under the Authority window's Actions menu for this action.
- The **System Zones** button displays only those zones controlled by the system (i.e., have not been assigned to a user). There is also an option under the Authority window's Actions menu for this action.
- The **Subscribe** button gives you control of the currently selected zone (displayed in the Control Zone field). There is also an option under the Authority window's Actions menu for this action.
- The **Unsubscribe** button relinquishes control of the currently selected zone(s) (displayed in the Control Zone field). There is also an option under the Authority window's Actions menu for this action.
- The **Change Rule Set...** button allows you to change the analysis mode rule set used to analyze events in the selected zone.
- The **Zone Search** button allows you to search for a zone by entering its name, or the first part of its name, in a search dialog box. If the system finds a match, the list of control zones

will expand and highlight the matching zone. There is also an option under the Authority window's Actions menu for this action.

- The **Exit** button exits the Authority window. There is also an option under the Authority window's File menu for this action.

Viewing Control Zone Authority

To view control zone authority, complete these steps:

1. Click the **Authority** button on the Environment Manager. The Authority window opens with a list of all the control zones.
2. Click the “+” sign next to a zone to expand the collapsed zone and display all sub-zones within it.
3. Click the “-” sign next to a zone to collapse the display of any sub-zones within that zone.

Subscribing to a Control Zone

To subscribe to one or more control zones, complete these steps:

1. If the Authority window is not open, click on the **Authority** button on the Environment Manager to open it.
2. Expand the list of Control zones (click the “+” signs) to locate the zone you want to control.
3. Select (click on) the row for that zone. The zone will populate the Control Zone field.
4. Click on the **Subscribe** button. A Subscribe dialog box opens.
5. Click on the **Subscribe** button in the dialog box. You are now subscribed to the zone

Note: You can repeat this process to become subscribed to multiple zones at the same level.

Unsubscribing from a Control Zone

When you are finished working in a control zone, you can unsubscribe from the control zone. To unsubscribe, complete these steps:

1. If the Authority window is not open, click on the **Authority** button on the Environment Manager to open it.
2. Click on the **My Zones** button to locate the zone you want to unsubscribe from.
3. Select (click on) the row for that zone. The zone will populate the Control Zone field.
4. Click on the **Unsubscribe** button. An Unsubscribe dialog box opens.
5. Click on the **Unsubscribe** button in the dialog box. You are now unsubscribed from the zone.

Searching for a Zone

The Search feature can help you locate a control zone more quickly than expanding and viewing zones in the Authority window. To search for a zone, complete these steps:

1. In the Authority window, click the **Zone Search** button. A Search Tool dialog box opens.
2. Enter the name or first part of the name of the control zone in the Zone field, and then click the **Find Next** button. The search is not case-sensitive, but you must match exactly in your typing of spaces, hyphens, etc. If the system finds a match, the list of control zones expands and that zone is highlighted.
3. If there are multiple matches, click the **Find Next** button to locate the next control zone that matches your search criteria.

- When you locate the zone you want, click the **Cancel** button to close the Search Tool dialog box.

Example

Two users (“spl1” and “spl22”) may both have work to do in control zone “METRO”. Each user would select “METRO” and click the **Subscribe** button. A Subscribe dialog box would appear and each user would click the **Subscribe** button in the dialog box. Both spl1 and spl22 would be allowed control over the zone. All users subscribed to a zone are listed in the Zone Users field when the zone is selected in the zones tree; “spl1, spl22” would be displayed in the Zone Users field when METRO is selected.

Creating an Event

Sometimes a crew out in the field may discover and report an issue that hasn’t been identified by a customer. As an operator, you may wish to get these events recorded in Oracle Utilities Network Management System. One way to do so is to use the Create Event window.

To open the Create Event window, click the **Create Event** button on the Environment Manager. The Create Event window displays the following fields and buttons:

- The **Selected Device** field displays the name of the device on which to create the event.
- The **Event Start** field and calendar button allow you to enter the start date for the event.
- The **Outage/Non-Outage** buttons allow you to designate whether the event should be created as an outage or non-outage.
- The **OK** button creates the new event on the selected device and closes the Create Event window.
- The **Cancel** button closes the Create Event window without creating a new event.

Logging Out

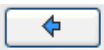
The **Logout** button initiates the logout process for a Web Workspace session. The user is unsubscribed from all control zones for which they had authority, and all current windows close. The Web Workspace Login window is redisplayed.

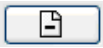
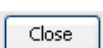
Printing

Printing is an option from several of the Web Workspace and Web Trouble windows. This section describes the basic printing functionality.

The Print Preview dialog box appears whenever one of the printing options is selected in Web Workspace or Web Trouble.

The following table describes the buttons on the Print Preview dialog box.

Button	Description
 Previous Page	Used to traverse the preview to the previous page in a multi-page output.
 Next Page	Used to traverse the preview to the next page in a multi-page output.
 Zoom Out	Used to zoom out on the contents of the preview.

Button	Description
 Zoom In	Used to zoom in on the contents of the preview.
 Scale Out	Used to scale out the font used for the print output.
 Scale In	Used to scale in the font used for the print output.
 Toggle Orientation	Toggles the page orientation of the output between portrait and landscape.
 Page Setup	Brings up the Page Setup dialog box, which allows you to select paper size and source, set page orientation, set margins, and select the printer.
 Reset to Default Setting	Reverts the preview window back to its default settings.
 Print	Sends the print output to your selected printer, and then closes the Print Preview dialog box.
 Close	Closes the Print Preview dialog box without printing any output.

Setting Print Margins

The Print Preview dialog box also allows you to set the margins of the output interactively. Follow these steps:

1. Position your cursor over the preview output until you see a red outline and your cursor becomes a double-headed arrow.
2. While the cursor is a double-headed arrow, click and hold your left mouse button and drag the red line to the desired location.

Using the Web Workspace Viewer

The Viewer presents a graphical representation of the electrical distribution system, with additional symbology for conditions such as outages, crew locations, notes, tags, etc. The Viewer dynamically updates with condition and electrical distribution changes.

This section includes the following topics:

- **Starting the Viewer**
- **Understanding the Viewer Window**
- **Changing the Coloring Mode (Phases or Feeders)**
- **Searching and Loading Viewer Maps**
- **Navigating in the Viewer**
- **Identifying Symbology**
- **Hiding and Displaying Viewer Objects**
- **Executing Traces**

Starting the Viewer

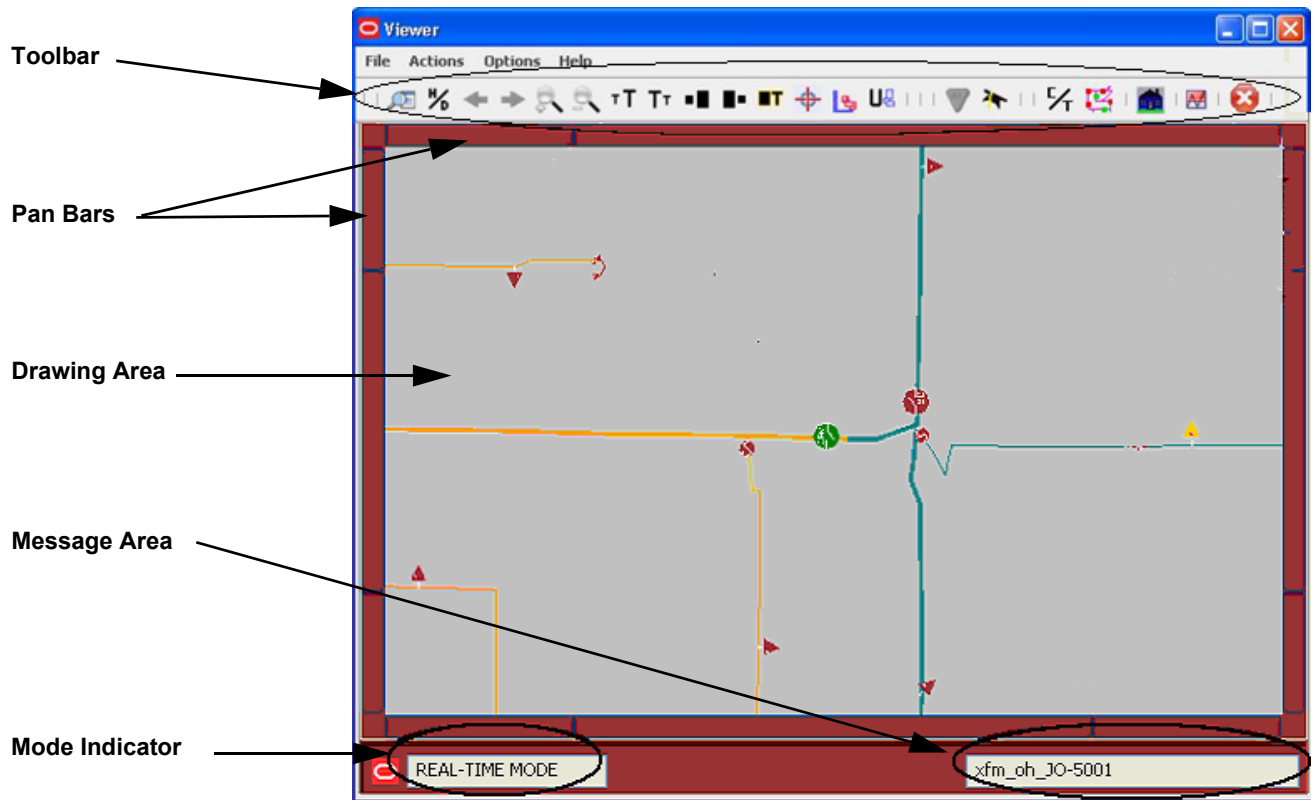
To open a Viewer window, complete these steps:

- Click the **Start Viewer** button on the Environment Manager. A check mark appears in the Viewer 1 check box.
- To start a second Viewer, click the **Start Viewer** button again. A check mark appears in the Viewer 2 check box.

Note: A check mark appears in the check box for each active Viewer window. You can move and resize the Viewers to view more than one Viewer at a time.

Understanding the Viewer Window

The following diagram shows the functional areas of the Viewer:



Drawing Area

The drawing area of the Viewer window displays dynamic maps that reflect the real-time status of the system. The icons and lines used to represent devices and conductors are called symbols, and the conventions that govern them are referred to as “symbolology.”

If you hover the mouse cursor over a crew or device symbol in the drawing area, a brief description (referred to as a tooltip) is displayed. The contents of the description depend on the type of device and whether the device has a note and/or an active event associated with it.

Message Area

The message area of the Viewer is where the Viewer displays an indication of the global device, which could be selected in or outside the Viewer. This area displays the device alias, the feeder name, and substation name.

Toolbar

The toolbar provides buttons for accessing commonly used Viewer functions.



The **Search** button opens the Search dialog box, which allows you to enter search criteria and execute a search in the Viewer.



The **Hide/Display** button opens the Hide / Display dialog box, which allows you to select the types of information that are displayed on the map. See **Hiding and Displaying Viewer Objects**.



The **Back** button moves to the previous view before a pan, zoom, or object focus operation (if any) changed the focus location in the Viewer. This button functions similar to a web browser's back button, storing a dozen "views."



The **Forward** button moves to the next view if the **Back** button has been used. It functions similar to a web browser's forward button.



The **Zoom In** button zooms the view in.



The **Zoom Out** button zooms the view out.



The **Zoom Out** button zooms the view out.



- The **Text Bigger** button increases the text font size.



- The **Text Smaller** button decreases the text font size.



- The **Symbols Bigger** button increases the size of symbols.



- The **Symbols Smaller** button decreases the size of symbols.



- The **Reset Scale** button resets the size of both symbols and text to its default size.



The **Object Focus** button shifts the Viewer focus to the selected device name.



The **Load Maps** button allows you to explicitly load additional maps to display more of the surrounding area or additional detail.



The **Unload Maps** button unloads all maps, not just those in the visible drawing area.



The **Real-Time** button sets the Viewer to real-time mode. Real-time mode displays the actual state of the distribution system. For more information on real-time mode, see **Toggling Between Real-Time and Study Mode on page 6-21**.



The **Study** button sets the Viewer to study mode. Study mode allows you to make changes without affecting the actual state of the distribution system. Changes made in study mode are not visible to other users. For more information on study mode, see **Toggling Between Real-Time and Study Mode on page 6-21**.



The **Control Tool** button toggles the Control Tool mode on or off. When on, this mode opens the Control Tool dialog box when you select a device in the Viewer. This button also toggles off the **Trace** button (exiting Trace mode) if it was on.



The **Trace** button toggles the Trace mode on or off. When on, this mode opens the Trace dialog box when you select a device in the Viewer. This button also toggles off the **Control Tool** button (exiting Control Tool mode) if it was on.



The **Supply Points Mode** button causes the Viewer to display supply points for potential selection. This allows supply points to be graphically grouped and added to an outage.



The **Feeder Load Management** button opens the Feeder Load management window.



The **Exit** button exits the Viewer window.

Pan Bars

Pan bars allow you to move around maps using your mouse. To view a different area of the map, click on the pan bar that is on the side of the map you want to view. The pan bars in the corners allow you to move diagonally. For example, click the pan bar in the upper left corner to move up and to the left in the map.

Changing the Coloring Mode (Phases or Feeders)

The Viewer windows open by default in feeder coloring mode. In this mode, all conductors fed from a given feeder are displayed in the same color.

- To change to phase coloring mode, click the **View Phases** radio button on the Environment Manager. In this mode, one and two phase conductors appear in the standard phase colors. Clicking this button changes the mode of all active Viewer windows.
- To return to feeder coloring mode, click the **View Feeders** button on the Environment Manager. Clicking this button changes the mode of all active Viewer windows.

Searching and Loading Viewer Maps

In order to view a specific geographic area, you must load the map(s) for that area. Devices and objects that are located within that geographic area will display in the drawing area. To load the associated map(s), you can first select an area using the Search dialog box.

Using the Search Tool to Locate Map Areas and Objects

To locate a particular area or object in the Viewer, complete these steps:



1. Click the **Search** button () on the Viewer toolbar. The Search dialog box opens.
2. In the Search dialog box, select the type of search you wish to perform (Exact Match, Wildcard Before, Wildcard After, Wildcard Before and After, Soundex) from the **Search Type** option menu
3. Select the search case option you wish to use (Case Insensitive, Case Sensitive) from the **Search Case** option menu. Case Sensitive means that “elbow” won’t match “ELBOW”.
4. Enter your search result limit in the **Search Result Limit** field (default value is 100).
5. Select the type of object you wish to search for (Feeder, Device, Viewing Area, Account Number, Name, Address, Telephone, Meter Number, Crew, Event).
6. Enter the term you wish to search for in the Enter Search Text field.
7. Click the **Search** button. If there are any matches, a Search Results dialog box displays the search results, and the Search dialog box closes.
8. Select a row in the Search Results dialog box and click the **OK** button. The object appears centered in the Viewer and the Search Results dialog box closes.

If none of the results are what you wanted, click **Cancel** in the Search Results dialog box. The Search Results dialog box closes and the Search dialog box is redisplayed.

Loading Viewer Maps

Once you have located an area or object using the Search dialog box, you can navigate to an adjacent area where the maps are not yet loaded. From here, you can load all the maps that should appear in the drawing area.

To load maps, do one of the following:

- Select Load Maps from the Actions menu, or
- Press the <m> key, or



- Press the **Load Maps** button () on the toolbar.

Unloading Viewer Maps

To unload all maps (not just those in the visible drawing area), do one of the following:

- Select **Unload Maps** from the Actions menu,
- Press the <Shift> + <u> key, or



- Press the **Unload Maps** button () on the toolbar.

Navigating in the Viewer

There are a number of ways to navigate around the Viewer:

- Pan left, right, up, down, or diagonally in the maps using the pan bars.
- Use the **Zoom In** or **Zoom Out** buttons.
- Navigate using your mouse controls.
- Navigate to a device using the **Object Focus** feature.

Navigating Using Mouse Controls

There are various mouse controls you can use to navigate within the Viewer.

Box Zoom allows you to focus in on an object by “boxing in” the area you want to focus on. Move the mouse pointer to one corner of the area that you want to zoom in on and hold down the right mouse button. Then move the pointer to the opposite corner of the area to define the area (note the box indicating the zoom area). Release the right mouse button to complete the process. The specified area expands to fill the Viewer.

The following table shows all of the mouse commands for the Viewer.

To...	Do this...
Select an object	Click the left mouse button.
Select multiple objects	Press and hold the <Shift> key, then click and hold the left mouse button and draw the rectangle around the objects you want to select. This opens a dialog box listing all objects in the selected area.
Define the zoom in area	Click and hold the middle mouse button to begin drawing the rectangle and release it to complete drawing the rectangle.
Zoom out	Click the middle mouse button or scroll the mouse scroll wheel upward (if available).
Zoom in	Press and hold the <Control> key and click the middle mouse button or scroll the mouse scroll wheel downward (if available).
Open the Control Tool window	Double-click the left mouse button on the object.

Object Focus

The object focus feature allows you to focus on a specific device in the Viewer that is associated with a selected device in another window. For example, if you select an event row in the Work

Agenda that has an associated device and click the **Object Focus** () button in the Viewer window, the Viewer finds the selected device, loads the required maps, and adjusts the pan and zoom to show the device in the center of the Viewer drawing area.

To focus on a device, complete these steps:

1. Select the event row in the Work Agenda that has an associated device.

2. Click the **Object Focus** button () in the Viewer.

3. The device associated with the event displays in the Viewer.

Toggling Between Real-Time and Study Mode

Oracle Network Management System applications start in real-time mode, where every action you perform is applied to the real-time model and displayed to all users. Certain windows (the Viewer and the Control Tool) allow you to change to study mode, where your actions are reflected in your study session on your workstation, but not recorded in the real-time model. Study mode is especially useful in “what if” studies, when you need to evaluate the effects of an action before you record it in real-time.

When in real-time mode, the Viewer displays status, topology, and condition information based on real-time operations information. All changes to these items made by any user in real-time mode are reflected on all real-time Viewers in the system.

When in study mode, the Viewer displays only status and topology changes you make on your workstation. Changes made in your study session are not reflected in the real-time model, and likewise changes made in real-time are not reflected in your study session.

A study session is created for a specific workstation the first time you put the Viewer into study mode. The study session is initially created as a copy of the current real-time model. From that point on, changes in the study session and real-time are independent of each other, with the exception that real-time outage and truck symbols will display in study mode. However, these symbols should be ignored since they are not applicable to study sessions. You can reset the study session to current real-time by using the Study Session Control tool. In addition, some Switching Management actions can also cause study session resets. Please refer to the Switching Management chapter for more information.

Note: It is recommended that you reset study session(s) to real-time as often as makes sense (e.g. when starting a new switching plan, testing a new what if scenario, etc.). Especially during high load periods (e.g. a storm), all active study

Switching to Study Mode

To toggle the Viewer to study mode, do one of the following:

- Select **Study** from the Options menu, or
- Click on the  button on the toolbar.

The Viewer window borders change color to gray.

- You can reset the study session to either the current real-time model or the nominal model using the Viewer's **Reset Study Session...** button in the **Options** menu.

Switching to Real-Time Mode

To toggle the Viewer back to real-time mode, do one of the following:

- Select **Real Time** from the Options menu, or
- Click on the  button on the toolbar.

The Viewer window borders and dialog boxes change color back to red.

Selecting Devices

Single Device Selection

To select a single device in the Viewer, simply move the mouse over the desired device and left-click the mouse. The Viewer will select the highest priority device that is closest to the mouse but still within the configured selection-radius. Problems may occur if the selection-radius is set too high and if the area clicked has a multiple devices in close proximity. If that is the case, then you should use box selection to select the device.

Box Selection

To perform a box selection, hold the <Shift> key, left-click the mouse and drag across the Viewer window to create a selection box. In single-select mode, when you release the left mouse button, the Device Selection dialog box appears and is populated with all devices present inside the selection box.

After the Device Selection dialog box appears, simply scroll through the list of device aliases in the dialog, select the desired device and press either the **Select** button to simply select the device, or the **Control Tool** button to select the device and then bring up the Control Tool window for the device.

In Supply Point Selection mode, the Device Selection dialog box does not appear; instead all supply points inside the box are selected. (To enable Supply Point Selection mode, click the **Outage Augmentation** button on the Viewer toolbar.)

Polygon Selection

An advanced form of box selection is polygon selection. To begin a polygon selection, hold down both the <Alt> key and click the left mouse button. This places the first anchor point. Each subsequent Alt-left click adds another vertex. To complete the polygon, hold down Alt and click the right mouse button. This will finish the polygon by connecting the last vertex to the first vertex.

In single-select mode, when you release the right mouse button, the Device Selection dialog box will appear with all devices that were inside the polygon. In Supply Point Selection mode, all supply points inside the polygon are selected. (To enable Supply Point Selection mode, click the **Outage Augmentation** button on the Viewer toolbar.)

Multiple Selections

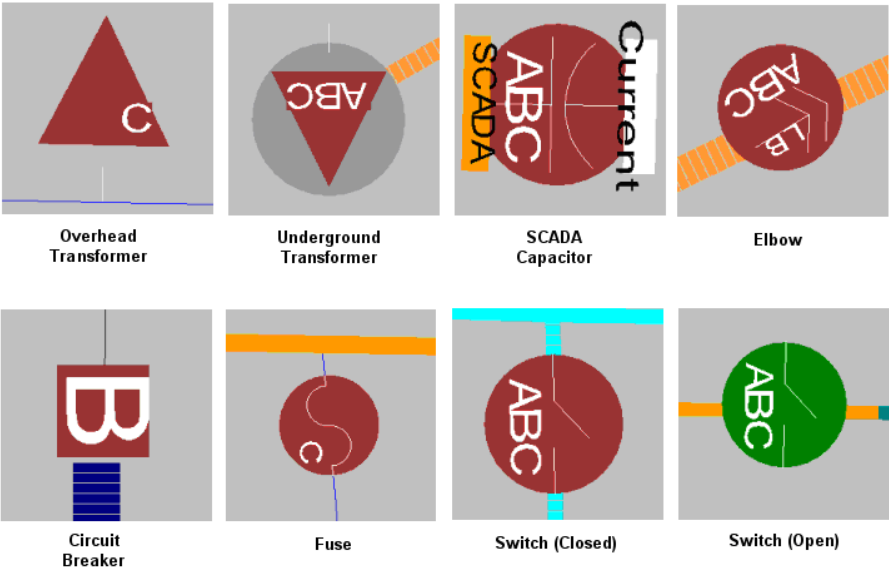
When not in Supply Point Selection mode, only a single device can be selected at any given time. If you are in Supply Point Selection mode, you can modify your existing selection by holding the <Ctrl> key. (To enable Supply Point Selection mode, click the **Outage Augmentation** button on the Viewer toolbar.)

Ctrl-left click on an unselected device will add it to your selection. Control-left click on a selected device will remove it from your selection. Holding the <Ctrl> key while doing a box selection will add any unselected devices in the box.

Identifying Symbolology

Device Symbolology

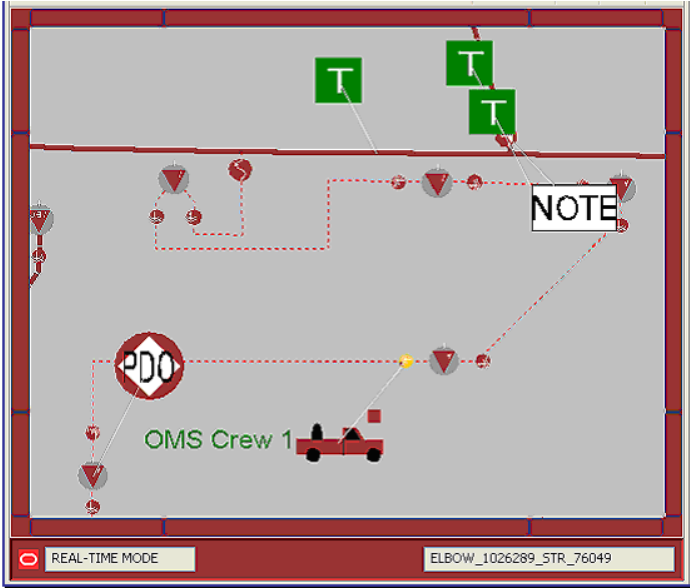
Changes in the status of a device (e.g., switches, fuses, breakers, etc.) are reflected by changes in symbology. For example, an open switch is a different color and shape than a closed switch. Standard device symbology uses certain conventions such as a red or brown device is closed, a green device is open, a large circle around a device indicates off-nominal, etc.



Condition Symbolology

Dynamic conditions on a device (e.g., “predicted service outage,” “crew on-site,” “notes,” etc.) are indicated with specific symbols attached to the device to which the conditions apply.

Condition symbols display in specific areas around a device or object. The following table provides examples of where condition symbols display in relation to the device they are attached to. The following figure displays the Viewer with probable device outage, crew on-site, note and tag conditions.

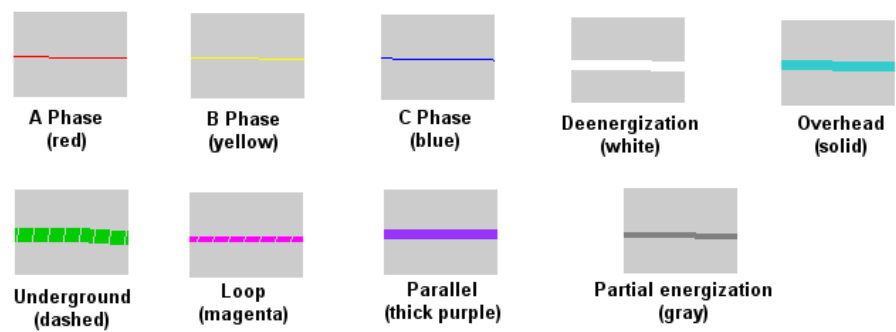


Area	Symbols
Above Left	Tags
Above Right	Probable Service/Device Outages Real Outages

Area	Symbols
Below Left	En route/Onsite Crews
Below Right	Notes Call Clues

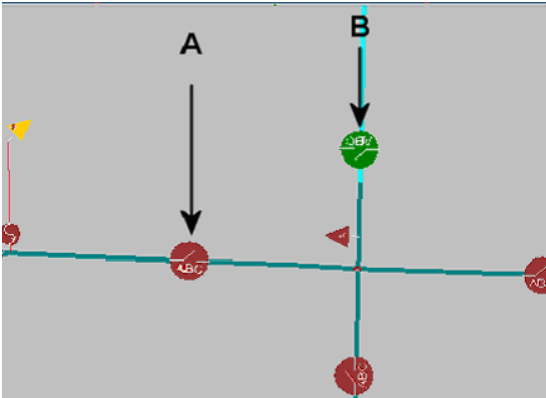
Conductor Symbolology

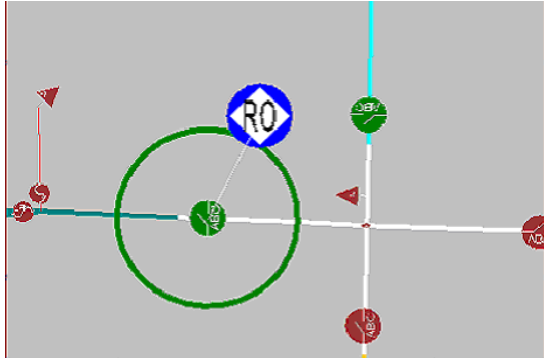
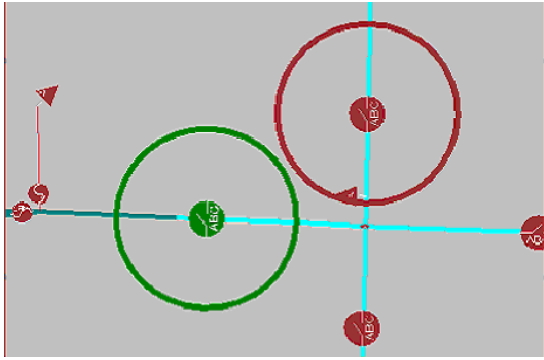
Conductor symbolology changes color, dash patterns, and thickness for different types of conductors and topology states. The figure below shows examples of standard conductor symbolology.



Off-Nominal Status Symbolology

The table below illustrates how symbolology identifies devices in off-nominal states.

Example	Description
	Both devices are identified in their normal states. Device A is normally open while Device B is normally closed.

Example	Description
	When Device B is opened, an outage is created (indicated by the RO symbol) and the downstream circuit is de-energized. The symbol for device B changes from red (closed) to green (open), and a circle appears around it.
	This figure shows both A and B with off-nominal state symbology.

Viewing Big Symbols

To make the symbols for disconnects, breakers, and conditions prominent while zoomed out, click on the Big Symbols button from the Options menu. The symbols remain large even as you zoom out but will still disappear at standard Declutter levels.

Hiding and Displaying Viewer Objects

At times, the maps in the Viewer become cluttered with symbols of all kinds. To help you focus on certain devices or conductors, the Viewer offers a Hide/Display feature that will hide classes of objects. The Hide/Display dialog box allows you to select the objects that you want displayed on the maps in the Viewer.

To change the objects that are displayed in the Viewer, complete these steps:

1. Open the Hide/Display dialog box by clicking on the  button on the Viewer toolbar.
2. Click on the check boxes to designate which objects you want displayed in the Viewer. Objects to be displayed are checked; objects to be hidden are not. Objects include:
 - Landbase - Refers to the display of landbase data from the Map Definition Utility.
 - Landbase Text - Refers to the display landbase text from the Map Definition Utility.
 - Overhead Conductors
 - Underground Cables
 - Electrical

- Supply Nodes
 - Electrical text
 - Measurements - Refers to SCADA measurements. For more information, see **SCADA Measurements on page 13-1**.
 - Declutter - See **Decluttering the Viewer** in the next section for details.
 - Spatial Landbase - Refers to the display of Spatial Landbase data from an Oracle Locator or Oracle Spatial base map defined using Oracle MapBuilder. MapBuilder is a standalone graphical tool for creating and editing styles, themes, and base maps. It replaces the Map Definition Utility that was provided in previous releases.
 - The first drop-down allows you to define the Network Level to display. Options are:
 - All Primary (the default)
 - Backbone Only
 - Primary and Secondary
 - Backbone and Lateral
 - The second drop-down allows you configure the display of Phases. Options are:
 - All Phases (the default)
 - 3-Phase Only
 - Multi-Phase
 - The drop-down allows you to configure the Construction Pending display. Options are:
 - Hide Pending Devices (the default)
 - Show Pending Devices
3. Click the **Refresh** button to refresh the Viewer area based on your settings.
 4. Click the **Close** button.

Decluttering the Viewer

The Viewer automatically hides objects based on pre-defined declutter zoom levels. This allows you to only see high-level information at higher zoom levels, removing small text and other items that are no longer readable at that zoom level. When an object is decluttered, any associated conditions and text will also be decluttered. The declutter option is enabled by default, but you can turn it off by unchecking the Declutter (ON/OFF) option in the Hide/Display dialog box (see previous section for details).

Executing Traces

The trace feature allows you to display the path from a selected device to other devices based on specific criteria. The trace path is displayed on the Viewer by changing all conductors that are part of the path to a thick light blue.

This section includes the following topics:

- **Trace Types**
- **Executing a Trace**
- **Inspecting Direct Connections and Navigating to Connected Objects**
- **Performing Repeated Traces**

For a description of the fields and buttons on the Trace dialog box, see **Using the Trace Dialog Box**.

Trace Types

The following table describes the various types of traces.

Trace Type	Description
All Connected	Traces from the selected device to all connected devices, stopping only at energizing sources.
To Transformer	Traces from the selected device to upstream and downstream transformers.
To Switch	Traces from the selected device to upstream and downstream switches.
To Source	Traces from the selected device to its energizing source.

Using the Trace Dialog Box

Use the Trace dialog box to execute traces of all types.

To display the Trace dialog box, click the **Trace** button on the Viewer toolbar and select an object. The Trace dialog displays the following fields and buttons:

- The first drop-down menu allows you to select the trace type, as described in the table above.
- The second drop-down menu contains the options for the trace direction:
 - **Upstream** - Constrains the trace to be only upstream of the selected device.
 - **Downstream** - Constrains the trace to be only downstream of the selected device.
 - **All** - Allows the trace to be both downstream and upstream of the selected device.

Note: Tracing all connected devices will automatically trace both upstream and downstream. Tracing to source will automatically trace upstream.
- The third drop-down menu allows you to select the trace mode:
 - **Current Session** - Performs the trace by using statuses currently displayed in the Viewer. This is the default.
 - **Nominal** - Performs the trace by assuming nominal statuses for all devices.
- The checkboxes enable you to select specific phase(s) to trace. By default, all available phases on the selected object are checked.

Advanced Trace Dialog Fields

Click the **Advanced**  button in the bottom-right corner of the Trace dialog to display additional information about the selected object, including detailed topology. You can also inspect direct connections and navigate to connected objects.

When you click the Advanced button, the Trace dialog expands to display the following information:

The **Device Details** section displays the following device information:

- Device type
- Device handle
- Network Component Group (NCG)
- Map containing the device
- Display group

The **Symbol Details** section displays the following symbol information:

- Symbolology class
- Symbol ID
- Coloring status
- Valid statuses
- Coloring rule

The **Connectivity Details** section displays the following connection information:

- Feeders
- Current statuses
- Nominal statuses
- Other statuses

The **Connections** section displays a list of connected nodes for the selected object. You can expand the list of connections for each node and focus the Viewer on an object in the list. For more information, see **Inspecting Direct Connections and Navigating to Connected Objects** on page 6-30.

Trace Dialog Toolbar

- The **Trace** toolbar button executes the trace.
- The **Clear** toolbar button erases the trace color from the Viewer and returns to normal color.
- The **Refresh** toolbar button performs the trace again. This is useful if devices have been operated or the model was rebuilt.
- The **Help** toolbar button displays online help for the Trace function.
- The **Exit** toolbar button removes the trace display from the Viewer drawing area and exits the Trace Tool.

Executing a Trace

To execute a trace, complete these steps:

1. Click the **Trace** button on the Viewer toolbar to enter Trace mode.
2. In the Viewer drawing area, select the device you want to trace from. The Trace dialog opens. (See **Using the Trace Dialog Box on page 6-28** for field descriptions.)

3. Select the trace type, direction, mode, and phase(s) for the trace, as described in the following table:

To trace...	Do this...
To all connected devices	Select “All Connected” from the drop-down and then click the Trace button. The Viewer traces from the device to all connected devices stopping only at an energizing source.
To connected transformers	Select “To Transformer” from the first drop-down and select the direction from the second drop-down. Click the Trace button. The Viewer traces from the device to all transformers in the specified direction.
To connected switches	Select “To Switch” from the first drop-down and then select the direction from the second drop-down. Click the Trace button. The Viewer traces from the device to the nearest switch in the specified direction.
To the energizing source	Select “To Source” from the first drop-down. Click the Trace button. The Viewer traces from the device upstream to the energizing source.
A specific phase	Select the phase you want to trace. Select the tracing option (All Connected, To Transformer, To Switch, or To Source) and the direction, then click the Trace button.
Upstream	Select either “To Transformer” or “To Switch” from the first drop-down, and then select “Upstream” from the second drop-down. Click the Trace button.
Downstream	Select either “To Transformer” or “To Switch” from the first drop-down, and then select “Downstream” from the second drop-down. Click the Trace button.
Both upstream and downstream	Select either “To Transformer” or “To Switch” from the first drop-down, and the select “All” from the second drop-down menu. Click the Trace button. (Tracing all connected devices and tracing to the source will automatically trace both upstream and downstream.)
Using statuses currently displayed in the Viewer	Select “Current Session” from the third drop-down menu. Select the tracing option (All Connected, To Transformer, To Switch, or To Source) and the direction, then click the Trace button.
Using nominal statuses	Select “Nominal” from the third drop-down menu. Select the tracing option (All Connected, To Transformer, To Switch, or To Source) and the direction, then click the Trace button.

4. When you have finished tracing, click the **Exit** button on the Trace dialog box.

Inspecting Direct Connections and Navigating to Connected Objects

Use the advanced fields on the Trace dialog to inspect direct connections and navigate to connected objects.

1. Click the **Trace** button on the Viewer toolbar to enter Trace mode.
2. In the Viewer drawing area, select the device you want to trace from. The Trace dialog opens.

3. Click the **Advanced**  button in the bottom-right corner of the Trace dialog. The dialog expands to display detailed connection information.
4. In the Connections box at the bottom of dialog, click the + sign to expand a node and display all connection branches.
5. Right-click a connection row and select **Focus** from the pop-up menu. The Viewer focuses on the object and colors it with the specified color. The Trace dialog displays details for the newly selected object, including a list of its connections. Refer to **Advanced Trace Dialog Fields** on page 6-29 for more information.
6. Repeat steps 4 and 5 needed to inspect more connections.

Performing Repeated Traces

To perform repeated traces:

1. Select different trace options and devices to trace from, using the procedure above.
2. Click the **Exit** button on the **Using the Trace Dialog Box**. The box closes and any current trace lines are cleared.
3. Click the **Trace** button on the Viewer toolbar again to toggle off Trace mode.

Using the Web Workspace Control Tool

The Control Tool, which is a component of Oracle Utilities Network Management System Web Workspace, lets you perform actions on devices. It is typically brought up from the Viewer, although it can also be brought up from an event in the Work Agenda window. The actions you can perform on devices include tagging a device, placing a note on a device, re-predicting an outage upstream or downstream from a device, and opening and closing a device.

Control Tool topics include:

- **Understanding the Control Tool**
- **Operating Devices**
- **Tagging Devices**
- **Placing Grounds**
- **Disabling ATOs**
- **Highlighting Events in the Work Agenda**
- **Repredicting Upstream/Downstream**
- **Repredicting Upstream/Downstream**
- **Viewing Associated Customers**
- **Using Notes**
- **Viewing Device Attribute Information**
- **Toggling Call Display**
- **Viewing Associated Customers**
- **Viewing AMR Customers**
- **Placing Jumpers**
- **Using the Look Ahead Window**
- **Associating Documents to Devices**

For related topics, see also:

- **Using SCADA Control Tool Features** on page 13-8
- **Web Switching Management** on page 15-1
- **Working with Safety Documents** on page 15-53

Understanding the Control Tool

The Control Tool lets you perform device operations based on the current status of the device. For example, if a device is already open, you can close it. If the device is closed, you can open it. You can operate all or some of the phases of a device (if the device is a multi-phase device).

You can access the Control Tool in two ways:

- Access the Control Tool from the Viewer by clicking the  button on the Viewer toolbar. This puts you in Control Tool mode. Select a device by clicking on the device symbol (with the left mouse button) in the Viewer. If you click on the drawing area of the Viewer without selecting a device, the system selects the nearest device. You may also access the Control Tool from the Viewer by simply double-clicking on a device.

- Access the Control Tool from the Work Agenda window by right-clicking on an event with an associated device and selecting **Show Control Tool** from the pop-up menu. The Control Tool will open for the device associated with that event.

The options that appear on the Control Tool differ depending on the type of device that the Control Tool was opened from (cable/conductor vs. actual device such as a transformer, fuse, etc.).

The name of the device is displayed at the top of the Control Tool.

Control Tool Options

Control Tool operations and functions are performed by clicking the buttons displayed on the Control Tool window. The following table describes the Control Tool buttons and the actions they perform.

Option	Description
Operations...	Allows you to perform the following operations on a device: Open, Close, Instruct Open, Instruct Close, Open and Tag, Instruct Open and Tag, Remove Tag and Close Device, Instruct Remove Tag and close, and Undo Open.
Tag/Flag...	Allows you to Place Tag, Instruct Place Tag, Remove Tag, and Instruct Remove Tag.
Ground...	Allows you to Place Ground, Instruct Place Ground, Remove Ground, and Instruct Remove Ground.
Highlight Event	Displays the event in the Work Agenda. You must have the correct view of the Work Agenda window open in order to see the highlighted event (e.g., the In Progress list).
Repredict Upstream	Allows you to manually repredict the outage to the next predictable upstream device.
Repredict Downstream	Allows you to manually repredict the outage to the next predictable downstream device.
View Documents...	Allows you to view documents associated with devices.
Note...	Allows you to place notes on devices.
Attributes...	Displays the Device Attributes window, which lists information about the selected device's properties.
Toggle Call Display	Toggles the call display on or off. When enabled, a symbol is displayed in the Viewer window for any transformers that have calls associated with the event. This option is only available on Control Tool windows that are opened from a predictable outage device, such as a switch or fuse, which has an open associated event.
Customer List...	Displays the customers downstream from a device.

Option	Description
AMR Customer List...	Displays the AMR meters downstream from a device.
Switching Plan(s)	Allows you to open switching plans and safety documents associated with the device. If multiple documents or plans are associated with a device, a dialog box opens displaying a selection list. See Web Switching Management on page 15-1 for more information.
Safety Document(s)	Allows you to open safety documents associated with the device. See Working with Safety Documents on page 15-53 for more information.
Operate Phases	Allows you to operate all or specific phases of a device by toggling All or any combination of A, B, and C phases. Any phases not applicable to the device are disabled (e.g., the Control Tool for an A phase transformer will have B and C disabled).
Date and Time	Allows you to record the date and time an operation was performed. The field defaults to the current date and time, but you can adjust the date using the up and down arrow buttons next to the field. The date and time of the operation displays in the Event Recorder window. Note that this will also affect reported outage times.
Exit	Closes the Control Tool.

Operating Devices

You can open or close a device in the Viewer to reflect the current state of the device in the field. The device operations you can perform depend on the status of the device. For example, a Control Tool window opened from an open device will only allow you to close the device. In Real-Time mode, you must have authority over the control zone where the device is located in order to operate the device. If a device has multiple phases and you only want to open or close one of the phases, you can select which phase you want to operate by using the toggle buttons on the right side of the Control Tool. Only phases present for the device that the Control Tool was opened from are displayed (e.g., the Control Tool for an A phase transformer will display B and C phases). A label above the Operate Phases section indicates which phases are currently closed.

Note: Step-by-step instructions are presented in the following sections for common operations. Separate instructions are not provided for the Instruct versions of operations, such as Instruct Open and Instruct Close.

Opening a Device

To open one or more phases on a device:

1. Do one of the following:

- In the Viewer, ensure that the  button is selected, indicating that you are in Control Tool mode. Click on the closed device that you want to open.
- In the Viewer, double-click on the closed device you want to open.

The Control Tool opens.

2. Select the phase or phases that you want to open by placing a check mark in the check box alongside the phase. If you wish to open all closed phases, you may leave ALL selected (which is the default).

3. Click the **Open** button. The selected phase(s) for the device open. If no phase is selected, an error message displays.

Closing a Device

To close one or more phases on a device:

1. Do one of the following:
 - In the Viewer, ensure that the  button is selected, indicating that you are in Control Tool mode. Click on the open device you want to close.
 - In the Viewer, double-click on the open device you want to close.

The Control Tool opens.

2. Select the phase or phases you want to close by placing a check mark in the check box alongside the phase. If you wish to close all open phases, you may leave ALL selected (which is the default).
3. Click the **Close** button. The selected phase(s) for the device close.

Undoing the Open Operation

You can undo an Open operation, which is different than closing a device. With the Undo Open operation, any RDO that would have been restored will revert back to a predicted outage. As a result, no restore time is set for the associated job and the job remains active.

Tagging Devices

You can tag devices in the Viewer window that are physically tagged in the field. Tags placed on devices in the system prevent users from performing open or close operations on the device. When you place a tag on a device, a tag symbol appears attached to that device in the Viewer. You can place multiple tags on a single device. When you do, the number of tags on the device appears in parentheses next to the tag in the Viewer. You must have authority over the control zone where the device is located in order to tag the device.

Placing a Tag

To place a tag on a device:

1. Do one of the following:
 - In the Viewer, ensure that the  button is selected, indicating that you are in Control Tool mode. Click on the device that you want to tag.
 - In the Viewer, double-click on the device you want to tag.

The Control Tool opens.
2. Click the **Place Tag** button. A tag symbol displays next to that device in the Viewer. If a tag symbol already existed (the device had at least one current tag), a number in parentheses next to the tag symbol will indicate the updated current number of tags.

Removing a Tag

To remove a tag from a device:

1. Do one of the following:
 - In the Viewer, ensure that the  button is selected, indicating that you are in Control Tool mode. Click on the device that has the tag.

- In the Viewer, double-click on the device that has the tag.

The Control Tool opens.

2. Click the **Remove Tag** button. The Remove Tag dialog box opens, displaying a list of the tags on that device, including when the tag was placed and the user who placed it.
3. Select the row of the tag you want to remove and click the **Remove** button. The tag is removed. The number next to the tag symbol is decreased by one, unless there is now only one tag left, in which case the number is removed. If the last tag is removed, the tag symbol is removed from the Viewer.

Placing Grounds

When you open a Control Tool window from certain devices or conductors (e.g., fuse or wire), the ground function is available. Grounding a device grounds all parts of the circuit connected to the grounding point. The Look Ahead window warns you if the grounding action will create a live, grounded circuit. The grounded circuit is highlighted in the Viewer and indicated by a grounding symbol at the selected device or midpoint of the selected conductor.

Grounding a Device

To ground a device, complete these steps:

1. Open a Viewer window and load the map that contains the device you want to ground.
2. Double-click on the device. The Control Tool window opens.
3. Click on the **Ground...** button and select Place Ground from the drop-down menu. A Select Secondary Object dialog box appears.
4. Click on the conductor attached to the device on the side you want to ground and the name of that conductor will appear in the dialog box.
5. Click **OK** to proceed with the ground.

If you are grounding a live conductor, a warning box opens indicating that you are about to “ground a live section.” Click the **OK** to Operate Device button to proceed with the grounding action (a grounding symbol appears in the Viewer on the device), or click the **Cancel** button to abort the grounding action.

Removing a Ground from a Device

You can only remove a ground from the device or conductor on which the grounding was applied. To remove a ground from a device, complete these steps:

1. Open a Viewer window and load the map that contains the grounded device.
2. Double-click on the device. The Control Tool window opens.
3. Click on the **Ground...** button and select Remove Ground from the drop-down menu. A Select Secondary Object dialog box appears.
4. Click on the conductor attached to the device on the side with the ground you want to remove. The alias of that conductor appears in the dialog box.
5. Click **OK**. The grounding symbol is removed from the Viewer.

Disabling ATOs

When you open a Control Tool window from a Primary or Secondary ATO switch, the ATO Disable function is available. Disabling either ATO switch prevents the system from automatically throwing-over or auto-returning the pair of switches.

Placing a DISABLED Condition

To place a tag on a device:

1. Do one of the following:
 - In the Viewer, ensure that the  button is selected, indicating that you are in Control Tool mode. Click on the ATO switch that you want to disable
 - In the Viewer, double-click on the ATO switch you want to disable.

The Control Tool opens

2. Click on the **Disable ATO** button.
3. A DISABLED condition will appear on the ATO switch.

The ATO switches can now be operated manually, and energization can change, and the system will not automatically operate either ATO switch.

Removing a DISABLED Condition

To re-enable the ATO switch:

1. Do one of the following:
 - In the Viewer, ensure that the  button is selected, indicating that you are in Control Tool mode. Click on the ATO switch that has the DISABLED condition.
 - In the Viewer, double-click on the ATO switch that has the DISABLED condition.

The Control Tool opens.

- Click on the **Enable ATO** button. The DISABLED condition will disappear from the ATO switch.

Once both ATO switches are enabled, the system will once again set the ATO switches to their correct positions, based on the energization.

Highlighting Events in the Work Agenda

If an event is associated with a selected device, you can find it in the Work Agenda window using the **Highlight Event** button on the Control Tool. You must have the correct view of the Work Agenda window open in order to see the highlighted event (e.g., the In Progress list).

Note: If there are multiple events associated with a device, only the first one found will be highlighted.

Repredicting Upstream/Downstream

You can force the system to manually repredict a predicted outage either upstream or downstream from the current system predicted device. This is typically done when a crew finds that the problem is not at the predicted device.

- If the device is energized, the problem is actually one or more downstream outages.
- If the device is de-energized, the problem will actually be upstream.

Clicking the **Repredict Upstream** or **Repredict Downstream** button manually repredicts the outage to the next predictable upstream or downstream device. When repredicting downstream, the system distributes the event to one or more devices. Once a predicted outage is manually repredicted upstream or downstream, the system will treat the repredicted outages as non-grouping and no longer automatically repredict them.

For example, a crew finds that a predicted service outage (indicated by the “PSO” symbol) at a transformer is not actually where the trouble is located. Using the Control Tool window, you can repredict the outage upstream to the switch. When you repredict the outage, the switch displays a “PDO” (predicted device outage) symbol. The original predicted service outage displayed in one of Work Agenda’s Trouble Events list windows changes to a predicted device outage located at the switch.

Viewing Documents Associated with a Device

To view documents associated with a device, complete these steps:

1. Open a Viewer window. Locate a device that has an associated document you wish to view. (The device will display a document condition, which indicates that a document is related to the object.)
2. Double-click on the device to bring up the Control Tool.
3. Select the **View Documents...** option from the Control Tool.
 - If only one document is associated with the device, the document appears in a separate window.
 - If there is more than one document associated with the device, the non-administrative version of the Associated Documents window appears, listing each associated document for the selected device.
 - Select the document you wish to view, and then click on the **View Document** button. The document will appear in another window.
 - Click the **Quit** button to exit the Associated Documents window.

For instructions on associating documents to devices, see **Associating Documents to Devices on page 6-47**. Note that this function is available only to administrative users.

Using Notes

The Control Tool window allows you to place notes on devices. Open the Device Notes dialog box from the Control Tool by clicking the **Note...** button. All notes for the selected device are listed in the Notes field. You can add or edit note text in the Note Text field.

The Device Notes dialog box displays the following fields and buttons:

- The **Object** field displays the object class of the device.
- The **Object Name** field displays the name or ID of the device.
- The **Notes** field lists the notes that have been entered for the device with an indication of who and when.
- The **Note Text** field displays the text of the selected note.
- The **New** button allows you to enter a new note for the device.
- The **Edit** button allows you to edit the text of the selected note.
- The **Delete** button deletes the selected note.
- The **Refresh** button refreshes the Device Notes dialog box. It will show any notes for the device created by another user after you opened the Device Notes dialog box.

- The **Exit** button closes the Device Notes dialog box.

Creating a Note

You can create one or more notes for a device using the Control Tool window. Once you save a note, a note symbol displays in the Viewer window next to the device. If you create multiple notes for a device, the number of notes is displayed in parentheses next to the note symbol.

To enter a note, complete these steps:

1. In the Viewer, open the Control Tool for the device that you want to enter the note for.
2. On the Control Tool, click the **Note...** button. The Device Notes dialog box opens with the name of the device listed at the top.
3. Click the **New** button. The Note Text field changes to an Add/Edit Text field.
4. Click in the Add/Edit Text field and enter the note text.
5. Click **Save**. The note is saved. The note number, user name, and the date and time that you saved the note displays in the Notes field. A note symbol appears in the Viewer next to the device. If a note symbol already existed, a number appears in parentheses next to the note symbol with the current number of notes.
6. Click **Exit** to close the Device Notes dialog box.

Editing a Note

After you have created and saved a note, you can view and edit it. All notes for the selected device are listed in the Notes section of the Device Notes dialog box. To edit a note, complete these steps:

1. In the Viewer, open the Control Tool for the device that contains the note you want to edit.
2. On the Control Tool, click the **Note...** button. The Device Notes dialog box opens with the name of the device listed at the top and the note(s) listed in the Notes field.
3. Select the note that you want to edit. The current note text will display in the Note Text field.
4. Click the **Edit** button. The Note Text field changes to an Add/Edit Text field.
5. Click in the Add/Edit Text field and edit the note text as needed.
6. Click **Save**. The note is saved.
7. Click **Exit** to close the Device Notes dialog box.

Note: The Notes field at the top will continue to show the original author and creation time.

Deleting a Note

You can delete a note once it no longer applies to the device or the event. To delete a note, complete these steps:

1. In the Viewer, open the Control Tool for the device that contains the note you want to delete.
2. On the Control Tool, click the **Note...** button. The Device Notes dialog box opens with the name of the device listed at the top and the note(s) listed in the Notes field.
3. Select the note that you want to delete.
4. Click the **Delete** button. The note is deleted from the Device Notes dialog box. If it was the only note for the device, then the note symbol disappears from the Viewer. Otherwise, the number in parentheses next to the note is decreased (or removed if it becomes 1).
5. Click **Exit** to close the Device Notes dialog box.

Viewing Device Attribute Information

You can access attribute information related to a device using the Control Tool. Device attributes include physical and reference information about a device, such as location and rating. To view device attributes, complete these steps:

1. In the Viewer, make sure that the  button is selected, indicating that you are in Control Tool mode. Click on a device in the Viewer.
Or,
Double-click on a device in the Viewer.
The Control Tool opens.
2. Click the **Attributes...** button on the Control Tool. The Device Information window opens.

Note: The information in the Device Information window is view-only.

Toggling Call Display

You can view the calls associated with an event in the Viewer window by clicking the **Toggle Call Display** button. A symbol appears attached to any transformers serving customers that have calls associated with the event. If there were multiple calls with the same “clues” then a number will appear in parentheses next to the call symbol. To hide the symbols, open the Control Tool window from the device and click the **Toggle Call Display** button again.

Viewing Associated Customers

To view the customers on and downstream from a device, click the **Customer List...** button on the Control Tool. The Customers view of the Trouble Info window opens, listing all customers on and downstream from the device.

Note: You cannot toggle over to the Calls view when you open the Trouble Info window from this Customer List option.

Viewing AMR Customers

To view the AMR meters downstream from a device, click the **AMR Customer List...** button on the Control Tool window. The AMR Customers view of the Trouble Info window opens, listing all AMR meters downstream from the device. The information displayed includes the device, phases, customer name, address, phone number and account number of the customer, as well as recent meter ping information. From this page, you can initiate a ping request, as well as monitor previous ping results

Placing Jumpers

In addition to creating an open point, you can insert a jumper on an overhead conductor or between overhead conductors. You can also place emergency cables between underground devices. The jumper is an active part of the model and fully operable. You can open and close a jumper as well as place tags and notes on the jumper.

The following table describes the different jumper types.

Jumper Type	Description
In-line Jumper	In-line jumpers are placed in line. The position for the jumper is set to “closed” to maintain a continuous conductor. A closed jumper symbol displays at the midpoint of the selected conductor.

Jumper Type	Description
P-P Jumper / Emergency Cable	Point-to-point jumpers are placed between a selected conductor and the same phase on any other conductor. A dialog box allows you to specify the second conductor. You can select the conductor in the Viewer window. A point-to-point jumper symbol displays at the midpoints of the selected conductors. The default state for the inserted jumper is “open.”
P-P Cross Phase	Point-to-point cross phase jumpers are placed between different phases on two different conductors. The Cross Phase Selection dialog box allows you to select a live phase and the phase to pick up. The Select Secondary dialog box allows you to specify the second conductor. You can select the conductor in the Viewer window. A point-to-point jumper symbol displays, connecting the midpoints of the selected conductors. The default state for the inserted jumper is “open.”
Tap Generator	Tap Generators are used to add an energization point to the model. A Selection Required dialog box allows you to specify the tap location by clicking on the location in the Viewer.

Inserting a Jumper

After the crew informs you what type of jumper they will insert, you can make the change in the system. To insert a jumper, complete these steps:

1. Open a Viewer window and load the map that contains the conductor where you want to place the jumper.
2. Double-click on the conductor. The Control Tool window opens.
3. Select the appropriate button for the type of jumper you want to insert.
 - If you are placing a point-to-point jumper, point-to-point cross phase, or emergency cable, the Select Secondary dialog box opens. Continue with the next step.
 - If you are placing an in-line jumper, skip to step 5.
4. Select another conductor (in the Viewer window), and then click **OK**. Wait a moment as the system updates the model.
 - If you are placing a point-to-point cross phase, the Cross Phase Selection dialog box opens. Select a phase for each device, and click **OK**.
 - Otherwise, skip to the next step.
5. Click **Yes** in the Map Load Confirmation dialog box if you want to reload the map. The Viewer window displays the jumper.

Operating a Jumper

Like devices, you can open and close (Disconnect and Connect) jumpers. To open or close a jumper, complete these steps:

1. Open a Viewer window and load the map that contains the jumper you want to operate.
2. Double-click on the jumper. The Control Tool window opens.
3. Select the desired phases from the Phases panel, then click the operation you want to perform, either **Disconnect Jumper** or **Connect Jumper**.

Removing a Jumper

Once a jumper has been removed in the field, you can remove the jumper from the system. This removes the jumper and fully restores the conductor. To remove a jumper, complete these steps:

1. Open a Viewer window and load the map that contains the jumper you want to remove.
2. Double-click on the jumper. The Control Tool window opens.
3. Click the **Remove Jumper** button on the Control Tool window. Wait a moment as the system updates the model.
4. Click **Yes** in the Map Load Confirmation dialog box if you want to reload the map. The Viewer window displays the jumper.

Placing/Performing a Tap Edit

To perform a tap edit:

1. Open a Viewer window.
2. Load the map containing the conductor where you want to place the jumper.
3. Double-click on the conductor. The Control Tool window opens.
4. Select the **Tap Generator** button
5. Select a location in the Selection Required dialog box and click **OK**. The model edit is performed and a new energization point appears in the map at the selected spot.

Using the Look Ahead Window

The Look Ahead window provides information concerning the results of performing a requested device operation. The Look Ahead window uses system status and topology tracing to “look ahead” of the requested operation and determine its consequences.

The Look Ahead window displays whenever a switching operation is initiated from the Control Tool in energized or de-energized portions of the distribution system. After determining the consequences, the Look Ahead window either displays the appropriate dialog box or gathers additional data for display. You can use the information displayed in the Look Ahead window to decide whether to continue with the operation.

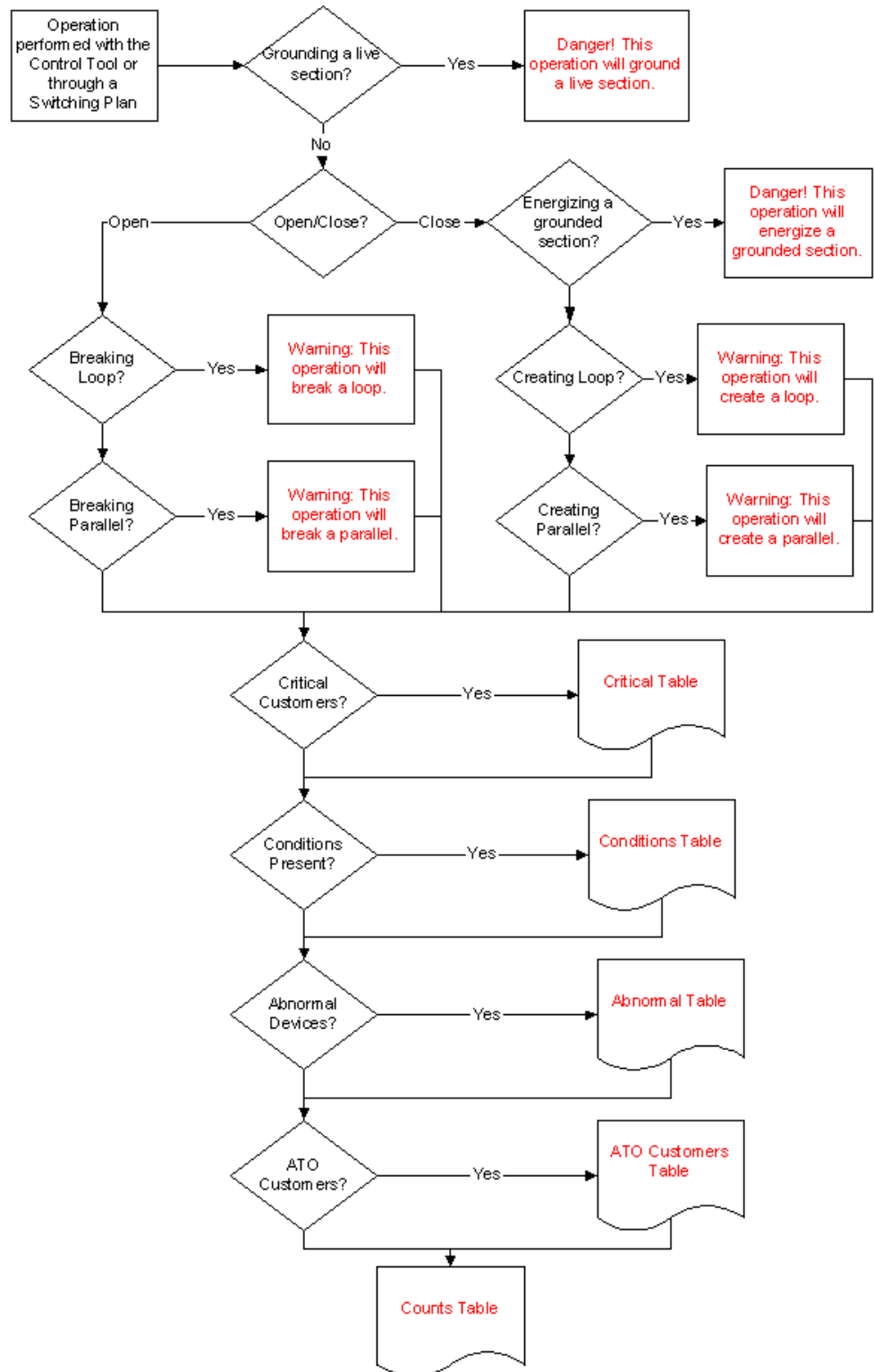
This section includes the following topics:

- **Understanding the Look-Ahead Process**
- **Drop Counts**
- **Pickup Counts**
- **ATO Customers**
- **View Conditions**
- **View Abnormal**
- **View Critical**

Understanding the Look-Ahead Process

The Look Ahead window uses status and topology tracing to “look ahead” of the requested operation and determine its consequences. Based on this information, you can decide whether to continue with an operation.

The flow diagram below shows the basic logic of the Look Ahead window.



The Look Ahead window displays a warning if an operation will create or break loops or parallels. When dealing with loops and parallels, count, condition, and abnormal device information is not available.

The Look Ahead window displays whenever a switching operation is initiated from the Control Tool in energized, as well as de-energized, portions of the distribution system. If the operation will energize or de-energize the system, additional data is gathered and displayed in the Look Ahead window.

The information displayed depends on the results of performing the operation. A tab is enabled only if table information is available. You cannot open or close a device until you view any abnormal devices or conditions (see **View Abnormal** on page 6-46).

Note: If you attempt to open a switch in a deenergized area, the system displays the Create Nested Outage dialog box before displaying the Look Ahead window. Do one of the following:

- Click **Yes** to create a nested outage.
- Click **No** to open the switch without creating a nested outage.
- Click **Cancel** to cancel the operation.

The Look Ahead Window

The Look Ahead window contains tabs and tables that display event- and device-related information. The items on the Look Ahead window are described below:

Header

- The **Device** field displays the name of the device being operated.
- The **Phase(s) to Operate** field displays the phase(s) of the device being operated.

Tabs

- The **Drop Count** tab displays the number of customers that will be dropped if the switching action is completed. See **Drop Counts** on page 6-45.
- The **Pickup Count** tab displays the number of customers that will be picked up (restored) if the switching action is completed. See **Pickup Counts** on page 6-45.
- The **ATO Customers** tab allows you to view all customers who will be affected momentarily by a resulting ATO operation. If no momentary outages will result from the proposed operation, this tab is disabled. See **ATO Customers** on page 6-45.
- The **View Conditions** tab displays any special conditions (e.g., notes, crews) that are present upstream or downstream of the device. This tab is only enabled if special conditions exist. See **View Conditions** on page 6-46.
- The **View Abnormal** tab displays any abnormal devices on the device feeder. This tab is only enabled if abnormal conditions exist. See **View Abnormal** on page 6-46.
- The **View Critical** tab displays the critical customers affected by the device operation. See **View Critical** on page 6-46.

Buttons

- The **Open** button opens the device. If an “open” operation is being performed on a closed device, the Open button is enabled. If special conditions exist, then you must view the View Conditions tab before the Open button becomes enabled. Likewise, if abnormal device statuses exist, then you must view the View Abnormal tab before the Open button becomes enabled.
- The **Close** button closes the device. If a “close” operation is being performed on an open device, the Close button is enabled. If special conditions exist, then you must view the View Conditions tab before the Close button becomes enabled. Likewise, if abnormal device

statuses exist, then you must view the View Abnormal tab before the Close button becomes enabled.

- The **Cancel** button cancels the device operation and closes the Look Ahead window.

Drop Counts

The Drop Counts tab displays the number of customers affected by the device operation. This tab provides information for Total Customers and total Critical Customers, with sub counts for three types of critical customers.

- The **Drop** columns display the drop information for the device. Information is displayed as counts dropped downstream of the device.
- The **Feeder** columns display the total counts for the feeder on which the device to operate is located.
- The first set of Drop and Feed columns shows data for the total counts.
- The following three sets (A, B, and C) show data for each individual phase.
- The last set shows counts for 3 phase customers. The counts for the individual phases (A, B, C) and 3-phase add up to the counts in the first or total columns (i.e., $A+B+C+3=Total$).

Pickup Counts

The Pickup Counts tab displays the number of customers affected by the device operation. This tab provides information for Total Customers and total Critical Customers, with sub counts for three types of critical customers.

- The first set of two columns shows data for the total counts. The following three sets of two columns show data for each individual phase (A, B, and C), with the last set showing counts for 3 phase customers. The counts for the individual phases (A, B, C) and 3-phase will add up to the counts in the “total” columns (i.e., $A+B+C+3=Total$).
- The **Pickup** columns display the pickup information for the device. Information is displayed as counts picked up downstream of the device.
- The **Feeder** columns display the total counts for the feeder on which the device to operate is located.

ATO Customers

The ATO Customers tab displays the number of customers affected by automatic ATO operations as a result of the device operation. These customers are not listed in the Counts table.

On loss of the primary feed:

- The ATO Customers page lists customers downstream from a pair of enabled ATO switches with a live secondary feed, because they will experience a momentary outage.
- The ATO Customers page does not list customers downstream from a pair of ATOs if either the primary or secondary switch is disabled. These customers appear on the Counts table, because they will experience a sustained outage.
- The ATO Customers page does not list customers downstream from a pair of ATOs if the secondary feed is already lost. These customers appear on the Counts table, because they will experience a sustained outage.

On restoration of the primary feed:

- The ATO Customers page lists de-energized customers who will be auto-returned if the secondary feed is already lost.
- The ATO Customers page lists currently energized customers who will be auto-returned if the ATO is configured as a “break before make” on auto-return.

- The ATO Customers page does not list currently energized customers who will be auto-returned if the ATO is configured as a “make before break” on auto-return.

Similarly to the Counts table, the ATO Customers table provides information for total Critical Customers with sub counts for three types of critical customers, Interrupting Current (phase), and Total Customers.

The first column shows data for the total counts. The following three columns show data for each individual phase (A, B, and C), with the last set showing counts for 3 phase customers. The counts for the individual phases (A, B, C) and 3-phase will add up to the counts in the “total” columns (i.e., $A+B+C+3=Total$).

The rows displayed in the counts table include Crit Customers, EMR Customers, MED Customers, KEY Customers, Interrupting Current and total customers. Click on the **View ATO Custs** button to access ATO Customer information from any of the other views.

View Conditions

The View Conditions tab shows any special conditions currently active on the circuit, including crew locations, tags, notes, etc. If conditions are present, you must view the conditions table to complete the operation. Click on the View Conditions tab to access condition information.

The Conditions table displays the following columns:

- The **Condition** column displays the type of condition that is present on the feeder such as a truck_location (crew), tag, note, etc.
- The **Device** column displays the name of the device on which the condition is located.
- The **Location** column indicates whether the condition is upstream or downstream of the current device.
- The **User Name** column displays the user name of the user that created the condition.
- The **Date/Time** column displays the date and time that the condition was created.

View Abnormal

The View Abnormal tab displays data about abnormal devices on the same feeder as the device to operate. An “abnormal device” is any device that is not in its nominal state (e.g., an open device that is normally closed).

The Alarms and Devices table displays the following columns:

- The **Device** column displays the name of the device that is in an abnormal state.
- The **Nominal Status** column displays the normal status of the device.
- The **Current Status** column displays the current status of the device.

View Critical

The View Critical tab shows customers classified as critical (e.g., emergency, medical, key) that would be impacted by the proposed device operation.

The Critical Customers table displays the following columns:

- The **Name** column displays the critical customer’s name.
- The **Address** column displays the critical customer’s address.
- The **Phone** column displays the critical customer’s telephone number.

Associating Documents to Devices

The Associated Documents window allows you to associate devices in the electrical topology model with various documents, as well as to view those associated documents.

Note: This feature is available only to administrative users. Non-admin users can only view associated documents. See **Viewing Associated Documents on page 6-48** for details.

This section includes the following topics:

- **Using the Associated Documents Window**
- **Associating a Document With a Device**
- **Removing a Document Association**
- **Viewing Associated Documents**

Using the Associated Documents Window

To open this window, click the **Misc Tools...** button on the Environment Manager, then select the **Manage Documents** option.

The Associated Documents window displays the following fields and buttons.

- The **Selected Device** field lists which device is presently selected in the Viewer, as well as which documents are presently associated with the device, if any.
- The **Unassociate** button allows you to remove the association of the selected document with the selected device.
- The **View Document** button allows you to view the selected document for the selected device.
- The **Available Documents** field lists all of the contents of the \$CES_DRAWINGS directory. Use the blank text field to filter the Available Documents list. (Type all or part of the document you are looking for. The list is dynamically updated to display documents names that include the text you enter.)
- The **Associated Devices** field lists which devices have an association with the currently selected item in the Available Documents list.
- The **Associate** button allows you to associate the currently selected item in the Available Documents list with the Selected Device.
- The **View Document** button allows you to view the currently selected item in the Available Documents list.
- The **Exit** button closes the Associated Documents window.

Associating a Document With a Device

Note: This feature is available only to administrative users. Non-admin users can only view associated documents. See **Viewing Associated Documents on page 6-48** for details.

To associate a document with a device, complete these steps:

1. Login to Web Workspace as an Administration user. The Administration Environment Manager appears.
2. Click the **Misc Tools...** button, then select **Manage Documents**. The Associated Documents window opens. (See the previous section for field descriptions.)
3. Open a Viewer window. Locate the device you wish to create an association for, and select that device in the Viewer. The Associated Document window's Selected Device field populates with the name of the selected device.

4. Select the item from the Available Documents list that you wish to associate with the selected device. The Associate and View Document buttons are now sensitized.
5. Click the **View Document** button to see the selected document. The selected document appears in a new window.
6. Click the **Associate** button to create the association between the selected document and selected device. The following occurs:
 - The field below the selected device populates with the name of the selected document, and the Associated Devices field populates with the name of the selected device.
 - In the Viewer window, a document condition now appears on the selected device.
7. Click the **Quit** button to exit the Associated Documents window.

Removing a Document Association

Note: This feature is available only to administrative users. Non-admin users can only view associated documents. See **Viewing Associated Documents on page 6-48** for details.

To remove an association between a document and a device, complete these steps:

1. Login to Web Workspace as an Administration user. The Administration Environment Manager appears.
2. Click the **Misc Tools...** button, then select **Manage Documents**. The Associated Documents window opens.
3. Open a Viewer window. Locate the device you wish to remove an association for, and select that device in the Viewer. The Associated Documents window's Selected Device field populates with the name of the selected device, and the field below populates with all of the documents associated with that device.
4. In the field below the Selected Device, select the document you wish to disassociate from the device. The Unassociate and View Document buttons are now sensitized.
5. Click the **View** button to see the selected document. The selected document appears in a new window.
6. Click the **Unassociate** button to remove the association between the selected document and selected device. The following occurs:
 - The selected document is removed from the field below the Selected Device.
 - In the Viewer window, a document condition is removed from the selected device.
7. Click the **Quit** button to exit the Associated Documents window.

Viewing Associated Documents

Administrations can view associated documents from the Associated Documents window while logged in to the Administration environment (see **Associating a Document With a Device on page 6-47**). Non-administrative users can view documents from the Control Tool. See **Viewing Documents Associated with a Device on page 6-38**.

Viewing Summaries

Oracle Utilities Network Management System Web Workspace includes windows that provide summary information for data in the system:

- **Note Summary**
- **Tag Summary**
- **SCADA Summary**

Note Summary

The Note Summary lists all notes that have been entered into the system. Notes are attached to devices via the Control Tool.

This section includes the following topics:

- **Using the Note Summary Window**
- **Using the View Balloon Dialog Box**
- **Editing a Note**

Using the Note Summary Window

To view the Note Summary, click the **Summaries...** button on the Environment Manager and then select **Note Summary**. The Note Summary includes the following fields and buttons:

- The **Last Updated** field shows the date the note was last changed.
- The **Note #** column contains the unique number of the note attached to the device.
- The **Date Created** column contains the date and time the note was created.
- The **User** column contains the user name of the individual who placed the note.
- The **Substation** column contains the name of the substation that serves the device on which the note is located.
- The **Feeder** column contains the name of the feeder that serves the device on which the note is located.
- The **Device** column contains the name of the device on which the note is located.
- The **Note Info** column contains the note text.

Toolbar and Menu Options

- The **Refresh** button  refreshes the Note Summary to display the most recent updates. If you edit a note (using the Edit button), you must refresh the Note Summary to display the changes. The Refresh option on the File menu performs the same function.
- The **Print Preview** button  displays the Print Preview window, from which you can view and print the note summary. The Print Preview option on the File menu performs the same function. For more information about using the Print Preview window, see **Printing on page 6-14**.
- The **Delete** button  deletes the selected note from the system. A confirmation dialog box prompts you to confirm before deleting. Once deleted, the note disappears from both the Note Summary and the Viewer. The Delete Row option on the File menu performs the same function.

- The **Sort** button  displays the Sort dialog box. The Sort Dialog option on the Sort menu performs the same function. See **Using the Sort Dialog Box on page 6-5** for more information.
- The **Filter** button  displays the Filter dialog box. The Filter Dialog option on the Filter menu performs the same function. See **Using the Filter Dialog on page 6-6** for more information.
- The **Edit** button  opens the Edit balloon so you can edit the note text. The Edit option on the Actions menu performs the same function. See **Editing a Note on page 6-39** for more information.
- The **Balloon Details**  button enables or disables balloon details for the note. When this is enabled, clicking a note brings up the View balloon dialog box, which displays the note text and provides additional options. The Enable View Balloon option on the Actions menu performs the same function. See **Using the View Balloon Dialog Box on page 6-50** for more information.
- The **View Device** button  focuses the Viewer on the device on which the note is located, if you have a Viewer window open. The View option on the Actions menu performs the same function.

Using the View Balloon Dialog Box

The View balloon dialog box displays the note text for the row selected in the Note Summary list. From here, you can print or delete the note. You can also focus the Viewer on the device on which the note is located.

To open the View balloon:

1. If not already enabled, click the **Balloon Details**  button on the Note Summary window to enable this feature.
2. Click on a note in the Note Summary window. The View balloon opens. Use the toolbar buttons on the View balloon to perform the following tasks:
 - Click  to focus the Viewer on the device on which the note is located, if you have a Viewer window open.
 - Click  to print the note. The Print Preview window opens. For more information about using this window, see **Printing on page 6-14**.
 - Click  to delete the note. A confirmation dialog opens. Click **Yes** to confirm or **No** to cancel the deletion. Once deleted, the note disappears from both the Note Summary and the Viewer.
 - To close the View balloon, click the **X** in the top right corner of the dialog box.

Editing a Note

To edit a note, select the note from the Note Summary window, and then click . The Edit balloon dialog box opens. Do any of the following:

- To add or edit text, place the cursor in the Note field and type your changes. Use the <Delete> key on the keyboard to remove unwanted text.
- To save your changes, click .
- To abandon your changes and revert to the previously saved note, click .
- To focus the Viewer on the device on which the note is located, click . (You must already have a Viewer window open.)
- To print the note, click . The Print Preview window opens. For more information about using this window, see **Printing on page 6-14**.
- To delete the note, click . A confirmation dialog opens. Click **Yes** to confirm or **No** to cancel the deletion. Once deleted, the note disappears from both the Note Summary and the Viewer.
- To close the View balloon, click the **X** in the top right corner of the dialog box.

Tag Summary

Use the Tag Summary window to see a list of all the tags that have been placed on devices. Tags are placed using the Control Tool.

This section includes the following topics:

- **Using the Tag Summary Window**
- **Using the View Balloon Dialog Box**
- **Editing a Tag**

Using the Tag Summary Window

To view the Tag Summary, click the **Summaries...** button on the Environment Manager and then select **Tag Summary**. The Tag Summary window displays the following fields:

- The **Last Updated** field shows the date the tag was last updated.
- The **Tag #** column contains the unique number of the tag attached to the device.
- The **Date Created** column contains the date and time the tag was created.
- The **Substation** column contains the name of the substation that serves the device on which the tag is located.
- The **Feeder** column contains the name of the feeder that serves the device on which the tag is located.
- The **User** column contains the user name of the individual who placed the tag.
- The **Device** column contains the name of the device on which the tag is located.
- The **Phase** column displays the tag's phase.
- The **Tag Info** displays the text associated with the tag.

Toolbar Buttons and Menu Options

- The **Refresh** button  refreshes the Tag Summary to display the most recent updates. If you edit a tag (using the Edit button), you must refresh the Tag Summary to display the changes. The Refresh option on the File menu performs the same function.
- The **Print Preview** button  displays the Print Preview window, from which you can view and print the tag summary. The Print Preview option on the File menu performs the same function. For more information about using the Print Preview window, see **Printing on page 6-14**.
- The **Delete** button  deletes the selected tag from the system. A confirmation dialog box prompts you to confirm before deleting. Once deleted, the tag disappears from both the Tag Summary and the Viewer. The Delete Row option on the File menu performs the same function.
- The **Sort** button  displays the Sort dialog box. The Sort Dialog option on the Sort menu performs the same function. See **Using the Sort Dialog Box on page 6-5** for more information.
- The **Filter** button  displays the Filter dialog box. The Filter Dialog option on the Filter menu performs the same function. See **Using the Filter Dialog on page 6-6** for more information.
- The **Edit** button  opens the Edit balloon so you can edit the text associated with the tag. The Edit option on the Actions menu performs the same function. See **Editing a Note on page 6-39** for more information.
- The **Balloon Details** button  enables or disables balloon details for the tag. When this is enabled, clicking a tag brings up the View balloon dialog box, which displays the tag text and provides additional options. The Enable View Balloon option on the Actions menu performs the same function. See **Using the View Balloon Dialog Box on page 6-52** for more information.
- The **View Device** button  focuses the Viewer on the device on which the tag is located, if you have a Viewer window open. The View option on the Actions menu performs the same function.

Using the View Balloon Dialog Box

The View balloon dialog box displays the tag details for the row selected in the Tag Summary list. From here, you can print or delete the tag. You can also focus the Viewer on the device on which the tag is located.

To open the View balloon:

1. If not already enabled, click the Balloon Details  button to enable this feature.
2. Click on a tag in the Tag Summary window. The View balloon opens. Use the toolbar buttons on the View balloon to perform the following tasks:

- Click  to focus the Viewer on the device on which the tag is located, if you have a Viewer window open.
- Click  to print the tag. The Print Preview window opens. For more information about using this window, see **Printing on page 6-14**.
- Click  to delete the tag. A confirmation dialog opens. Click **Yes** to confirm or **No** to cancel the deletion. Once deleted, the tag disappears from both the Note Summary and the Viewer.
- To close the View balloon, click the **X** in the top right corner of the dialog box.

Editing a Tag

To edit the text associated with a tag, select the tag from the Tag Summary window, and then click



. The Edit balloon dialog box opens. Do any of the following:

- To add or edit text, place the cursor in the edit field and type your comments. Use the <Delete> key on the keyboard to remove unwanted text.
- To save your changes, click .
- To abandon your changes and revert to the previously saved tag details, click .
- To focus the Viewer on the device on which the tag is located, click . (You must already have a Viewer window open.)
- To print the tag details, click . The Print Preview window opens. For more information about using this window, see **Printing on page 6-14**.
- To delete the tag, click . A confirmation dialog opens. Click **Yes** to confirm or **No** to cancel the deletion. Once deleted, the tag disappears from both the Note Summary and the Viewer.

SCADA Summary

SCADA functionality is provided as an extension to Oracle Utilities Network Management System. For an overview of SCADA extensions, see **SCADA Extensions on page 13-1**.

The SCADA Summary provides the current values and qualities of all mapped SCADA measurements in Oracle Utilities Network Management System. Each row of this summary represents one measurement. There may be multiple unique measurements on one SCADA device. SCADA information includes digital and analog measurements, along with the quality codes and any user comments for each measurement. You can use the summary to view measurement information, manually replace current SCADA values, and inhibit updates.

This section includes the following topics:

- **Using the SCADA Summary Window**
- **Preventing Updates from SCADA**
- **Manual Entry and Override of SCADA Values**

Using the SCADA Summary Window

To open the SCADA Summary, click the **Summaries...** button on the Environment Manager, and then select **SCADA Summary**.

The SCADA Summary displays the following fields and buttons:

- The **Feeder** column contains the name of the feeder reporting the SCADA measurements.
- The **Device** column contains the name of the device reporting the SCADA measurements.
- The **Attribute** column contains the SCADA measurement value (e.g., status, voltage, current).
- The **Value** column contains the last reported measurement value. The value can be status, digital, or analog. For status measurements, the values are displayed as a test pair, such as open/close, on/off, etc. Analog and digital values are shown as floating point and integer values.
- The **Quality** column contains the Quality codes for the measurement that indicates the quality of the SCADA measurement (e.g., out of scan, inhibited, manual override). Several quality codes can be listed.
- The **Units** column contains the unit of measurement value (e.g., amps, kVA). Status measurements do not have units.
- The **Point Name** column contains the source for the measurement, as configured in the ANALOG_MEASUREMENTS.source or DIGITAL_MEASUREMENTS.source column in the Oracle Utilities Network Management System database.
- The **Type** column contains a description of the measurement type, as configured in the ATTRIBUTES.description column in the Oracle Utilities Network Management System database for the matching attribute.

Toolbar Buttons

- The **Inhibit** button sets the “inhibit” quality code for the selected SCADA measurement. This suppresses any new updates from SCADA.
- The **Cancel Inhibit** button removes the “inhibit” quality code from the selected SCADA measurement. This allows any new updates from SCADA to be displayed.
- The **Manual Entry** button allows you to enter a new value for the selected SCADA measurement. When a changed SCADA value is received by the system, it replaces the manually entered value.

- The **Manual Override** button allows you to enter a new value for the selected SCADA measurement. When a new SCADA value is received by the system, the measurement is blocked and the manually overridden value remains.
- The **Cancel Override** button cancels the manual override for the selected measurement and reverts the selected measurement to the last received value from the SCADA system.
- The **Exit** button closes the SCADA Summary window.

Menu Options

- The **Print** option on the File menu allows you to print the SCADA Summary list.
- The **Filter** menu options allow you to filter the list to display:
 - All SCADA measurements
 - Equipment
 - Analogs
 - Digitals
 - Statuses
 - Filter Dialog (see **Using the Filter Dialog on page 6-6**).

Preventing Updates from SCADA

To prevent a SCADA measurement from accepting updates from SCADA, complete these steps:

1. Click the **Summaries...** button on the Environment Manager, and then select **SCADA Summary**. The SCADA Summary window opens.
2. Select a row in the SCADA Summary list that belongs to the device you want to inhibit.
3. Select the **Inhibit** button.

Manual Entry and Override of SCADA Values

Occasionally, you may need to manually enter a status, digital value, or analog value for a SCADA measurement. For example, you may need to enter fault current and a fault current indicator to trigger Fault Location Analysis (if applicable). See **Fault Location Analysis on page 19-1** for more information.

If the value for the selected measurement is a switch status measurement (i.e., open/close), you can choose **Show Control Tool** from the pop-up menu to manually operate the switch. Otherwise, use the following procedure to enter a value manually:

1. Click the **Summaries...** button on the Environment Manager, and then select **SCADA Summary**. The SCADA Summary window opens.
2. Select the SCADA measurement row in the SCADA Summary list.
3. Click either the **Manual Entry** or **Manual Override** button.

Note: A manual entry will allow future SCADA value changes to update the value you enter. A manual override will no longer be updated by SCADA until the Manual Override is removed by clicking the Cancel Override button. This can be useful when testing specific devices or RTU communications offline, since the test operations can be prevented from creating outages in Oracle Utilities Network Management System by putting manual overrides on the appropriate status measurements.

If the value for the measurement is a multi-state digital, analog, or any type of measurement other than a switch status measurement (open/close), a dialog box opens, allowing you to enter a value.

Note: Multi-state digitals are not available through the Oracle Utilities Network Management System SCADA ICCP Block 1, 2, and 5 Adapter.

4. Select or enter the value you want to change the measurement to.
5. Click **OK**.

Note: Clicking on the Manual Override button “blocks” any new values coming from the SCADA measurement. It does not affect the physical SCADA device, it only blocks the value reported by the SCADA device to Oracle Utilities Network Management System.

Using the Alarms and Devices Lists

The Alarms and Devices Lists window provides the following views:

- **Abnormal Devices List**
- **Device Operations List**
- **SCADA Alarms List**
- **System Alarms List**

To display the Alarms and Devices Lists window, click the **Alarms and Devices Lists...** button on the Environment Manager, then select one of the views above.

All views support the following functions:

- **Toolbar and Menus**
- **Acknowledging Alarms**
- **Silencing Alarms**
- **Removing Alarms from the List**
- **Turning Audio Notification On and Off**
- **Preventing a Device from Reporting SCADA Alarms**

Abnormal Devices List

The Abnormal Devices view displays all devices that are not in their nominal state. For example, if a switch that is nominally closed is currently open, it will display in the Abnormal Device Summary. If a SCADA system is integrated with Oracle Utilities Network Management System, any devices that are reported by a SCADA point as being in an off-nominal state will also display. This will also display any wire downs or jumpers, or emergency cables in either an open or closed state.

To access the Abnormal Device Summary, select **Abnormal Device Summary...** from the Work Agenda File Menu or click the **Alarms and Devices Lists...** button on the Environment Manager and then select **Abnormal Devices List**.

The Abnormal Devices List displays the following fields:

- The **Date** column contains the date and time that the device was last operated.
- The **Feeder** column contains the name of the feeder that serves the abnormal device.
- The **Device** column contains the name of the abnormal device.
- The **Description** column contains a description of the operation that caused the abnormal state.
- The **Source** column contains the source of the abnormal operation.
- The **Value** column contains the current state of the device.
- The **Phase** column contains the phases of the device.
- The **Nominal** column contains the normal state of the device.

Related Topics:

- **Silencing Alarms**
- **Removing Alarms from the List**
- **Turning Audio Notification On and Off**

Device Operations List

The Device Operations List displays all recent operations performed in the user's control zones.

To access the Device Operations List, select **Device Operations List** from the Work Agenda File Menu or click the **Alarms and Devices Lists...** button on the Environment Manager and then select **Device Operations List**.

This list displays the same columns as the **Abnormal Devices List**.

Related Topics:

- **Silencing Alarms**
- **Removing Alarms from the List**
- **Turning Audio Notification On and Off**

System Alarms List

The System Alarms List displays a list of all system alarms.

To access this list, select **System Alarms List** from the Work Agenda File Menu or click the **Alarms and Devices Lists...** button on the Environment Manager and then select **System Alarms List**.

The System Alarms List displays the following fields:

- The **Date** column contains the date and time the alarm was generated.
- The **Description** column contains a description of the alarm.
- The **Source** column contains the originator of the alarm.
- The **Who Ack** column contains the ID of the user who acknowledged the alarm.
- The **Time Ack** column contains the date/time stamp when the alarm was acknowledged.

Related Topics:

- **Silencing Alarms**
- **Removing Alarms from the List**
- **Turning Audio Notification On and Off**
- **Preventing a Device from Reporting SCADA Alarms**

SCADA Alarms List

The SCADA Alarms view is only available if your system supports SCADA extensions. For more information about SCADA extensions, see **SCADA Extensions on page 13-1**.

To access this list, select **SCADA Alarms List** from the Work Agenda File Menu or click the **Alarms and Devices Lists...** button on the Environment Manager and then select **SCADA Alarms List**.

The SCADA Alarms List displays the following fields:

- The **Date** column contains the date and time the alarm was generated.
- The **Feeder** column contains the feeder on which the device in alarm is located.
- The **Device** column contains the identification of the device associated with the alarm.
- The **Description** column contains a description of the alarm.
- The **Source** column contains the originator of the alarm.

- The **Value** column contains the last reported measurement value. The value can be status, digital, or analog. For status measurements, typically a value of “0” indicates open and a value of “1” indicates closed. Any special tags placed on the device would be indicated by a digital value.
- The **Phase** column contains the phase of the measurement, described as A, B, C, or a combination of phases.
- The **Attribute** column contains the type of SCADA measurement (e.g., current, voltage).
- The **Nominal** column contains the nominal value of the measurement that is in alarm (only for digital).

Related Topics:

- **Silencing Alarms**
- **Removing Alarms from the List**
- **Turning Audio Notification On and Off**
- **Preventing a Device from Reporting SCADA Alarms**

Menus

The following table describes the Alarms and Devices Lists menus.

Menu	Description
File	Print – Opens up the Print Preview dialog box, which allows you to print out the contents of the table. Exit – Closes the Abnormal Device Summary window.
Filter	Device Operations List – Opens Device Operations view. System Alarms List – Opens the System Alarms view. SCADA Alarms List – Opens the SCADA Alarms view. Abnormal Devices List – Opens the Abnormal Devices view. Show Filter Dialog – Opens the Filter dialog box, allowing you to create, modify, apply, and save user-defined filters. All – Displays all alarms of the selected alarm type.
Help	Allows you to display the About Web Workspace dialog box.

Toolbar

The options on the Alarms and Devices Lists toolbar vary depending on the current view. The following table describes the toolbar options and identifies which buttons are applicable to each view.

Note: Toolbar options are also displayed as pop-up menu options when you right-click a row in the alarm list.

Button	Description
	Acknowledges the selected alarms. This button does not display in the Abnormal Devices view.
Acknowledge	

Button	Description
 Clear	Clears the selected alarms. This button does not display in the Abnormal Devices view.
 Silence	Silences the selected alarms. This button displays only in the SCADA Alarms view.
 Audio Enabled Audio Enabled	Enables or disables alarm sounds (beeping). This button displays only in the SCADA Alarms view.
 Exit	Closes the Alarms and Devices Lists window.

Acknowledging Alarms

To acknowledge an alarm, complete these steps:

1. In the Alarms and Devices List, select the row of the alarm you want to acknowledge.
2. Click the **Acknowledge** button. The following occurs:
 - The alarm becomes acknowledged.
 - Its audible alarm is silenced.
 - Your user name appears in the Who Ack field.
 - The current date and time appears in the Date Ack field.

Silencing Alarms

To silence an alarm, complete these steps:

1. In the Alarms and Devices List, select the row of the alarm you want to silence.
2. Click the **Silence** button.
 - The audio notification for the alarm becomes silent.
 - The alarm is still not acknowledged.
 - Subsequent new alarms will cause the audio notification to sound.

Removing Alarms from the List

To remove an alarm from the Alarms and Devices List, complete these steps:

1. In the Alarms and Devices List, select the row of the alarm you want to silence.
2. Click the **Clear** button. The alarm disappears from the list.

Note: You can remove multiple alarms by selecting multiple rows before you click the Clear button. Select multiple rows by clicking a row, holding the mouse button, and dragging the pointer over the additional rows.

Turning Audio Notification On and Off

To turn audio notification on or off, click on the Audio Enabled checkbox at the top of the Work Agenda window. The audio for the entire system (all alarms) will toggle on or off.

Preventing a Device from Reporting SCADA Alarms

To prevent a device from reporting Alarms, complete these steps:

1. In the Alarms and Devices List, select the row of an alarm that belongs to the device you want to inhibit.
2. Click the **Inhibit Alarm** button.
 - The device will not report SCADA alarms until the inhibit is cancelled.
 - An “I” appears next to the device in the Viewer indicating the device is inhibited.
 - An “I” appears in the Quality columns of the SCADA Alarms List and the SCADA Summary.

Note: Inhibiting alarms does not affect the physical SCADA device; it only prevents Oracle Utilities Network Management System SCADA Extensions from reporting an incoming alarm.

Using the User Log

The User Log displays a log of actions taken by a user.

To open the User Log, click the **Misc Tools...** button on the Environment Manager window and then select **User Log**.

The User Log displays the following fields and buttons:

- The **User ID** field displays the user for which log entries are displayed.

To load log entries for a different user, enter the user ID in this field and then click the  button.
- The **Begin Time** and **End Time** fields allow you to filter the User Log by time. To load log entries for a specific time period:
 - Enter a starting date in the Begin Time field.
 - Enter an ending date in the End Time field.

Note: You can enter a beginning date, an ending date, or both.
- Click the  button. The list is refreshed to display only entries with a date and time greater than or equal to the Begin Time and less than or equal to the End Time.
- The **User Comment** allows you to enter a user comment log entry. Type the note text into this field and then click the  button.

Note: The User Log does not automatically refresh, so the new note will be displayed the next time the user's log is loaded.
- The **Date/Time** field displays the date/time at which the log entry occurred.
- The **Event** field displays the Event # associated with the log entry.
- The **User** field displays the user that initiated the action.
- The **Text** field displays a description of the log entry.

Note: The Event Log does not automatically refresh, so the new note will be displayed the next time the event is loaded.

- The  button displays the Print Preview dialog box so you can view or print the log.
- The  button closes the User Log window.
- The  button loads the User Log for the for the current filter parameters (User ID, Begin Time, and End Time).
- The  button clears the User Log.
- The  button displays the device associated with the log entry in the Viewer.
- The  button displays the Event Details window for the event associated with the log entry.

Chapter 7

Web Trouble

This chapter describes the Web Trouble application. It includes the following topics:

- **Overview**
- **Managing Events with Web Trouble**
- **Managing Crews with Web Trouble**
- **Managing Calls with Web Trouble**

Overview

Oracle Utilities Network Management System - Web Trouble allows you to decentralize your operations during heavy workload and storm situations. You can use Web Trouble in remote operations offices in order to better coordinate crew dispatching and operations functions. Web Trouble shares data with other Oracle Utilities Network Management System modules to ensure the most accurate and current data is displayed to your users.

The Web Trouble module augments the Web Workspace module with crew and event management capabilities. Web Workspace's crew dispatch and management functions facilitate operations in daily maintenance and outage restoration situations. It shares data with the Oracle Utilities Network Management System Trouble Management module.

The windows, menu bar, and buttons on the Web Trouble window are common to both Web Trouble and Web Workspace. Refer to the following topics for details on using and navigating common application components:

- **Common Features**
- **Dockable Windows Navigation**
- **Sorting and Filtering Data**
- **Logging In**

Managing Events with Web Trouble

Oracle Utilities Network Management System – Web Trouble includes windows that help you manage trouble events. This section describes those windows and how to perform basic event functions. It includes the following topics:

- **Trouble Event Related Windows**
- **Using the Work Agenda Trouble Events Lists**
- **Acknowledging Events**
- **Setting the Work Queue**
- **Sorting Work Agenda Rows**
- **Event Grouping**
- **Associating and Unassociating Calls with Devices**
- **Event Details**
- **Working with AMR Requests**
- **Using the Event Log**

Trouble Event Related Windows

The following table highlights the basic functionality of each of the trouble event related windows.

Window	Functions
Work Agenda	Displays lists of trouble events Allows you to acknowledge events Allows you to group events Allows you to associate devices with events
Event Details	Allows you to record trouble and restoration details for events Allows you to record failed equipment information
Create Event	Allows you to record events discovered in the field that have not been reported by customers

Using the Work Agenda Trouble Events Lists

The Work Agenda displays lists of items that may require action. When you log in to Oracle Utilities Network Management System Web Workspace, the Work Agenda opens by default to the To Do List. If you have closed the Work Agenda, you can open it again by clicking on the **All, To Do, In Progress, Incomplete, or Completed** button on the Environment Manager.

This section includes the following topics:

- **Overview**
- **Trouble Event List Views**
- **Using the Trouble Events List**
- **Acknowledging Events**
- **Sorting Work Agenda Rows**
- **Event Grouping**
- **Using the Event Details Window**

Overview

The Work Agenda Trouble Events lists display outages (new, predicted, and confirmed) and non-outages, along with associated system and event information. The Trouble Events lists can organize events based on critical customers, emergency calls, number of customers out, etc. You can customize the order in which the columns display.

Event rows are color-coded by status. For more information about the color coding used to indicate event status on the Work Agenda, see **Event Status** on page B-2.

A summary of the total number of events, calls, and estimated customers out for the currently selected view (subject to any filtering) appears at the top of the Work Agenda window above the Trouble Events list. This area also provides totals within specific categories for types of calls and customers, as well as a summary of dispatched crews.

New and revised predicted events are sent to the Work Agenda from the Oracle Utilities Network Management System Trouble Management analysis engine. The system then alerts you to the new information with an audible alarm. The alarm will sound:

- Every three seconds continuously when an event with a NFY status (Notify alarm) appears, until the event is acknowledged.
- Once every five minutes while there are any other unacknowledged events.

Trouble Event List Views

The Work Agenda is configured with several different Trouble Event List views. Different views can have different buttons and Actions menu options. To access a different view, click on the Filter menu and select the list you want to see.

The table below describes the available Work Agenda views.

View	Description
To Do List	Displays trouble events that require attention, as well as any trouble event alarms (events with Status NEW, F-NEW, S-NEW, P-NEW, M-NEW, UAS, F-UAS, S-UAS, P-UAS, M-UAS, W-UAS, SNT, S-SNT, P-SNT, M-SNT, W-SNT, RED, CRT, RSCH, NFY, VFY, and C-CNL). You can also access this view from the Environment Manager by clicking on the To Do button.
In Progress List	Displays most trouble events that have crew resources associated with them (e.g., a crew is onsite and is working to resolve the problem), as well as any trouble event alarms (events with Status ASN, F-ASN, ENR, F-ENR, S-ENR, W-ENR, S-ASN, W-ASN, ONS, F-ONS, S-ONS, W-ONS, SUS, S-SUS, W-SUS, RST, S-RST, RSCH, NFY, and VFY). You can also access this view from the Environment Manager by clicking on the In Progress button.
All List	Displays all trouble events of any status. You can also access this view from the Environment Manager by clicking on the All button.
Incomplete List	Displays all incomplete trouble events and events that have maintenance work pending (events with Status INC, S-INC, P-INC, M-INC, MNP, and S-MNP). Incomplete events are events that are complete in the field but the information for them has not been completely entered on the Event Details window. You can also access this view from the Environment Manager by clicking on the Incomplete button.

View	Description
Completed List	Displays all completed and cancelled trouble events (events with Status CMP, F-CMP, S-CMP, P-CMP, M-CMP, W-CMP, CNL, F-CNL, and W-CNL). You can also access this view from the Environment Manager by clicking on the Completed button.

Note: You can also view the Alarms and Devices Lists and the AMR Requests List by selecting the appropriate option on the File menu. See **Using the Alarms and Devices Lists** on page 6-57 and **Working with AMR Requests** on page 7-19 for more information.

Using the Trouble Events List

The Trouble Events List displays the following fields and buttons:

- The **Total Events in View** field displays the number of events in the currently displayed view of the Trouble Events list.
- The **Est Cust Out** field displays the number of customers estimated to be affected by the events in the currently displayed view of the Trouble Events list.
- The **Calls** field displays the number of calls entered for the events in the currently displayed view of the Trouble Events list.
- The **Pri Calls** field displays the number of priority calls entered for the events in the currently displayed view of the Trouble Events List.
- The **EMR Cust Out** field displays the number of emergency customers affected by the events in the currently displayed view of the Trouble Events list.
- The **MED Cust Out** field displays the number of medical customers affected by the events in the currently displayed view of the Trouble Events list.
- The **KEY Cust Out** field displays the number of key customers affected by the events in the currently displayed view of the Trouble Events list.
- The **Crews En Route/Onsite** field displays the number of crews en route to/onsite at the events in the currently displayed view of the Trouble Events list.
- The Sort identifier displays which sort is applied to the list.
- The list title displays the list you are viewing (e.g., To Do List, All List, etc.).
- The **Audio Enabled** checkbox allows you to turn the audible alarm on and off.
- The **Status** column displays the status assigned to the event. See **Event Status Codes** on page A-1 for a complete list of status codes and descriptions.
- The **Event #** column displays the number the system has assigned to the event.
- The **Feeder** column displays the name of the feeder associated with the event.
- The **E/H** column indicates whether or not the event is an emergency or hazardous condition. An “E” in this column denotes extreme emergency, and an “H” in this column denotes hazardous.
- The **Start Date** column contains the date and time the event began.
- The **# Out** column contains the number of customers experiencing an outage for the event.
- The **# Calls** column contains the number of calls received for the event.
- The **Clues** column contains the clue codes for the calls received, if any.
- The **Phases Out** column contains the phases predicted out for the event.
- The **Device** column contains the name of the device associated with the event.

- The **Location** column contains either the address of the first customer that called if the event is a service outage or non-outage or the feeder location of the device if the event is a device outage.
- The **Crew** column contains the crew id(s) of the associated crew(s).
- The **Est Restore Time** column contains the estimated restoration time (ERT) for the event.
- The **Est Src** column contains the source of the ERT for the event. The possible source values are:
 - N – none (no ERT)
 - S – Oracle Utilities Network Management System – Storm Management
 - P – Oracle Utilities Network Management System Storm Management “non-published global ERT”
 - O – Oracle Utilities Network Management System Storm Management “onsite ERT”
 - G – Oracle Utilities Network Management System Storm Management “published global ERT”
 - C – User-entered (assumed to have been provided by the crew)
 - I – Initial default ERT
- The **Pred Type** column contains the type of prediction (e.g., New, Revised, Device Operation, etc.) or type of notification for NFY events (e.g., Crew contact required).
- The **Restore Date** column contains the actual restoration date and time of the event.
- The **# Crit** column contains the total number of critical customers experiencing an outage for the event.
- The **# EMR** column contains the number of emergency customers experiencing an outage for the event.
- The **# MED** column contains the number of medically urgent customers experiencing an outage for the event.
- The **# KEY** column contains the number of key customers experiencing an outage for the event.
- The **Evt Type** column contains a description of the type of event. See **Event Type Codes** on page A-4 for a complete list of event type codes and their descriptions.
- The **Work Queue** column contains the name of the work group queue that the event has been referred to.
- The **Region** column contains the control zone region where the event occurred.
- The **Branch** column contains the control zone branch where the event occurred.
- The **Substation** column contains the control zone substation where the event occurred.
- The **Plan #** column contains the switching plan number associated with the event, if any.
- The **Grp Type** column indicates whether the event is manually grouped or related. The possible types are:
 - GRP – manually grouped
 - REL – manually related
- The **Rel Event #** column contains the event number of the parent or lead event when the event has a special relationship with one or more other events.
- The **Rel Type** column contains the type of special relationship that the event is involved in. The possible types are:

- L – lead event of a partial restoration
- M – momentary
- N – nested
- P – non-lead event of a partial restoration
- R – manually related
- S – switching (relationship between switching jobs and planned outages)
- The **Sent to Mobile** column indicates whether or not the event is in a state that makes it eligible to be sent to the mobile system.
- The **AMR Requested** column indicates whether or not a request was made to the AMR system to verify power to the meter.
- The **Operations Event Note** field displays the Operations Event Note for the selected event, if any.
- The **Outages** radio button, if selected, filters the currently selected view of the Trouble Events list to display only outage events.
- The **Non-Outages** radio button, if selected, filters the currently selected view of the Trouble Events list to display only non-outage events.
- The **Both** radio button, if selected, causes the currently selected view of the Trouble Events list to display both outage and non-outage events.

Buttons

- The **Ack** button acknowledges the selected event.
- The **View** button opens Viewer 1 if not already open, and then focuses Viewer 1 on the device from the selected Work Agenda row.
- The **Info...** button opens the Trouble Information window with information about the selected event.
- The **Event Details...** button opens the Event Details window with information about the selected event.
- The **Event Log...** button opens the Event Log, which displays switching sheet steps associated with the selected row.
- The **Referral** button opens the Work Queue dialog, allowing you to select a work group to refer the event to and enter any necessary remarks.
- The **Rel Crews** button releases all crew(s) from the selected event.
- The **Incomplete** button changes the event status to an Incomplete status that is appropriate for the selected event (e.g., INC, S-INC, P-INC, M-INC).
- The **Cancel Event** button cancels the selected event. A dialog box opens prompting you for a reason for the cancellation.
- The **Auto Filter** button allows you to quickly filter the view by the selected cell value.
- The **Auto Filter Off** button turns off any auto filter that has been applied.
- The **Exit** button closes the Work Agenda window.

Work Agenda Menus

File Menu - The table below describes the options available on the File menu.

Menu Option	Description
AMR Requests List...	Displays the AMR Requests list. See Working with AMR Requests on page 7-19
Abnormal Devices List...	Displays the Alarms and Devices Lists window to the Abnormal Devices List on page 6-57.
Device Operations List...	Displays the Alarms and Devices Lists window to the Device Operations List view.
SCADA Alarms List...	Displays the Alarms and Devices Lists window to the SCADA Alarms List on page 6-58.
System Alarms List...	Displays the Alarms and Devices Lists window to the System Alarms List on page 6-58.
Print	Displays the Print Preview dialog so you can view or print the list.
Exit	Closes the Work Agenda window.

Sort Menu - The table below describes the options available on the Sort menu.

Menu Option	Description
Dialog	Opens the Sort dialog, allowing you to create, modify, apply, and save user-defined sorts.
Default	Applies the default sort.

Filter Menu - The table below describes the options available on the Filter menu.

Menu Option	Description
Dialog	Opens the Filter dialog where you can create, modify, apply, and save user-defined filters.
[Filter Name]	Allows you to toggle between views, including All, To Do, In Progress, Completed, and Incomplete.
Default	Applies the filter for the currently selected view (e.g., the To Do list displays only events with Status NEW, S-NEW, P-NEW, M-NEW, UAS, S-UAS, P-UAS, M-UAS, W-UAS, RED, CRT, NFY, and C-CNL).
Switching	Filters the currently selected view so that it displays only planned outages and switching jobs, if present.

Actions Menu - The table below describes the options available on the Actions menu.

Menu Option	Description
Ack	Acknowledges the selected event.
View	Opens Viewer 1 if not already open, and then focuses Viewer 1 on the device from the selected Work Agenda row.

Menu Option	Description
Info...	Opens the Trouble Info window with information about the selected event.
Event Details...	Opens the Event Details window with information about the selected event.
Referral	Opens the Work Queue dialog, allowing you to select a work group to refer the event to and enter any necessary remarks.
Rel Crews	Releases the crew(s) from the selected event.
Incomplete	Changes the status of the event to an Incomplete status that is appropriate for the selected event (e.g., INC, S-INC, P-INC, M-INC).
Cancel Event	Cancels the selected event. A dialog box opens prompting you for a reason for the cancellation.
Group Events	Opens the Group Events dialog box, which allows you to manually group, relate, and unrelate events.
Associate Event	Allows you to associate the selected fuzzy event to a device.
Send to Mobile	Changes the event status to a Sent status that is appropriate for the selected event (e.g., SNT, S-SNT, P-SNT, M-SNT, W-SNT). Also, if the Sent to Mobile column value happens to be “N” at the time the Send to Mobile button is pressed, it will update to a value of “Y”.
Find Selection	Scrolls the currently selected event back into view should it scroll off of the list.
Auto Filter	Allows you to quickly filter the view by the selected cell value.
Auto Filter Off	Turns off any auto filter that has been applied.
Load Completed Events	By default, completed events are not loaded into the Work Agenda on startup for performance reasons. Use this button to load in completed events.
Load Completed Event...	Opens the Load Completed Event Dialog, which allows you to load a specific completed event by specifying its Event #.
Event Log...	Opens the Event Log window for the selected event.
AMR Confirm...	Allows you to request meter pings from the AMR system for the selected event.
Show AMR Request...	Displays a list of active and completed AMR requests for the selected event.
Fault Location Analysis...	Displays the Fault Location Analysis tool for the selected fault event.

Help Menu - The table below describes the options available on the Help menu.

Menu Option	Description
About Web Trouble	Opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Oracle Utilities Network Management System Web Gateway that the application is using.

Acknowledging Events

To acknowledge an event, complete these steps:

1. Select the row of the event with NEW, S-NEW, P-NEW, M-NEW, or RED status in the Trouble Events List. The **Ack** button will enable.
2. Click on the **Ack** button. The event becomes acknowledged and its status changes accordingly.

Setting the Work Queue

To set a Work Queue value for an event, complete these steps:

1. Select the desired event's row in the Work Agenda.
2. Click on the **Referral** button. The Work Queue dialog appears.
3. Select a value from the Refer To list.
4. Enter any desired remarks into the Remarks field.
5. Click the **OK** button. The Work Queue dialog disappears, and the Work Queue column of the selected row updates with the selected Refer To value.

Sorting Work Agenda Rows

Sorting lets you display data in a particular order. To sort the rows in the Work Agenda, complete the following steps:

1. Open the Work Agenda window.
2. Click on the column header to sort the rows in order (e.g., ascending) based on the values in that column.
3. Click on the column header again to sort the rows in the opposite order (e.g., descending). An arrow appears identifying if the sort is ascending or descending.

Event Grouping

While the system automatically groups events according to the trouble analysis rules, you may come across some events that are related, but are not grouped because of data modeling issues (e.g. connectivity problems). You can manually group these events together using the Group Events dialog box.

Group Events Dialog Box

The Group Events dialog box allows you to group events. To open the Group Events dialog box, select **Group Events** from the Actions menu in the Work Agenda window.

The Group Events Dialog displays the following fields:

- The **Selected Events** area displays all of the events that have been selected for grouping.
- The **Group Method** contains a selection of grouping options:
 - The **merge** option is used for event grouping.
 - The **relate** option does not group the selected events, but rather allows you to record a relationship between the events and enter notes in the Relationship Comments field.
 - The **unrelate** option allows you to remove one or more previously related events from the relationship.
- The **Relationship Comments** field allows you to enter comments about the relationship when the Group Method is set to “relate.”

Grouping Events

To group events, complete these steps:

1. Open the Group Events dialog box by selecting **Group Events** from the Work Agenda Actions menu.
2. Make sure the Group Method is “merge.”
3. In the Trouble Events list, select the row for the event that all subsequent events will be grouped to. The event number appears in the Selected Events field.
4. Select the row of an event in the Trouble Events list that you want to group to the first selected event. The event number for the event is added to the Selected Events field.
5. If there are other events you want to add, select the row for those events in the Trouble Events list. The event numbers for the events are added to the Selected Events field.
6. To deselect a selected event, select its row again. The event number is removed from the Selected Events field.
7. Click on the **OK** button.
 - The selected events are grouped to the first selected event.
 - The rows for the subordinate events disappear from the Trouble Events List.
 - The number of customer calls are added together and their sum appears in the # Calls column.

Grouping Rules

If the events that you selected do not meet the manual grouping rules, the system will not let you group them. An error message will appear explaining the problem. Manual grouping rules include the following:

- General fuzzy events can group to any outage.
- Fuzzy events associated with a control zone can only group to other events in the same control zone.
- Non-outage events can group to outage or non-outage events.
- Outage events can group to other outage events, but outage events cannot be grouped to other outage events that they are not downstream of.
- Real outages (i.e., outages that have a device opened/closed in the Viewer causing a segment of the model to be de-energized) cannot group to one another.
- Outage events cannot group to non-outage events.
- Meets (e.g., meet fire, etc.) cannot group to anything.
- Switching jobs cannot group to anything.

Graphical Grouping (Supply Point Selection Mode)

To add customers to an event graphically, follow these steps:

1. Select a probable outage in the Work Agenda
2. Press the **Info...** button to display the Trouble Info callers for this outage.
3. From the Trouble Info Callers page, you can navigate to the Supply Points page to view all existing Supply Points.
4. In the Viewer, press the **Outage Augmentation** button  to toggle into Supply Point Selection mode.
5. Using a box or polygon, select a group of supply points. In Supply Point Selection mode, all supply points inside the box or polygon are selected. (See **Selecting Devices** on page 6-23 for details on selecting devices in the Viewer.)

New Supply Points rows are added to the table in green and marked as To Be Grouped (TBG).

6. Press the **Update Event** button on the Trouble Info Supply Points view to group the Supply Points into the event.
7. Enter an event grouping threshold (in hours) in the Update Job confirmation dialog.
 - The selected event will now include the selected supply points and the Work Agenda row will now reflect the new customer count and call count, if other calls existed on the selected Supply Points.
 - Supply Points with calls that did not pass the selected grouping threshold are not added to the outage and will be marked in yellow with FAIL in the Grp column.
 - You can also remove Supply Points from the event by selecting them and pressing the **Remove** button, then the **Update Event** button. Any calls on the removed Supply Points will create new events.

Relating Events

To relate events, complete these steps:

1. Open the Group Events dialog box by selecting **Group Events** from the Work Agenda Actions menu.
2. Change the Group Method to “relate.” The Relationship Comments field is now accessible.
3. In the Trouble Events list, select the row for the event that all subsequent events will be related to. The event number appears in the Selected Events field.
4. Select the row of an event in the Trouble Events list that you want to relate to the first selected event.
5. If there are other events you want to add, select the row for those events in the Trouble Events list. The event numbers for the events are added to the Selected Events field.
6. Type a comment into the Relationship Comments field, if desired.
7. Click the **OK** button. The selected events are related to one another. The **Grp Type** column in the Work Agenda for each event now contains “REL”, the **Rel Type** column now contains “R”, and **Rel Event #** column now contains the event number of the earliest event.

Unrelating Events

To unrelate events that have been related, complete these steps:

1. Open the Group Events dialog box by selecting **Group Events** from the Work Agenda Actions menu.
2. Change the Group Method to “unrelate.”
3. In the Trouble Events list, select the row for the event that you wish to unrelate. The event number appears in the Selected Events field.
4. If there are other events to you want to unrelate, select the row for those events in the Trouble Events list. The event numbers for the events are added to the Selected Events field.
5. Click the **OK** button. The selected events are unrelated. If two or more events are still part of that relationship, they remain related to each other. If the event that was displayed in the **Rel Event #** column was unrelated and two or more events are still part of that relationship, the **Rel Event #** column is updated with the event number of the earliest event remaining in the relationship.

Associating and Unassociating Calls with Devices

Sometimes a call comes in reporting a problem that is not clearly related to a particular customer or device. Until a device is identified for the problem, the event is considered a “fuzzy call.” When more information becomes available, you can associate the fuzzy call with a device. You can also unassociate these calls using the Trouble Info window.

Associating a Fuzzy Call with a Device

To associate an event with a device, complete these steps:

1. Open a Viewer window and load the map containing the device you want to associate.
2. In the Work Agenda list, select the row of the fuzzy event that you want to associate.
3. In the Work Agenda window, select Associate Event from the Actions menu. The Associate Event dialog box opens.
4. In the Viewer, select the device you want to associate the fuzzy call to. The device identification appears in the Device field of the Associate dialog box.
5. Click **OK** in the Associate Event dialog box. The row for the fuzzy event disappears from the Work Agenda, and the Oracle Utilities Network Management System analysis engine re-analyzes the fuzzy call using the selected associated device.

Unassociating/Reassociating a Call from/to a Device

To unassociate a call from one device and reassociate it to another device, complete these steps:

Note: If you are unassociating a call and you want to turn it into a fuzzy call, simply do not select a device to re-associate it with (i.e., omit the third and sixth steps below).

1. In the Work Agenda window, select the row for the event that contains the calls you want to unassociate.
2. Click on the **Info...** button. Call information about the event appears in the Trouble Info window.
3. Open a Viewer window and load the map containing the new device you would like to re-associate the call(s) with.
4. In the Trouble Info window, select the row for the call you wish to unassociate from its present device.
5. Select **Unassociate** from the Trouble Info Actions menu. The Unassociate dialog box opens.
6. Select a device in the Viewer to populate the New Device field in the Unassociate dialog box.
7. Click **OK** on the Unassociate dialog.
 - The call is unassociated from the current device and associated with the new device, if specified.
 - The Oracle Utilities Network Management System Trouble Management analysis engine re-analyzes the event from which the calls were unassociated, as well as the unassociated calls using their new associated device.

Event Details

The **Event Details** window is used to enter and track information about the cause of an event and how the event is resolved. It displays event information, including crew contact details, both the begin and restoration times for the event, any partial restoration steps, and the operations event note. Some information is automatically entered into Event Details, and you can manually override some of this data. In addition, you can complete events from this window, giving you an opportunity to enter more detail about the event and validate the completion for proper event reporting.

This section contains the following topics:

- **Using the Event Details Window**
- **Updating the Estimated Restoration Time**
- **Recording Failed Equipment Information**
- **Completing an Event**

Using the Event Details Window

To open Event Details, complete these steps:

1. From the Trouble Events list on the Work Agenda window, select an event row for which you want to see details.
2. Click the **Event Details...** button at the bottom of the Work Agenda window. The Event Details window opens.

The Event Details window contains three tabs:

- **Job Actions Tab**
- **Completion Actions Tab**
- **Equipment Failure Tab**

Job Actions Tab

The Job Actions tab lets you view detailed information about the event. The first section displays summary information about the event, including the duration and scope of the event. The second section displays partial restoration information. The third section allows you to enter estimated restore and repair time information as well as operations event notes. The fourth section allows you to manage crew contact times. The fifth section contains buttons that let you perform various actions associated with the event (e.g., save any changes).

For instructions on updating the ERT, see **Updating the Estimated Restoration Time** on page 7-18.

The Job Actions tab displays the following fields and buttons:

- The **Event #** is the number the system has assigned to the event.
- The **Device** is the name of the device associated with the event.
- The **Switching Plan #** is the switching plan number associated with the event, if any.
- **Zone** displays the control zone(s) where the associated device is located.
- **Event Began** contains the data and time at which the event began. This field is editable except for switching jobs.
- **Est # of Cust Out** contains the estimated number of customers experiencing an outage for this event.
- **Event Restored** contains the date and time of event restoration (i.e., when the outage area was re-energized). This field is editable except for switching jobs.

- The **Partial Restoration Log** table displays information related to restoration if the event is restored in stages. This table does not display when the event is a non-outage. This table contains the following columns:
 - The **# Cust Out Before** column contains the total number of customers out at each stage.
 - The **Operation Time** column contains the date and time of the operation. The **Device** column displays the device operated at each stage.
 - The **# Cust Restored** column contains the total number of customers that were restored at each stage.
 - The **# Cust Added** column contains the total number of customers that were added at each stage.
 - The **# Cust Out After** column contains total number of customers still without power after each stage.
 - The **Remarks** column contains any comments or remarks entered by the user.
 - The **Event #** column contains the event number associated with each partial restoration step.
- The **Est Time to Restore (HH:MM)** field is used to enter the estimated time from the current time to complete the restoration in hours and minutes. This field is used with the Update ERT button to update the Est Restore Date fields. The Est Time to Restore (HH:MM) field is not displayed when the event is a non-outage or switching job.
- The **Est Restore Date** fields display the date and time of estimated restoration. These fields are not editable. The Est Restore Date fields are not displayed when the event is a non-outage.
- The **Est Time to Repair (HH:MM)** field is used to enter the estimate time to repair in hours and minutes. This field is used when the crew on-site is only assessing the job and providing an estimate for the time it will take another crew to do the work. This field is editable, and Oracle Utilities Network Management System Storm Management uses the value, if installed. The Est Time to Repair (HH:MM) field is not displayed when the event is a switching job.
- The **Operations Event Note** is a text field for you to enter notes about the event. These are notes that are made available to the call takers to pass on any specific details about the event to new callers associated with this event.
- The **Next Crew Contact Required at** table displays when the operator next anticipates receiving contact from the associated crew(s). This table contains the following columns:
 - The **Crew ID** column of the table contains the crew name.
 - The **Date** column contains the date and time at which the next contact is expected. When the crew is initially dispatched, its contact time is set to two hours from the current time by default.
- The **Reset Selected Crew Contact Time** button resets the crew contact time to the date and time you enter in the **Date** field beside this button.
- The **Save** button saves the data you have entered in the Event Details fields.
- The **Print** button brings up the Print Preview dialog, which allows you to print the current contents of the Job Actions tab.
- The **Exit** button closes the Event Details window. You must press the **Save** button before pressing the **Exit** button if you wish to save any revisions you may have made.

Completion Actions Tab

The Completion Actions lets you view detailed information about the event, as well as enter information about the actions taken to complete the event. The first section displays summary information about the event, including the duration and scope of the event. The second section lets you enter information about the cause of the outage, the affected system and subsystem, environmental factors, and the actions that were taken to restore the outage. The third section allows you to exclude the event from the interruption indices calculations. The fourth section displays a log of changes made to the event details after the event was completed. The fifth section contains buttons that let you perform various actions associated with the event (e.g., complete the event).

For instructions on completing an event, see **Completing an Event** on page 7-18.

The Completion Actions tab displays the following fields and buttons:

- The **Event #** is the number the system has assigned to the event.
- The **Device** is the name of the device associated with the event.
- The **Switching Plan #** is the switching plan number associated with the event, if any.
- **Zone** displays the control zone(s) where the associated device is located.
- **Event Began** contains the data and time at which the event began. This field is editable except for switching jobs.
- **Est # of Cust Out** contains the estimated number of customers experiencing an outage for this event.
- **Event Restored** contains the date and time of event restoration (i.e., when the outage area was re-energized). This field is editable except for switching jobs.
- The **Details** section displays the following drop-down lists.
 - The **System** drop-down lets you specify what type of system the failure is on (e.g., overhead transmission, underground distribution, supply, etc.).
 - The **Sub-System** whether the sub-system is primary or secondary, radial or mesh, or a service drop.
 - The **Type** drop-down lets you specify the type of device that is experiencing the problem.
 - The **Failure** drop-down lets you specify the type of failure that is occurring.
 - The **Interrupting Device** drop-down lets you specify the type of interrupting device involved with the event.
 - The **Weather** drop-down lets you specify weather conditions at the time of the event.
 - The **Environment** drop-down lets you specify environmental factors that have been involved with the event, such as humidity and salt spray.
 - The **Vegetation** drop-down lets you specify the type of vegetation issues involved with the event, such as tree or vine, location (on or off ROW), and severity (contact or uprooted).
 - The **Foreign Interference** drop-down lets you specify animals, vehicles, or any other type of foreign body that has contributed to the event.
 - The **Defective Equipment** drop-down lets you specify the type of equipment defect involved with the event (e.g., age deterioration, customer equipment, etc.)
 - The **Scheduled** drop-down lets you specify whether or not the event was planned and if it was planned for safety purposes.

- The **Utility Error** drop-down lets you specify the reason for the event if it was caused by the utility company.
- The **Other** drop-down lets you specify if the cause is something other than that listed in the drop-down menus or if the cause is unknown.
- The **Remedy** drop-down lets you specify the task performed to resolve the event.
- The **Exclude from Interruption Indices** checkbox allows you to designate if you want to exclude this event from the interruption indices calculations done by the Oracle Utilities Network Management System – Trouble Reporting application. The Exclude from Interruption Indices checkbox is not displayed when the event is a switching job or planned outage.
- The **Reason for Exclusion** field provides free-form text entry of the reason for the exclusion of this event from the interruption indices. The Reason for Exclusion field is not displayed when the event is a switching job or planned outage.
- The **Post-Completion Edit Log** table displays information related to event details being edited after the event is completed. This table contains the following columns:
 - The **Who** column contains the user id of who performed the edit.
 - The **Date** column contains the date and time of the edit.
 - The **Reason** column contains a description of why the edit was made.
- The **Save** button saves the data you have entered in the Event Details fields.
- The **Complete Event** button is used to complete the event. If the required fields (Remedy and Failure) have not been entered, the Complete Event button will not become sensitized. The Complete Event button is not displayed when the event is a switching job or planned outage.
- The **Print** button brings up the Print Preview dialog, which allows you to print the current contents of the Completion Actions tab.
- The **Exit** button closes the Event Details window. You must press the **Save** button before pressing the **Exit** button if you wish to save any revisions you may have made.

Equipment Failure Tab

The Equipment Failure tab lets you record detailed information about any failed equipment related to an event. You can record and track the type of equipment that failed, the manufacturer, serial number, and voltage details.

For instructions on entering failed equipment details, see **Recording Failed Equipment Information** on page 7-18.

The Equipment Failure tab displays the following fields and buttons:

- **Item** is automatically populated with the Failure option selected in the Event Details tab.
- The **Manufacturer** drop down menu provides a list of manufacturers to select from.
- **Serial #** is an editable (alphanumeric) field for you to enter the serial number for the equipment.
- **Date of Manufacture** is an editable (date/time) field for you to enter the date of manufacture of the equipment.
- **Date of Installation** is an editable (date/time) field for you to enter the date of installation of the equipment.
- **Primary Voltage** is an editable (alphanumeric) field for you to enter the primary voltage of the equipment.

- **Secondary Voltage** is an editable (alphanumeric) field for you to enter the secondary voltage of the equipment.
- **Rating** is an editable (alphanumeric) field for you to enter the rating of the equipment. The drop-down menu beside the Rating field allows you to select the rating units.
- **Phase** allows you to designate whether the equipment is single-phase or three-phase.
- **Type** is an editable (alphanumeric) field for you to enter the type of equipment.
- **Size** is an editable (alphanumeric) field for you to enter the size of the equipment.
- The **Save** button saves your changes to the Equipment Failure tab and switches the view back to the Event Details tab.
- The **Print** button opens the Print Preview dialog, which allows you to print the current contents of the Equipment Failure tab.
- The **Exit** button switches the view back to the Event Details tab without saving any changes to the Equipment Failure tab.

Updating the Estimated Restoration Time

After a crew has arrived onsite and provided information regarding when the event will be restored, you can update this information using Event Details. To update the estimated restoration time, complete these steps:

1. Select the event in the Work Agenda window.
2. Click the **Event Details...** button. The Event Details window opens.
3. On the Job Actions tab, enter the amount of time (in hours and minutes) that the crew will take to restore the outage in the Est Time to Restore field.
4. Click the **Update ERT** button. The updated time displays in the Est Restore Date fields and other windows that display the Est Restore Date will be updated.

Recording Failed Equipment Information

To record information about a failed device, complete these steps:

1. In the Event Details window, select the failed equipment from the Failure option menu.
2. Click on the Equipment Failure tab. The Equipment Failure panel displays.
3. Select the manufacturer from the Manufacturer drop down menu.
4. Enter the serial number, dates of manufacture and installation, primary and secondary voltage, rating, type, and size of the equipment, as applicable.
5. Click on the drop-down list next to the Rating field and select the rating unit, as applicable.
6. Select the phase.
7. Click the **OK** button. The information is saved to the database for the event. The Event Details tab re-displays.

Completing an Event

After a crew has reported that an event is complete, you can update the event information in the Event Details window and complete the event. To complete an event, follow these steps:

1. Select the event in the Work Agenda window.
2. Click the **Event Details...** button. The Event Details window opens.
3. Select the appropriate options from the drop-down menus.
4. Click the **Complete Event** button. The event information is updated, the event is marked as “complete,” and the Event Details window closes.

Working with AMR Requests

This section describes how to work with AMR requests. It includes the following topics:

- **Displaying the AMR Requests List**
- **Creating AMR Requests for Service Outages**
- **Creating AMR Requests for Device Outages**
- **Creating an AMR Request Without an Outage**
- **Completing AMR Requests**
- **Canceling AMR Requests**
- **Re-submitting AMR Requests**

Displaying the AMR Requests List

To display the AMR Requests list, select **AMR Requests List...** from the File menu in Work Agenda Events List.

The AMR Requests List displays the following fields and buttons:

- The **Request #** column is the system-generated index of the request.
- The **Device** column is the start device.
- The **Feeder** column is the device's feeder.
- The **Substation** column is the device's substation.
- The **Request Date** column is the date the ping was requested.
- The **Event #** column is the outage event (or 0 if N/A)
- The **# Queried** column is the number of meters pinged.
- The **# Responded** is the total number of responses received to date.
- The **# Off** column is the number of deenergized responses received.
- The **Status** column displays ACT=active, CMP=completed, CNL=canceled.
- The **Who Requested** column displays the login user name that initiated the request.
- The **Show Event** button navigates back to the Active Trouble Events List page for the selected row's event.
- The **Complete** button completes the ping request.
- The **Cancel** button cancels the ping request and takes no further action.
- The **Exit** button closes the tool.

Creating AMR Requests for Service Outages

To create an AMR request for an existing service outage, follow these steps:

1. Select an existing PSO event in the Work Agenda.
2. Select **AMR Request...** from the Actions menu. The AMR Query Type dialog is displayed.
3. Select the AMR query type (either Simple Query or Complex Query), and click **OK**. A new AMR request is created for the meter affected by the selected event.

Note: If you attempt to create an AMR request for a customer that is part of an active AMR request, the AMR Rejected Meters dialog is displayed. This dialog lists the customer information associated with the meter that was rejected. Click **OK** to continue.

Creating AMR Requests for Device Outages

To create an AMR request for an existing device outage, follow these steps:

1. Select an existing device outage in Work Agenda.
2. Select **AMR Request...** from the Actions menu in Work Agenda. The Trouble Info tool is displayed, showing information about customers affected by the selected event.
3. Select customers whose meters should be pinged.
4. Select **AMR Confirm...** from the Actions menu in Trouble Info. The AMR Query Type dialog is displayed.
5. Select the AMR query type and click **OK**. A new AMR request is created for the selected meters.

Note: If you attempt to create an AMR request for a customer that is part of an active AMR request, the AMR Rejected Meters dialog is displayed. This dialog lists the customer information associated with the meter that was rejected. Click **OK** to continue.

Creating an AMR Request Without an Outage

To create an AMR request without an existing outage, follow these steps:

1. Double-click on a device in Viewer to bring up Control Tool.
2. Click **AMR Customer List...** in Control Tool. The Trouble Info tool is displayed, showing information about AMR-enabled customers for the selected event.
3. Select customers whose meters should be pinged.
4. Select **AMR Confirm...** from the Actions menu in Trouble Info. The AMR Query Type dialog is displayed.
5. Select the AMR query type and click **OK**. A new AMR request is created for the selected meters.

Note: If you attempt to create an AMR request for a customer that is part of an active AMR request, the AMR Rejected Meters dialog is displayed. This dialog lists the customer information associated with the meter that was rejected. Click **OK** to continue.

Completing AMR Requests

To complete an AMR request, select a row on the AMR Requests list and click the **Complete** button. The options presented to you depend on the status of the original event. See **Completing AMR Requests** on page 2-28 for a description of each option.

Canceling AMR Requests

To cancel AMR requests, select one or more rows on the AMR Request list and click the **Cancel** button. The canceled AMR requests disappear from the list of active AMR requests.

Re-submitting AMR Requests

To resubmit active AMR requests, select one or more rows on the AMR Request list and click the **Resubmit** button. A confirmation window appears asking user if the active request should be canceled before submitting new request. Click **Yes** to confirm.

Using the Event Log

The Event Log displays a list of all actions taken for an event and displays the Operations Event Notes for the event. You cannot edit existing actions, but you can add a comment.

To display the Event Log for a particular event, select a row in the Work Agenda list and click the **Event Log...** button. The Event Log opens, displaying all log entries for this event. The Operations Event Notes field is populated with the comments for this event.

Note: If you click the Event Log... button with no row selected, the Event Log window opens, but the Event field, Operations Event Notes field, and list of events are empty.

The Event Log displays the following fields and buttons:

- The **Event #** field displays the Event # loaded in Event Log. This field is editable so that a user can load a different event by number.
- The **Operations Event Notes** field displays the existing Operations Event Notes for the event.

- The  button allows you to add a note to the event. Type the note text in the blank edit field, then click this button.

Note: The Event Log does not automatically refresh, so the new note will be displayed the next time the event is loaded.

- The **Date/Time** field displays the date/time at which the log entry occurred.
- The **User** field displays the user that initiated the action.
- The **Text** field displays a description of the log entry.
- The  button displays the Print Preview dialog so you can view or print the log.
- The  button closes the Event Log window.
- The  button loads the Event Log for the event in the Event # field
- The  button clears the Event Log.
- The  button displays the device associated with the log entry in the Viewer.

Managing Crews with Web Trouble

Oracle Utilities Network Management System – Web Trouble has a number of windows that allow you to manage crews efficiently. Each window has a special function. This section describes the various windows and functions that relate to managing crews. It includes the following topics:

- **Web Trouble Crew-Related Windows**
- **Crew Administration**
- **Crew Makeup**
- **Crew Actions**
- **Crew List**
- **Active Job Info**

Web Trouble Crew-Related Windows

The table below highlights the functionality of the windows involved with crew management.

Window	Description
Crew Administration	Allows you to activate, deactivate, and delete crews.
Crew Makeup	Allows you to edit and create new crews.
Crew Actions	Provides a visual representation of crew status and classification; allows you to assign and place en route crews to events, and make crews unavailable; provides access to the Crew Makeup, Crew Information and Active Job Information windows.
Crew List	Displays a list of crews and allows you to open the Crew Information window.
Crew Information	Displays detailed crew information not shown in the Crew List and allows you to manage crew assignments.
Active Job Information	Provides basic crew information, event location, and a list of calls associated with the crew's en route/onsite event. Also allows you to mark crews as being onsite, move crews and release crews. Enables you to enter or edit operations event notes and update the estimated restoration time for the crew's en route/onsite event.

Crew Administration

The Crew Administration window lets you perform the following tasks:

- **Activating a Crew**
- **Making a Crew Inactive**
- **Deleting a Crew**

You can also use this window to bring up the **Crew Makeup** window, which is used to create and modify crews.

To open the Crew Administration window, click on the **Crew Admin** button on the Environment Manager. The following sections describe the menus, buttons, and lists displayed on the Crew Administration window.

- **Menus**
- **Crew Administration Lists**
- **Buttons**

Menus

The table below describes the Crew Administration menus.

Menu	Description
File	Options include: • New – Opens the Crew Makeup dialog box for you to create a new crew. • Edit – Opens the Crew Makeup dialog box for the crew you have selected. From here you can make edits to the crew. • Delete – Permanently deletes the selected crew. • Exit – Closes the Crew Administration window.
Actions	Options include: • Activate – Activates the selected crew • Deactivate – Deactivates the selected crew • Toggle Mobile Off – Allows the user to override the mobile flag setting of “Yes” for a mobile crew in order to activate it from the Oracle Utilities Network Management System • Toggle Mobile On – Allows the user to turnoff the override of the mobile flag and set it back to “Yes”
Help	Allows you to display the About Web Trouble dialog.

Crew Administration Lists

The table below describes the Crew Administration lists.

List	Description
Inactive	Displays all the inactive crews assigned to your subscribed control zone(s). To view information about an inactive crew, select the crew name in this list. The information appears in the fields at the bottom of the window.
Active	Displays all the active crews assigned to your subscribed control zone(s). To view information about an active crew, select the crew name in this list. The information appears in the fields at the bottom of the window.

Buttons

The table below describes the Crew Administration buttons.

Button	Description
(Forward Arrow)	Activates the selected inactive crew and moves the crew name to the Active list. This button is disabled when an active crew is selected.
(Backward Arrow)	Inactivates the selected active crew and moves the crew name to the Inactive list. This button is disabled when an inactive crew is selected.
Activation/ Deactivation Time	Brings up a calendar dialog, allowing you to specify a date and time other than the current as the activation/deactivation time for the crew.

Activating a Crew

To activate a crew, complete these steps:

1. In the Crew Administration window, select the crew you want to activate in the Inactive list. The information for that crew displays in the fields at the bottom of the window.
2. To specify an activation date/time for the crew (other than the current date/time, which is the default), click on the  button next to the Activation Time. In the calendar dialog, specify a date/time and click **OK**. The Activation Time field is populated with the selected date/time.
3. Click on the forward arrow button to move the crew to the Active list. The crew becomes active and the name of the crew moves from the Inactive list to the Active list.

Note: You cannot activate crews that are mobile crews (Mobile Flag = “Yes”) without first overriding the mobile flag setting. This is done by selecting the mobile crew in the Inactive list and then selecting the Toggle Mobile Off option from the Actions menu.

Making a Crew Inactive

To deactivate a crew, complete these steps:

1. In the Crew Administration window, select the crew you want to deactivate in the Active list. The information for that crew displays in the fields at the bottom of the window.
2. If desired, click on the  button next to the Deactivation Time field to bring up the calendar dialog and specify a date/time other than the current to use as the deactivation time for the crew. Click the OK button on the calendar dialog to close it and populate the Deactivation Time field.
3. Click on the backward arrow button to move the crew to the Inactive list. The crew becomes inactive and the name of the crew moves from the Active list to the Inactive list.

Note:

- You cannot make an assigned or en route/onsite crew inactive.
- You cannot deactivate mobile crews (Mobile Flag = “Yes”) from within Oracle Utilities Network Management System. Only mobile crews that have had their mobile flag overridden (Mobile Flag = “No (Overridden)”) may be deactivated from within Oracle Utilities Network Management System.

Deleting a Crew

To delete a crew, complete these steps:

1. If the crew is active, you must first deactivate it using the **Making a Crew Inactive** procedure listed above.
2. With the crew highlighted in the Inactive list, select **Delete** from the File menu. A dialog box appears asking you to confirm the delete.
3. Click **OK**. The crew is deleted from the system.

Crew Makeup

The Crew Makeup window allows you to perform the following tasks:

- **Creating a New Crew**
- **Removing Personnel from a Crew**
- **Removing a Vehicle from a Crew**
- **Editing a Crew**

To open the Crew Makeup window, select **New...** or **Edit...** from the File menu in the Crew Administration window or click either the **New...** or **Edit...** button in the Crew Actions window.

The Crew Makeup window displays the following fields and buttons:

- The **Crew ID** field displays the alphanumeric ID that identifies the crew.
- The **Mobile #** field displays the mobile telephone or radio number.
- The **Pager #** field displays the pager number.
- The **Contact** field displays the Name of the contact person for the crew.
- The **Crew Size** field displays the Number of members of the crew. The crew size is initially set to zero.
- The **Type** drop-down allows you to select the type of crew (e.g., Line, Eval, Trouble).
- The **Temp/Perm** drop-down allows you to define the crew as either temporary or permanent. When a crew is set to temporary, you would normally delete it when it is deactivated.
- The **Control Zone** field displays the control zone that the crew is assigned to. When you click the **Edit...** button, a Control Zone dialog box opens letting you assign the crew to the selected control zone.
- The **Personnel** list displays the Lists the name and job title of each crew member. You can add crew members by clicking the **Add...** or **Select Personnel...** buttons. You can remove a crew member by selecting their row in the Personnel table and clicking the **Remove** button.
- The **Vehicles/Equipment** list displays the vehicles or equipment assigned to the crew. You can add vehicles or equipment by clicking the **Add...** or **Select Personnel...** buttons. You can remove a vehicle or piece of equipment by selecting the item and clicking the **Remove** button.

Buttons

- The **Edit...** button opens the Control Zones dialog box, allowing you to select the Control Zone the crew will be assigned to.
- The **Add...** (Personnel) button opens the Add Personnel dialog box, allowing you to enter a crew member's name and select their job type.
- The **Select Personnel...** button opens the Select Personnel dialog box, allowing you to select from a pre-defined list of personnel.

- The **Remove...** (Personnel) button removes the selected individual from the personnel list.
- The **Add...** (Vehicles/Equipment) button opens the Add Vehicle/Equipment dialog box, allowing you to assign vehicles to the crew.
- The **Select Vehicles/Equipment...** button opens the Select Vehicles/Equipment dialog box, allowing you to select from a pre-defined list of vehicles/equipment.
- The **Remove...** (Vehicles/Equipment) button removes the selected vehicle from the Vehicles/Equipment list.
- The **OK** button saves the crew changes and closes Crew Makeup.
- The **Cancel** button closes Crew Makeup without saving any changes.

Creating a New Crew

To create a new crew, complete these steps:

1. Open the Crew Makeup window either by selecting **New...** from the File menu in Crew Administration or by clicking the **New...** button in Crew Actions.
2. Enter the Crew ID, mobile and pager numbers, and contact.
3. Select the crew type and temporary or permanent from the drop-down lists.
4. Click the **Edit...** button to open the Control Zone dialog box. Select a control zone and click **OK**.
5. Click the **Add...** (Personnel) button to open the Add Personnel dialog box. Enter a crew member's name and select their job title, then click **OK**.

Or,

Click the **Select Personnel...** button to open the Select Personnel dialog box. Select one or more rows from the Select Personnel dialog (using the <Ctrl> and/or <Shift> keys), then click **OK**.

6. Repeat the previous step until all crew members are added.
7. Click on the **Add...** (Vehicles/Equipment) button to open the Add Vehicle/Equipment dialog box. Select the vehicle type, and then click **OK**.

Or,

Click the **Select Vehicles/Equipment...** button to open the Select Vehicles/Equipment dialog box. Select one or more rows from the Select Vehicles/Equipment dialog (using the <Ctrl> and/or <Shift> keys), then click **OK**.

8. Repeat the previous step until all vehicles are added.
9. Click **OK** on the Crew Makeup dialog to create the crew.

Removing Personnel from a Crew

To remove an individual from a crew you have open in Crew Makeup, select his or her name in the Personnel list and click **Remove**. The name disappears from the Personnel list.

Removing a Vehicle from a Crew

To remove a vehicle from a crew you have open in Crew Makeup, select the vehicle from the Vehicles/Equipment list and click **Remove**. The vehicle disappears from the Vehicles/Equipment list.

Editing a Crew

To edit a crew, complete these steps:

1. Open the Crew Makeup window either by selecting **Edit...** from the File menu in Crew Administration or by clicking the **Edit...** button in the Crew Actions window.
2. Make the changes to the crew.
3. Click **OK** on the Crew Makeup dialog to save the changes.

Crew Actions

The Crew Actions window allows you to assign and place en route crews to an event, change the crew's availability, and access the Crew Makeup, Crew Information, and Active Job Information windows.

The Crew Actions window opens by default when you login to Oracle Utilities Network Management System Web Workspace. If it has been closed, you can open it again by clicking on the **Crew Actions** button on the Environment Manager.

From the Crew Actions window, you can perform the following tasks:

- **Assigning a Crew**
- **Placing a Crew En Route Using the Crew Actions Window**
- **Changing Crew Availability**
- **Finding the Event a Crew is En Route To**
- **Filtering the Crew Actions Window**
- **Using the Crew Info Window**
- **Unassigning a Crew**
- **Placing a Crew En Route to an Assigned Event**
- **Updating Event Information**
- **Moving a Crew**
- **Releasing a Crew from an Event**

For a description of the fields and buttons on the Crew Actions window, see the next topic.

Crew Actions Window

The Crew Actions window displays buttons that are color-coded to represent the status of each crew. The table below describes the Crew Actions window color codes.

Color	Status
Green	En Route
Dark Green	Onsite
Yellow	Unavailable
Cyan	Assigned
White	Available

The Crew Actions window displays the following action buttons:

- The **New...** button opens the Crew Makeup window for you to create a new crew.
- The **Edit...** button opens the Crew Makeup window for you to edit the selected crew.
- The **View** button will focus Viewer 1 on the device associated with the en route/onsite event for the selected crew.
- The **Availability...** button opens the Update Crew Availability dialog box where you can change the availability of the selected crew.
- The **Assign** button assigns the selected crew to the event selected in the Trouble Events list of the Work Agenda.
- The **En Route** button places the selected crew en route to the event selected in the Trouble Events list of the Work Agenda window.
- The **Active Job Info...** button opens the Active Job Info window for the selected crew.
- The **Crew Info...** button opens the Crew Info window for the selected crew.
- The **Filter** button opens the Crew Filter dialog box where you can select the filter criteria by which the crew icons are displayed. You can filter by crew type.
- The **Exit** button closes the Crew Actions window.

Assigning a Crew

You do not have to assign a crew to an event before placing it en route. Assigning merely lines up the event for the crew to work later. To assign a crew to an event, complete these steps:

1. In the Trouble Events list of the Work Agenda, locate the event you want to assign the crew to. Select the row of that event.
2. Select the crew you want to assign the event to in the Crew Actions window.
3. Click the **Assign** button. The button for the crew turns cyan (unless it is currently unavailable, i.e., yellow, or currently en route, i.e., green), and the event information is automatically entered into the Crew Info window for the crew.

Note: You can assign multiple events to a single crew. You can also assign multiple crews to a single event.

Placing a Crew En Route Using the Crew Actions Window

To place a crew en route to an event, complete these steps:

1. In the Trouble Events list of the Work Agenda, locate the event you want to place the crew en route to. Select the row of that event.
2. Select the crew you want to place en route in the Crew Actions window. The crew cannot already be en route to another event or be unavailable.
3. Click the **En Route** button. The icon for the crew turns green, and the event information is automatically entered into the Crew Info and Active Job Info windows for the crew.

Note: You can place multiple crews en route to a single event.

Changing Crew Availability

Making a crew available/unavailable is different from making it active/inactive. When a crew is inactive (e.g., finished working for the day), the crew does not appear in the Crew Actions or Crew List windows. When a crew is unavailable, (e.g., at lunch), it appears in the Crew Actions window

(in yellow). You can assign an unavailable crew, but you cannot place it en route. See **Activating a Crew** and **Making a Crew Inactive** for more information on active/inactive crews.

To change a crew's availability, complete these steps:

1. Select the crew you want to change in the Crew Actions window. You cannot change an en route/onsite crew.
2. Click on the **Availability...** button. The Update Crew Availability dialog box opens.
3. Click on the **Available** button to make the crew available or the **Unavailable** to make it unavailable.
4. If you are making an available crew unavailable, click in the Description field and type a brief reason for the change (e.g., on break).
5. Click **OK**. The crew icon changes to yellow.

Note: You can assign events to both available and unavailable crews.

Finding the Event a Crew is En Route To

To find the event a crew is en route to, select the crew in the Crew Actions window and click the **View** button. The event row is highlighted in the Work Agenda Trouble Events list, and Viewer 1 focuses on the device associated with the en route event.

Note: The Work Agenda event row will only be highlighted if the Work Agenda window is open and the event is on the list you currently have displayed in the Work Agenda window. The Viewer will only focus on the device if you have the Viewer 1 window open.

Filtering the Crew Actions Window

To filter the crews that appear in the Crew Actions window, complete these steps:

1. Click the **Filter...** button in the Crew Actions window. The Crew Filter dialog box appears.
2. If you want to exclude certain crew types, click on the types you do not want to view.
3. Do one of the following:
 - Click **Apply** to view the changes in the Crew Actions window without closing the Crew Filter dialog box, or
 - Click **OK** to close the dialog box and apply the filters you've selected.

Crew List

The Crew List window displays a list of all crews. Each row in the list is color-coded to indicate status.

To open the Crew List window, click the **Crew List** button on the Environment Manager.

The table below describes the Crew List color codes.

Color	Status
Green	En Route
Dark Green	Onsite
Yellow	Unavailable
Cyan	Assigned
White	Available

The Crew List contains the following fields and buttons:

- The **Control Zone** column contains the name of the control zone the crew is assigned to.
- The **Crew ID** column contains a string that identifies the crew.
- The **Crew Type** column contains the type of crew (e.g., Eval, Service, Line, etc.).
- The **Contact** column contains the contact name for the crew.
- The **Crew Size** column contains the number of crew members.
- The **Feeder** column contains the feeder for the device where the crew is en route/onsite.
- The **Device** column contains the name of the device where the crew is en route/onsite.
- The **Est Restore Time** column contains the date and time when the event where the crew is en route/onsite is estimated to be restored.
- The **# Asgn** column contains the number of events assigned to the crew.
- The **Crew Hrs Wkd** column contains the length of time the crew has been active.
- The **Crew Info...** button opens the Crew Info window for the selected crew. (See **Crew Info** on page 7-30.)
- The **Exit** button closes the Crew List window.

Crew Info

The Crew Info window displays detailed crew information not shown in Crew Actions or the Crew List. It allows you to unassign a crew or access the Active Job Info window to place a crew en route to any of its assigned events.

Crew Info topics include:

- **Using the Crew Info Window**
- **Unassigning a Crew**
- **Placing a Crew En Route to an Assigned Event**

Using the Crew Info Window

To open the Crew Info window, do one of the following:

- From the Crew List window, select the row of the crew you want to view and click on the **Crew Info...** button.
- From the Crew Actions window, select the icon of the crew you want to view and click on the **Crew Info...** button.

The Crew Info window is divided into sections:

- The top section displays information about the selected crew.
- The middle section displays information about the event the crew is *en route* to, if any.
- The bottom section displays information about the events *assigned* to the crew, if any.

The Crew Info window contains the following fields and buttons:

- The **Crew ID** field displays the string that identifies the crew.
- The **Mobile #** field displays the crew's mobile phone number.
- The **Pager #** field displays the crew's pager number.
- The **Contact** field displays the name of the crew's contact person.
- The **Type** field displays the type of crew (e.g., Eval, Service, Line, etc.).

- The **Temp/Perm** field displays whether the crew is a temporary crew or a permanent crew.
- The **Control Zone** field displays the control zone the crew is assigned to.
- The **Personnel** field displays the names of all the crew members and their job titles.
- The **Vehicles/Equipment** field displays the vehicles assigned to the crew.
- The **Event #** field displays the event number of the event where the crew is en route/onsite.
- The **Feeder** number displays the name of the feeder for the device where the crew is en route/onsite.
- The **Est Restore Time** field displays the date and time when the event where the crew is en route/onsite is estimated to be restored.
- The **Device** field displays the name of the device related to the event.
- The **Event #** column contains the event number of the event the crew is assigned to.
- The **Assign Date** column contains the date the crew was assigned to the event.
- The **Assign Time** column contains the time the crew was assigned to the event.
- The **Feeder** column contains the name of the feeder involved in the event.
- The **Device** column contains the name of the device related to the event.
- The **# Calls** column contain the number of customer calls received for the event.
- The **# Out** column contains the estimated number of customers experiencing an outage for the event.

Buttons

- The **Drop Assignment** button removes the selected event from the list of crew assignments.
- The **Place En Route** button opens the Active Job Info window for you to place the crew en route to an event on the assigned list. You must select an event on the assigned list before you click this button.
- The **Cancel** button closes the Crew Info window.

Unassigning a Crew

To drop an assignment from a crew, complete these steps:

1. In the Crew Information window, select the event from the Current Assignments table. The buttons at the bottom of the window become enabled.
2. Click the **Drop Assignment** button. A message box opens asking if you are sure you want to remove the assignment.
3. Click **OK**.
 - The crew is unassigned from the event.
 - The event is removed from the list of crew assignments.
 - The crew button/crew row changes to white (if the crew is not en route/onsite, unavailable, or assigned to another event).

Placing a Crew En Route to an Assigned Event

If a crew has been assigned to an event, you can place the crew en route to the event using the Crew Info window.

To place the crew en route to the assigned event, complete these steps:

1. In the Crew Information window, select the event from the Current Assignments table. The buttons at the bottom of the window become enabled.
2. Click the **Place En Route** button. The Active Job Info window opens and the crew is placed en route to the event.

Active Job Info

The Active Job Info window provides basic crew information, as well as information for the event where they are en route to/onsite at. It allows you to move and release crews. You can also use the Active Job Info window to record that a crew has arrived onsite, enter an estimated restoration time, and add an operations event note.

This section includes the following topics:

- **Using the Active Job Info Window**
- **Updating Event Information**
- **Moving a Crew**
- **Releasing a Crew from an Event**

Using the Active Job Info Window

You can open the Active Job Info window either from the Crew Actions window or while placing a crew en route from the Crew Info window.

To open the Active Job Info window from Crew Actions, complete these steps:

1. In the Crew Actions window, select the en route/onsite crew you want to view active job information about.
2. Click the **Active Job Info...** button. The Active Job Info window opens.

To open the Active Job Info window from Crew Info, complete these steps:

1. In the Crew Info window, select the row of the assigned event you want to place the crew en route to.
2. Click on the **Place En Route** button. The Active Job Info window opens.

The Active Job Info window displays the following fields and buttons:

- The **Crew ID** field displays the string that identifies the crew.
- The **Contact** field displays the name of the crew's contact person.
- The **Event #** field displays the event number of the event where the crew is en route/onsite.
- The **Feeder** number displays the name of the feeder for the device where the crew is en route/onsite.
- The **Device** field displays the name of the device related to the event.
- The **Not Onsite** drop-down menu is a toggle for you to designate whether the crew has arrived onsite yet or not. The field to the right of the menu is editable and populates with the current time when you toggle the crew to **Onsite**. You may use the calendar button to the right of the date/time field to change the onsite time from something other than the current time.

- The **Est Time to Restore (HH:MM)** field allows you to enter the estimated amount of time (in hours and minutes) for the event to be restored. If you enter a value here (to the left of the Update Time button) and then click the **Update Time** button, the system updates the Est Time to Restore (displayed to the right of the button) based on the value you entered. You can also enter the Est Time to Restore field directly if you prefer.
- The **Operations Event Note** field allows you to enter notes about the event.

Buttons

- The **OK** button saves the changes you have made and closes the Active Job Info window.
- The **Move Crew...** button opens the Choose Work location dialog box where you enter the location you want to move the crew to by selecting a device in the Viewer.
- The **Release Crew** button releases the crew from the event and closes the Active Job Info window.
- The **Cancel** button closes the Active Job Info window without saving any changes to the estimated restore time or Operations Event.

Note: If you moved the crew, that change is still saved.

Updating Event Information

To update event information, complete these steps:

1. Open the Active Job Info window by selecting an en route/onsite crew in Crew Actions and clicking the **Active Job Info...** button.
2. To update the Estimated Restore Date or time, enter the Estimated Time to Restore and click the **Update Time** button. The Est Restore Date and time will change accordingly. You can also directly edit the estimated restore date and time field.
3. To add event notes, enter them in the Operations Event Notes field.
4. Click **OK**. The Active Job Info window closes and your changes are saved.

Moving a Crew

Moving a crew does not change the event the crew is en route to/onsite at, rather, it moves the crew to another device location and keeps it associated with the same event. By default, Oracle Utilities Network Management System locates a crew at the predicted or confirmed clearing device so that graphically the crew appears to be at the same location as the outage symbol in the Viewer. In some cases, the crew may actually have to work at a location different from the clearing device. It is not required or necessary to move the crew, but moving the crew to the actual device location is helpful in keeping more accurate track of what is going on in the field.

To move a crew, complete these steps:

1. Open the Active Job Info window for the crew you want to move.
2. Click the **Move Crew...** button. The Choose Work location dialog box opens.
3. Select the new device location in the Viewer window, or select an event in from the Trouble Events list in the Work Agenda that has the same device as the one where the crew is now working.
4. Click **OK**. The crew symbol moves on the Viewer map, and the crew's Device updates in the Active Job Info, Crew Info, and Crew List windows. The crew remains en route to/onsite at that same event.

Releasing a Crew from an Event

To release a crew from an en route/onsite event, complete these steps:

1. Open the Active Job Info window for the crew you want to release.
2. Click the **Release Crew** button. The following occurs:
 - The crew is released from the event.
 - The crew's active job information is removed from the Crew List window.
 - The crew button/row changes to white (if the crew is not assigned to another event).
 - The Active Job Info window closes.

Using Drag and Drop

Oracle Utilities Network Management System Web Workspace supports drag and drop between Crew Actions and the Viewer, Crew List and the Viewer, as well as between the Viewers or within the Viewer itself.

Placing a Crew En Route

You can place a crew en route to a device in the Viewer either by dragging a crew icon from the Crew Actions or Crew List window to the affected device in the Viewer, or by dragging a crew symbol on another device already in a Viewer to the affected device.

Note: You can cancel the in-progress dispatch or move of a crew by pressing the <Esc> key on your keyboard, or simply dragging the crew outside the Viewer and then releasing the mouse button.

Placing a Crew En Route from Crew Actions or Crew List

To place a crew en route from Crew Actions or Crew List using drag and drop, complete these steps:

1. Focus the Viewer on the device that has the event you wish to place the crew en route to.
2. In the Crew Actions or Crew List window, click on an undischarged, available crew and drag your cursor into the Viewer window, positioning it over the device associated with the event you wish to place the crew en route to.
3. When you see the desired device highlighted in the Viewer, release the mouse button.
 - If multiple events are on the device, a dialog prompts you to specify which event the crew should be placed en route to. Select the appropriate event.
 - The crew symbol appears at the device. The Crew Actions, Crew List, and Work Agenda windows update to indicate that the crew is now en route to the event.

Placing a Crew En Route from the Viewer

To place a crew en route from the Viewer using drag and drop, complete these steps:

1. Focus the Viewer such that you can see both the symbol of the crew you wish to re-dispatch and the event you wish to re-dispatch the crew to. Alternatively, you can open two Viewers and focus one Viewer on the crew's current location, and the other Viewer on the new location.
2. In the Viewer window, click and drag the crew symbol to the device that has the event you wish to place the crew en route to.

3. When you see the device highlighted in the Viewer, release the mouse button.
 - If multiple events are on the device, a dialog prompts you to specify which event the crew should be placed en route to. Select the appropriate event.
 - The crew symbol appears at the device. The crew is released from its previous event and placed en route to the new event. The Crew Actions, Crew List, and Work Agenda windows update to indicate that the crew is now en route to the new event and no crew is en route to the old event.

Moving a Crew with Drag and Drop

Moving a crew does not change the event the crew is en route to, rather, it moves the crew to another device location and keeps it associated with the same event. By default, Oracle Utilities Network Management System locates a crew at the predicted or confirmed clearing device so that graphically the crew appears to be at the same location as the outage symbol in the Viewer. In some cases, the crew may actually have to work at a location different from the clearing device. You are not required to move the crew to the actual device location, but moving the crew can help you keep more accurate track of what is going on in the field.

Moving a Crew from Crew Actions or Crew List

To move a crew from Crew Actions or Crew List using drag and drop, complete these steps:

1. Focus the Viewer on the device you wish to relocate the crew to.
2. In the Crew Actions or Crew List window, click the en route crew and drag your cursor into the Viewer window, positioning it over the device that has the event you wish to relocate the crew to.
3. When you see the relocation device highlighted in the Viewer, release the mouse button. A confirmation dialog appears.
4. Click **OK** dialog if you wish to complete the move or **Cancel** if you wish to cancel the move.

Moving a Crew from the Viewer

To move a crew in the Viewer using drag and drop, complete these steps:

1. Focus the Viewer such that you can see both the symbol of the crew you wish to relocate and the device you wish to relocate the crew to. Alternatively, you can open two Viewers and focus one Viewer on the crew's current location, and the other Viewer on the new location.
2. In the Viewer window, click and drag the crew symbol to device that you wish to relocate the crew to.
3. When you see the relocation device highlighted in the Viewer, release the mouse button. A confirmation dialog appears.
4. Click **OK** on the dialog if you wish to complete the move or **Cancel** if you wish to cancel the move.

Managing Calls with Web Trouble

Oracle Utilities Network Management System – Web Trouble includes windows that help you manage trouble calls. This section describes those windows and how to perform basic call management functions. It includes the following topics:

- **Changing Rule Sets**
- **Using the Trouble Info Window**
- **Viewing Call Info**
- **Ungrouping Calls**
- **Moving Customers to a Different Device**

Changing Rule Sets

Rule sets are a collection of analysis rules that Oracle Utilities Network Management System Trouble Management uses to determine how and when certain devices will be predicted out and how fast a prediction moves upstream. For example, a rule set might cause fuses to be predicted out if three or more service outages are predicted on downstream transformers. Meanwhile, circuit breakers might require five downstream device outages to cause an upstream prediction to them.

You can change the rule set for control zone(s) over which you have authority over using the Authority window.

To change the rule set for a control zone, complete these steps:

1. Click the **Authority** button in the Environment Manager. The Authority window opens.
2. Select the row of the control zone you want to change.
3. Click the **Change Rule Set...** button. A dialog box opens.
4. In the Rule Sets Available list, select the rule set you want to change to.
5. Click the **OK** button. The rule set for that control zone is updated. Oracle Utilities Network Management System Trouble Management will begin grouping and prioritizing new trouble calls in that control zone based on the new rule set.

Note: You can only change the rule set for one row at a time.

Using the Trouble Info Window

Oracle Utilities Network Management System Web Trouble displays customer information about trouble events using the Trouble Info window. The Trouble Info window has two main views. The view that opens initially depends on from where you open the window.

The table below describes the various Trouble Info views.

View	Description
Callers View	Lists all calls associated with an event.
Customers View	Lists all the customers: • located on/downstream from a given device, when accessed via the Control Tool • affected by a given event, when accessed via the Work Agenda Trouble Event lists

View	Description
Supply Points View	Lists all the supply points associated with the event, or downstream from the selected device.
AMR Customers View	Depending upon where it's accessed from, the AMR Customers view lists all the AMR-enabled meters located on/downstream from a given device or affected by a given event.

Trouble Info Toolbar

The Trouble Info toolbar provides a shortcut to many of the options available from the Trouble Info menus. The following table describes the buttons on the Trouble Info Toolbar.

Button	Description
 Callers	Changes the Trouble Info window to the Callers View , and is disabled when in the Callers View.
 Customers	Changes the Trouble Info window to the Customers View , and is disabled when in the Customers View.
 Supply Points	Changes the Trouble Info window to the Supply Points View .
 	Changes the Trouble Info window to the AMR Customers View .
 Call Info	Opens the Call Info Window for the selected call.
 Print	Opens the Print Preview dialog, allowing you to print the current contents of the current view.
 Exit	Closes the Trouble Info window.

Moving the Toolbar

The toolbar appears below the menu bar by default. You can also dock it on the left side, right side, or bottom of the window, or display the toolbar in its own window. To move the toolbar, complete these steps:

1. Click on the toolbar.
2. Drag it to the new position while holding down the mouse button.
3. Release the mouse button. The toolbar moves to the new location.

Note: If you release the mouse button when the toolbar is near the left of the Trouble Info window, the toolbar docks on that side of the Trouble Info window, rather than displaying in its own window. The outline of the toolbar changes from black to red when you've dragged it to a position where it will dock itself.

If the toolbar is in its own window, you can move it back to its last docked position by clicking the **X** in the upper right hand corner of the toolbar window.

Trouble Info Menus

The following sections describe the Trouble Info menus.

File Menu

The following table describes the options available on the File menu.

- **Callers** - Allows you to toggle to the **Callers View**, if not currently in that view.
- **Customers** - Allows you to toggle to the **Customers View**, if not currently in that view.
- **Print** - Opens up the Print Preview dialog, which allows you to print out the contents of the currently selected view.
- **AMR Customers** - Allows you to toggle to the **AMR Customers View**, if not currently in that view. If AMR Customers is the currently selected view, the view is refreshed.
- **Exit** - Closes the Trouble Info window.

Actions Menu

The following table describes the options available on the Actions menu.

- **Call Info...** - Opens the Call Info window for the selected call.
- **Ungroup** - Opens the Ungroup dialog box, allowing you to ungroup the selected call. from the event.
- **Unassociate** - Opens the Unassociate dialog box, allowing you to unassociate the selected call from this device and (optionally) associate it with a new device.
- **Move Customer...** - Opens the Move Customer dialog box, allowing you to move a customer to a new device.
- **AMR Confirm...** - Opens the AMR Query Type dialog, allowing you to request meter pings from AMR system for the selected customers.

Help Menu

The following table describes the options available on the Help menu.

- **About Web Trouble** - Opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Web Gateway that the application is using.

Callers View

The Trouble Info Callers view lists all calls associated with an event. Open the Callers view by selecting an event in the Trouble Events List (in the Work Agenda window) and clicking the **Info...** button.

You can perform the following task from the Callers View:

- **Ungrouping Calls**
- **Moving Customers to a Different Device**

The Callers View displays the following fields:

- The **Event #** field displays the number assigned to the event by the system.
- The list title displays how many calls the event has.
- The **Feeder** field displays the feeder on which the affected device resides.
- The **Event Device** field displays the name of the device associated with the event.
- The **Device Type** field displays the type of device associated with the event.
- The **Customer Comment** field displays any customer comments that were entered by the call taker for the selected call.
- The **Clues** column displays the trouble code clues received for the call.
- The **Device** column displays the name of the customer's service device.
- The **Name** column displays the customer's name.
- The **Telephone** column displays the customer's telephone number.
- The **Date** column displays the date of the customer's call.
- The **Time** column displays the time of the customer's call.
- The **Crit** column displays the customer type value of the customer.
- The **Cmt** column displays "Y" if the call contains customer comments and "N" if it does not.
- The **Address** column displays the customer's address.
- The **Account #** field displays the customer's account number.

Ungrouping Calls

You can ungroup calls that were automatically grouped by the system as a result of trouble analysis rules. For example, you would ungroup a call from an event that is not actually related to the event, but rather should be its own non-groupable event. To ungroup calls, complete these steps:

1. Select the event row in the Trouble Events list (in the Work Agenda window) you want to ungroup and click the **Info...** button. The Trouble Info window opens to the Callers view.
2. Select the row in the Calls Table for the call you want to ungroup.
3. Select **Ungroup** from the Actions menu. The Ungroup dialog box opens with the device related to the event populated in the Device field.
4. Click **OK**.
 - In the Work Agenda, the call is ungrouped and a new event row appears in the Trouble Events list with the appropriate device association.
 - In the Work Agenda, the ungrouped call is removed from the # Calls column for the event it was ungrouped from.

Note: Events that are manually ungrouped will not be automatically grouped again by the system. However, you can manually group them again.

Moving Customers to a Different Device

You can move a customer to a different device if you discover the customer is associated with an incorrect device. To move a customer to a different device, complete these steps:

1. Select an event in the Trouble Events list (in the Work Agenda window) with at least one call.
2. Select the **Info...** button. The Trouble Info window opens to the Callers view.
3. Select a row in the Calls table.
4. Select **Move Customer...** from the Actions menu. The Move Customer dialog appears.
5. Select a device in the Viewer or select a Work Agenda row with the desired device. The New Device field on the Move Customer dialog is populated.
6. Click **OK**. The Move Customer dialog closes.

Note: If the selected customer was previously moved to a new device, a confirmation dialog is displayed. Do one of the following:

- Click **Yes** to continue and overwrite the existing customer move record.
 - Click **Cancel** to cancel your selection and return to the Move Customer dialog to select a different device.
 - Click **No** to abort the move completely.
7. Select the **Close** icon in Trouble Info to close the Trouble Info. The call is re-analyzed using the new device information. If it does not re-predict into the same event, the # Calls and # Customers for the original event are adjusted. Either the call is grouped into another existing event or a new event is created.

Note: Moving a customer to a new device is a temporary change since Oracle Utilities Network Management System Trouble Management does not directly modify the customer information. However, Oracle Utilities Network Management System Trouble Management will track the change and successive calls for that customer will be associated with the new device. Your technical department must make permanent changes to the customer information.

Customers View

Depending upon where it's accessed from, the Trouble Info Customers view lists all of the customers located on/downstream from a given device, or all of the customers affected by a given event. Open this view by clicking on the **Customers** button in the Callers view.

The Customers View displays the following fields:

- The **Event #** field displays the number assigned to the event by the system. This field is not displayed if the Customers View is accessed from the **Customer List...** button of the Control Tool.
- The list title displays either how many customers are located on/downstream from a given device or affected by a given event, depending upon from where the view is accessed.
- The **Feeder** field displays the feeder on which the associated device resides. This field is not displayed if the Customers View is accessed from the **Customer List...** button of the Control Tool.
- The **Event Device** field displays the name of the associated device. This field is not displayed if the Customers View is accessed from the **Customer List...** button of the Control Tool.
- The **Device Type** field displays the type of the associated device. This field is not displayed if the Customers View is accessed from the **Customer List...** button of the Control Tool.
- The **Device** column displays the name of the customer's service device.
- The **Name** column displays the customer's name.

- The **Telephone** column displays the customer's telephone number.
- The **Crit** column displays the customer type value of the customer.
- The **Address** column displays the customer's address.
- The **Account #** column displays the customer's account number.

Supply Points View

Depending upon where it's accessed from, the Trouble Info Supply Points view lists all of the supply Points located downstream from a given device, or all of the supply points associated with a given event. Open this view by clicking on the **Supply Points** button in the Callers or Customers view.

The Supply Points View displays the following fields:

- The **Event #** field displays the number assigned to the event by the system.
- The list title displays how many calls the event has.
- The **Feeder** field displays the feeder on which the affected device resides.
- The **Event Device** field displays the name of the device associated with the event.
- The **Device Type** field displays the type of device associated with the event.
- The **Device** column displays the name of the customer's service device.
- The **# Customers** column displays the sum of all customers attached to the supply point.
- The **LSE** column displays the sum of all LSE customers attached to the supply point.
- The **EMR** column displays the sum of all EMR customers attached to the supply point.
- The **MED** column displays the sum of all MED customers attached to the supply point.
- The **KEY** column displays the sum of all KEY customers attached to the supply point.
- The **# Crit Tot** column displays the sum of all critical customers attached to the supply point.
- The **Control Zone** column displays the supply point's control zone name.
- The **Grp** column displays the pending action for the row:
 - TBG – To Be Grouped
 - TBU – To Be Ungrouped
 - FAIL – Action failed

See **Graphical Grouping (Supply Point Selection Mode)** on page 7-11 for more information.

AMR Customers View

Depending upon where it's accessed from, the Trouble Info - AMR Customers view lists all the AMR-enabled meters located on/downstream from a given device or affected by a given event.

To open this view, click on the **AMR Customers** button in the Callers or Customers view or select AMR Customers from the File menu in Trouble Information. The AMR Customers view displays the following fields and buttons:

- The **Event #** field displays the number assigned to the event by the system.
- The list title displays either how many AMR Customers are located on/downstream from a given device, affected by a given event, or affected on a given device, depending upon from where the view is accessed.
- The **Updated** field displays the date and time at which the Customers view was last populated, as this list is not dynamically updated.

- The **Feeder** field displays the feeder on which the associated device resides.
- The **Event Device** field displays the name of the associated device.
- The **Device Type** field displays the type of the associated device.
- The **Device** column displays the name of the customer's service device.
- The **Phases** column displays the phases of the customer's service device.
- The **Name** column displays the customer's name.
- The **Telephone** column displays the customer's telephone number.
- The **Crit** column displays the customer type value of the customer.
- The **# Calls** column displays how many times a customer has called for the event.
- The **Address** column displays the customer's address.
- The **Account #** column displays the customer's account number.
- The **Meter #** column displays the customer's meter number.
- The **Request #** column displays the index of the last AMR ping request.
- The **Request Date** column displays the date of the last AMR ping request.
- The **Requested By** column displays the login name of the user who made the last AMR ping request.
- The **Completed By** column displays the login name of the user who completed the last AMR ping request.
- The **Received Date** column displays the date of the last AMR reading.
- The **Probability** column displays the probability percentage from the last AMR reading.
- The **Status** column displays the ON/OFF response from the last AMR reading.

See **Working with AMR Requests** on page 7-19 for more information.

Viewing AMR Customers for a Device

To view AMR customers for a particular device:

1. Select a device in Viewer and open the device in the Control Tool.
2. Click the **AMR Customers...** button in the Control Tool. Trouble Info opens, and the AMR Customers table is populated with the customer information for AMR-enabled customers on the selected device.

Viewing Call Info

Detailed information about a logged call is displayed in the Call Info window. An event (represented by a single row in the Trouble Events list of the Work Agenda) can have multiple calls if calls have been grouped to one event. The Call Info window may be accessed from the Trouble Info window. You cannot edit the fields in the Call Info window; they are for display only.

To open the Call Info window from the Trouble Info Callers View window, select the row of the call you want to display and either click on the **Call Info...** button or select **Call Info...** from the Actions menu.

Call Info Window

The Call Info window displays the following fields and buttons:

- **Account #** displays the customer's account number.
- **Event Status** displays the current status of the event that this call is a part of.
- **Telephone** displays the customer's phone number.
- **Event #** displays the number assigned to the event by the system.
- **Name** displays the customer's name.
- **Clues** displays the short description representation of the Request drop-down menu selections that were entered when the call was logged.
- **Address** displays the customer's address.
- **Reported Start Date** displays the date and time the problem began for the customer.
- **City** displays the customer's city, state and zip code.
- **Call Taker ID** displays the user name of the person who entered the call.
- **Customer Type** displays the customer type value for the customer.
- **Crew ID** displays the name of the crew that has been placed en route to/is onsite at the event, if any.
- **Customer Device** displays the name of the customer's service device.
- **Callback Date** displays the date and time by which the customer has requested a follow up call, if specified.
- **Zone(s)** displays the control zone(s) the customer is located in.
- **Customer Comment** displays any customer comments that were entered at the time the call was logged.

Buttons

- The **Print** button opens the Print Preview dialog, which allows you to print the currently displayed customer call information.
- The **Exit** button exits the Call Info window.

Menus

The following table describes the Call Info menus.

- **File Menu**
 - **Print** – Opens up the Print Preview dialog, which allows you to print out the contents of the currently displayed customer call information
 - **Exit** – Closes the Call Info window
- **Help Menu**
 - **About Web Trouble** - Opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Web Gateway that the application is using.

Chapter 8

Web Call Entry

Oracle Utilities Network Management System - Web Call Entry is used to enter and access customer call and event information. The application streamlines data entry and allows access to customer call, event, and dispatch information by personnel in various operations settings. Web Call Entry shares a database with other Oracle Utilities Network Management System applications. This allows you to view certain data that operations personnel and crew supervisors have entered into the system. The event history and call history information for a customer is often helpful when you are handling a new call from a customer reporting a service outage.

This chapter includes the following topics:

- **Starting Web Call Entry**
- **Using the Web Call Entry Window**
- **Searching for a Customer**
- **Viewing the Call History**
- **Viewing the Event History**
- **Entering a Customer Call**
- **Entering a Fuzzy Call**
- **Viewing the Outages Summary**

Starting Web Call Entry

Web Call Entry is accessed using a URL (web address) or as a local application, depending on your site's policy. Your system administrator determines the web address, if applicable. If accessing Web Call Entry from a browser, complete these steps:

1. Open your web browser by clicking the shortcut on the desktop, or from the Start menu.
2. In the **Address** field of the browser, enter the URL for Web Call Entry, then press **Enter**. Please wait while Web Call Entry starts.
3. If this is the first time running an Oracle Utilities Network Management System Windows-based product on your PC, you may be prompted to do a one-time download of a Java plugin. If so, select **Yes** (or Accept or Agree) on all subsequent dialogs until Web Call Entry opens.

Note: You or your system administrator can add Web Call Entry to your Start menu and/or create a shortcut icon on your desktop for quick access to Web Call Entry. When you start up Web Call Entry for the first time, it will (depending on installation method) ask if you want to install a shortcut in your Start menu and on your desktop.

Using the Web Call Entry Window

The Web Call Entry window contains sections that display specific types of information. These sections include the menu bar, toolbar, header, customer information, request information, and event- and crew-related information.

The following topics describe how to use this window:

- **Menu Bar**
- **Toolbar**
- **Customer Information**
- **Request Information**
- **Event Information**
- **Crew Information**
- **Planned Outages Information**

Related Topics:

- **Starting Web Call Entry**
- **Viewing the Call History**
- **Entering a Customer Call**
- **Entering a Fuzzy Call**
- **Viewing the Outages Summary**

Menu Bar

The Web Call Entry menu bar provides access to commonly used functions. Most of the functions in the Actions menu are also available on the toolbar.

- **File Menu**
 - **Outages Summary** - Opens the Outages Summary window.
 - **Exit** - Closes the Web Call Entry window and exits the application.
- **Actions Menu**
 - **Customer Search** - Searches for customers based on the search criteria entered into the Searchable Information section. The system displays up to the first 100 customers located in the database that match the criteria.
 - **Intersection Search** - Searches for a street intersection based on one or two street names entered into the Intersection Search section. The order of the street names does not matter for matching purposes.
 - **Call Search** - Searches through previous calls based on the search criteria entered into the Searchable Information section. The system displays up to the first 100 calls located in the database that match the criteria.
 - **Submit Call** - Saves the call details entered into the request sections and clears the form.
 - **Call History...** - Opens a Call History dialog box listing the current and previous calls from the customer. This option is disabled if a previous call does not exist.
 - **Event History...** - Opens an Event History dialog box listing the current and previous events involving the customer. Note that the customer need not have called to be part of an event. This option is disabled if a previous event does not exist.

- **Clear Form** - Removes customer, event, and crew information from the fields on the window. Remember to save the call, if desired, before clearing the fields.
- **Options Menu**
 - **Set Wild Card Searching** - Allows you to set the wild card search option. Wild card searching allows you to enter partial names or numbers in the searchable fields and all matching results will be returned. For example, if you have the wild card searching set to Both, and you enter “anders” into the Name field, the system returns customers named “Anderson”, “Andersen”, and “Sanders”.
 - Before** - puts a wild card before the search string
 - After** - puts a wild card following the search string
 - Both** - puts a wild card both before and after the search string
 - **Use Sound Search** - Allows you to use the “sounds like” search feature, which displays search results that are phonetically similar to the search criteria. For example, if you enter “Jon Doh”, the system would return customers such as “John Doe.” If you select this search option, Wild Card searching and Exact Match searching options are disabled until this option is toggled off.
 - **Use Exact Match Search** - Displays search results that exactly match the search criteria. This is the most restrictive search option. Wild Card searching and Sound searching options are disabled until this option is toggled off.
 - **Set Max Searching Results** - Allows you to set the maximum number of search results returned. If you enter a maximum search result of “50”, up to 50 entries display in the Customer Selection or Call Selection (search results) dialog box. This feature is helpful when using wild card searching. (For performance reasons, the system will not allow the maximum search results to be set above 100.)
- **Help Menu**
 - **About Web Call Entry** - Opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Web Gateway that the application is using.

Toolbar

The buttons on the toolbar let you perform the same functions as the options in the Action menu. Various icons represent the functions the buttons perform. The toolbar appears below the menu bar by default. You can also move it into its own “floating” window and return it to the default location by closing it (the upper right 'X' in its title bar).

The following table describes the buttons on the Web Call Entry Toolbar.

Button	Description
 Customer Search	Searches for customers based on the search criteria entered into the Searchable Information section. The system displays up to the first 100 customers located in the database that match the criteria.
 Intersection Search	Search for a street intersection based on one or two street names entered into the Intersection Search section. The order of the street names does not matter for matching purposes.
 Call Search	Searches through previous calls based on the search criteria entered into the Searchable Information section.

Button	Description
 Submit Call	Saves the call details entered into the request sections and clears the form.
 Call History...	Opens a Call History dialog box listing the current and previous calls from the customer. This option is disabled if a previous call does not exist.
 Event History...	Opens an Event History dialog box that displays the current and previous events involving customer. This button is disabled if a previous event does not exist.
 Clear Form	Removes customer, event, and crew information from the fields on the window. Note: Remember to save the call, if desired, before clearing the fields.
 Outages Summary	Opens the Outages Summary window.
 Exit	Exits the Web Call Entry window.

Moving the Toolbar

To move the toolbar into its own window, complete these steps:

- Click on the toolbar
- Drag it to the new position while holding down the mouse button.
- Release the mouse button. The toolbar displays in its own window.

If the toolbar is in its own window, you can move it back to its last docked position by clicking the **X** in the upper right hand corner of the toolbar window.

Customer Information

There are two sections on the Web Call Entry window that contain customer information:

- **Searchable Information** - allows you to enter search criteria to locate information for the customer calling to report a problem or request service. You can execute a search with full or partial data by entering information in any of the searchable fields and then either clicking the **Search** button or selecting Search from the Actions menu. If there is more than one match for the query, results are displayed in a Customer Selection table. From the Customer Selection table, you can select the appropriate record. For more information, see **Searching for a Customer**.
- **Additional Customer Information** - displays the account type, customer type and device.

Searchable Information Section

The Searchable Information section displays the following fields:

- The **Call ID** field contains the unique Call ID generated when a call is entered. A successful search on this field will open the Call History window with information from this call.
- The **Account #** field contains the customer account number. Enter all or part of the account number to **search for the customer**.
- The **Telephone** field contains the customer telephone number. Enter all or part of the telephone number **to search for the customer**.
- The **Name** field contains the customer name. Enter all or part of the customer name to search for the customer.
- The **Address** field contains the customer address or the address for the problem location. Enter all or part of the address to search for the customer or problem location.
- The **City** field contains the city, state, and zip code. This is a view-only field that is populated when a search is performed.
- The **ERT to Report** field is used to track the estimated restore times (ERTs) given to a caller. If the customer is part of one or more outages, the **ERT to Report** field will default to the latest of the ERTs for outages affecting that customer. The button on the right opens a calendar dialog from which the reported date and time can be selected.

The Additional Customer Information section displays the following fields:

- The **Account Type** field is a view-only field that indicates the type of customer account (e.g., electric).
- The **Customer Type** field is a view-only field that indicates the type of customer (e.g., critical). If a customer type has not been designated for the customer, this field will have 'STD'.
- The **Customer Device** field is a view-only field that indicates the device name associated with the customer.

Intersection Search Section

The Intersection Search section allows you to enter one or two street names and see a list of all matching street intersections containing the name(s). This allows the entry of a call that can be associated to the street intersection, which is helpful if someone is reporting a traffic light that is out or a customer has an outage but is not correctly located in the database.

The Intersection Search section displays the following fields:

- The **Street 1** field is required for searches and should just contain the street name with no numeric address part and no suffix such as St, Ln, Rd, S., W., etc. Capitalization does not matter.
- The **Street 2** field is optional for searches and should just contain the street name with no numeric address part and no suffix such as St, Ln, Rd, S., W., etc. Capitalization does not matter.

Note: The order of the street names does not matter. If the database has “W 50th ST & BIRCH ST” as the intersection, it still will be found if you enter “Birch” for **Street 1**.

Request Information

The Callback Request and Request sections allow you to enter general details provided by the caller, as well as request a callback. The information you enter in these fields is saved to the database and used by other Oracle Utilities Network Management System applications and

possibly other 3rd party systems that are interfaced to Oracle Utilities Network Management System.

Request information includes the following:

- **Callback Request** allows you to specify a call before date and time and an optional callback phone number, or indicate if no callback was requested.
 - **Call Before Date** is a radio button that allows you to indicate that the customer would like to be contacted (called back) when the event is restored. Click on the calendar button to select a date and time after which the callback should not be performed. The date field can be left blank if the customer does not indicate a restriction.
 - **No Callback Requested** is a radio button that allows you to indicate that the customer does not want to be called back regarding the event.
- The **Callback Phone** field contains an optional phone number, to be entered if the customer wishes to be called back at a different number (e.g., their cell phone) than the primary phone number on their account.
- **Power** is a drop-down menu that allows you to select the status of the power (e.g., dim lights).
- **Cause** is a drop-down menu that allows you to select the cause (if known) of the event (e.g., tree limb on wire).
- **Description** is a drop-down menu that allows you to select an additional description of the event (e.g., sagging wire).
- **Street Light** is a drop-down menu that allows you to indicate problems with streetlights or traffic lights.
- **Meter** is a drop-down menu that allows you to select an action needed in regard to the meter (e.g., connect).
- **Meet** is a drop-down menu that allows you to indicate whether emergency or other personnel should be met on the scene (e.g., meet fire).
- **Priority** is a drop-down menu that allows you to indicate whether the event is a priority situation (e.g., extreme/life).
- **Other** is a drop-down menu that allows you to cancel previous calls from this customer or enter in “informational” calls when the customer calls back to simply ask for more information about their event.
- The **Customer Comment** field allows you to enter a note based on the remarks of the caller.

Note: The actual set of drop-down menus may be different at your company.

Event Information

The Event Information section is view-only and populated with information only if one or more active events are associated with the customer. The Event Information table displays information about each active event associated with the customer. To view the Operations Event Note if there are multiple events, select the desired event from the table.

The Event Information Section displays the following columns:

- The **Operations Event Note** field displays any dispatcher or crew notes that may have been entered into the system, such as waiting for special equipment or for traffic police to secure an area. This field is view-only.
- The **Event #** column contains the unique number assigned to the event. The event number is also displayed in other Oracle Utilities Network Management System applications in order to track the status of the event.

- The **Event Device** column contains the name of the device associated with the event.
- The **Event Type** column contains a classification of the event. See
- The **Start Date** column contains the date and time the event began.
- The **Est Rest Time** column contains the date and time the operations center or the crew predicts the event will be resolved.
- The **Trouble Codes** column contains the trouble codes that were entered when the call was taken (e.g., Sagging wire). See **Event Type Codes** on page A-4 for a complete list of event type codes and their descriptions.
- The **# Cust** column contains the estimated number of customers affected by the event.

Crew Information

The Crew Information section displays the following information about any crew associated with the event.

- The **Event #** column contains the unique number assigned to the event. The event number is also displayed in other Oracle Utilities Network Management System applications in order to track the status of the event.
- The **Crew ID** column contains the identification name or number of the crew.
- The **Assigned Date** column contains the date and time the crew was assigned to the event.
- The **# Assignments** column contains the total number of events to which the crew is assigned.
- The **En Route Date** column contains the date and time the crew was placed en route to the event.
- The **On Site Date** column contains the date and time the crew arrived on site.

Planned Outages Information

The Planned Outages Information section displays the following information about any upcoming planned outage that the customer will be a part of.

- The **Planned Start** column contains the date and time the planned switching work is scheduled to begin.
- The **Planned Finish** column contains the date and time the planned switching work is scheduled to end.
- The **Office** column contains the office responsible for the switching plan.
- The **Work Location** column contains the street address or specific location for the switching operation.
- The **Description of Work** column contains a general description about what the planned switching work is trying to accomplish.

Searching for a Customer

When a customer calls in, you can enter the details for the call in Web Call Entry. First you must search for the customer in order to populate the necessary information for submitting the call.

To search for a customer, complete these steps:

1. Verify that you have selected the preferred search option settings. Select the **Options** menu to view the current settings.

2. Enter all or part of the customer's information in the **Searchable Information** fields (e.g., name, telephone number, etc.). Typically you will fill in search information in only one of the fields for a search.
3. Click the **Search** button on the toolbar, or press **Enter**. If a match is found, the customer information is displayed on the Web Call Entry window.
4. If more than one customer matches the search criteria, the Customer Selection dialog box displays the search results display in a table that contains the customer's account number, name, address, city, state, zip code, and telephone number. You can use this information to confirm that you are entering an event for the correct customer.
5. Select the customer from the list and click the **OK** button. The customer's information displays on the main Web Call Entry window.

Searching for a Customer Using the Call ID

When a customer calls in to follow up on a previous call, you can search for that call in Web Call Entry.

To search for a call using the original call ID, complete these steps:

1. Enter the call ID in the Searchable Information **Call ID** field.
2. Click the **Search** button on the toolbar, or press Enter. If a match is found, the Call History window opens. (See **Viewing the Call History** on page 8-9.) Skip to step 5.
3. If more than one call matches your search criteria, the Call Selection dialog box opens. The search results display in a table that contains the call date/time, name, address, city, state, zip code, and telephone number. You can use this information to confirm that you are retrieving the correct call.
4. Select a call from the list and click the **OK** button. The call's information displays on the main Web Call Entry window.
5. Confirm that it is the correct call and click the **Load** button. The Call History window closes and the call information displays in the Web Call Entry window.

Search for a Call using Caller Information

To search for a call using previous caller information, complete these steps:

1. Verify that you have selected the preferred search option settings. Select the **Options** menu to view the current settings.
2. Enter all or part of the caller's information in the **Searchable Information** fields (e.g., name, telephone number, etc.) Typically you will fill in search information in only one of the fields for a search.
3. Click the **Call Search** button on the toolbar. If a match is found, the call information is displayed.
4. If more than one call matches the search criteria, the Call Selection dialog box opens (see above). The search results display in a table that contains the call date/time, name, address, city, state, zip code, and telephone number. You can use this information to confirm that you are retrieving the correct call.
5. Select a call and click the **OK** button. The call information displays in the Web Call Entry window.

Viewing the Call History

Web Call Entry allows you to view the call history for a customer. This is important for managing the relationship with customers who are repeat callers. Once you have selected a call from the customer's call history, you can view the details for the call.

The Call History window offers a table summary of each call a customer has made that is still within the database. The calls are chronologically ordered by call date, but can be sorted by any of the other columns by clicking on the column header. Click the column header once to sort in one direction (e.g., ascending order), and click a second time to sort in the other direction (e.g., descending order). You can access the Call History window by clicking on the **Call History** button on the toolbar or selecting **Call History...** from the Actions menu.

Note: Your system administrator sets up the amount of call history data available.

The Call History window displays the following fields and buttons:

- The **Call Date** column contains the date and time the customer call was entered.
- The **Trouble Codes** column contains the trouble conditions for the event (e.g., out).
- The **Customer Comment** column contains comments from customer as entered by the call taker, if any.
- The **Active** column is an indicator of whether the call is active. Values are:
 - Y - Yes, call (and associated event) are still active
 - N - No, call (and associated event) are resolved
 - C - Cancelled, customer called back to cancel call
 - E - Cancelled, operator cancelled event via Work Agenda
- The **Reported ERT** column contains the ERT value that was explicitly provided to the customer on that call.
- The **Call ID** column contains the unique ID generated when call is entered into system.
- If you select a row in the table, the details for that call are displayed in the window below the table. The call details include customer information, callback request information, event information (e.g., cause), and customer comments. The information on the Call History window is view-only except for the Callback Phone and the Customer Comment area. The fields on the Call Details window generally match the fields on the main Web Call Entry window.
- The **Call Taker ID** field displays who recorded the call.
- The **Control Zone** field displays the Control Zone where the problem is located.
- The **Call ID** field contains the unique Call ID generated when a call is entered.
- The **Account #** field contains the customer account number.
- The **Telephone** field contains the customer telephone number.
- The **Name field** contains the customer name.
- The **Address** field contains the customer address or the address for the problem location.
- The **City** field contains the city, state, and zip code.
- The **Customer Type** field is a field that indicates the type of customer (e.g., critical). If a customer type has not been designated for the customer, this field will have '0'.
- The **Customer Device** field is a field that indicates the device name associated with the customer.

- The **Reported Start Date** field is a field that indicates when the event was first reported to have started.
- **Call Before Date** is a radio button that indicates that the customer wanted to be contacted (called back) when the event is restored.
- **No Callback Requested** is a radio button that indicates that the customer did not want to be called back regarding the event.
- The **Callback Phone** field contains an optional phone number, that was entered if the customer wished to be called back at a different number than the primary phone number on their account.
- **Power** is a drop-down menu that indicates the status of the power (e.g., dim lights).
- **Cause** is a drop-down menu that indicates the cause (if known) of the event (e.g., tree limb on wire).
- **Description** is a drop-down menu that indicates an additional description of the event (e.g., sagging wire).
- **Street Light** is a drop-down menu that indicates problems with streetlights or traffic lights.
- **Meter** is a drop-down menu that indicates an action needed in regard to the meter (e.g., connect).
- **Meet** is a drop-down menu that indicates whether emergency or other personnel were to be met on the scene (e.g., meet fire).
- **Priority** is a drop-down menu that indicates whether the event is/was a priority situation (e.g., extreme/life).
- **Other** is a drop-down menu that indicates whether or not the call was simply an “informational” one (the call to cancel a previous call doesn't show up in the Call History, so this would never display the value of “Cancel”).
- The **Customer Comment** field displays the remarks of the caller, if any.

Buttons

- The **Load** button loads the main Web Call Entry window with Customer and Event Information based on this call, and closes the Call History window. (Only enabled if search was based on Call ID.)
- The **Save** button saves any changes to the Callback Phone or Customer Comment fields and closes the Call History window.
- The **Close** button closes the Call History dialog box.

Viewing the Event History

Web Call Entry allows you to view the event history for a customer. This is important for managing the relationship with customers who have experienced additional recent outages. Once you have selected an event from the customer's event history, you can view the details of the event.

The Event History window box offers a table summary of each event related to the customer that is still in the database. The events are chronologically ordered by start date, but can be sorted by any of the other columns by clicking on the column header. You can access the Event History window by clicking on the **Event History** button on the toolbar or selecting **Event History...** from the Actions menu.

Note: Your system administrator sets up the amount of event history data available.

The Event History window displays the following fields and buttons:

- The **Event #** column contains the unique number assigned to the event. The event number is also displayed in other Oracle Utilities Network Management System applications in order to track the status of the event.
- The **Start Date** column contains the date and time the event was reported to have begun. This is typically the same time as when the first call was entered.
- The **End Date** column contains the date and time the event was resolved. If this field is empty, then the event has not been completed in Oracle Utilities Network Management System.
- The **Event Type** column indicates whether the event was an outage or non-outage. (**OUT** - An outage event where some customers were without power, **NON** - A non-outage event, such as street light always on/off.)
- If you select a row in the table, the details for that event are displayed in the window below the table. The event details include the event number, device and feeder information, and event time information. The information on the Event History window is view-only. Many of the fields on the Event History window match the Event Information and other fields on the main Web Call Entry window.
- The **Event #** field displays the unique number assigned to the event. The event number is also displayed in other Oracle Utilities Network Management System applications in order to track the status of the event.
- The **Feeder** field displays the feeder associated with the event.
- The **Event Device** field displays the device associated with the event.
- The **Est Cust Affected** field displays the estimated number of customers affected by the event.
- The **First Call At** field displays the date and time the first call was entered.
- The **Event Start Date** field displays the date and time the event was reported to have begun. This is typically the same time as when the first call was entered.
- The **Event Restored At** field displays the date and time the event was resolved. If this field is empty, then the event has not been completed in Oracle Utilities Network Management System.
- The **Remedy** field displays the value from the Event Details Remedy drop-down if it has been populated from Trouble Management or Web Trouble.
- The **Scheduled** field displays the value from the Event Details Scheduled drop-down if it has been populated from Trouble Management or Web Trouble.

- The **Utility Error** field displays the value from the Event Details Utility Error drop-down if it has been populated from Trouble Management or Web Trouble.
- The **Other** field displays the value from the Event Details Other drop-down if it has been populated from Trouble Management or Web Trouble.
- The **Vegetation** field displays the value from the Event Details Vegetation drop-down if it has been populated from Trouble Management or Web Trouble.
- The **Defective Equip.** field displays the value from the Event Details Defective Equip. drop-down if it has been populated from Trouble Management or Web Trouble.
- The **Environment** field displays the value from the Event Details Environment drop-down if it has been populated from Trouble Management or Web Trouble.
- The **Weather** field displays the value from the Event Details Weather drop-down if it has been populated from Trouble Management or Web Trouble.
- The **Operations Cancellation Reason** field displays the reason given for canceling the event if cancelled by operations personnel. Typically done if event was inadvertently entered in the system.
- The **Operations Event Note** field displays notes entered regarding the event. These notes may include crew remarks and resolution issues.
- The **Close** button closes the Event History window.

Entering a Customer Call

After you have located the information for a customer and have reviewed any call history and event history, you can proceed to enter a call. You enter all call information in the main Web Call Entry window.

To enter a customer call, complete these steps:

1. Search for the customer information. (For details on how to search for customer information, see [Searching for a Customer](#).)
2. If the customer wishes to be called back when the event is complete, click the **Call Before Date** radio button. If part of your business process, and if the customer indicates a restriction, click on the **Calendar** button (at right) to enter the date and time after which the customer no longer wants to be called. If the customer provides a different phone number for the callback, enter it in the Callback Phone field.
3. Select the appropriate options from the drop-down menus in the Request section. These are necessary for operations personnel to understand and quickly resolve the event.
4. In the Customer Comments field, enter any information that the customer provides that will assist the operations personnel or the crew.
5. Save the call by clicking the **Submit Call** button on the toolbar or selecting the Submit Call option from the Actions menu. A popup dialog will display with a Call ID.
6. Provide the Call ID to the customer, and then click the **OK** button to dismiss the dialog.

Cancelling a Previous Call

A customer may call back to cancel a previous call, for example if they found that the problem was with their internal circuit breaker and they have reset it. In order to cancel a customer call, complete these steps:

1. Search for the customer information. (For details on how to search for customer information, see [Searching for a Customer](#) on page 8-7.)

2. In the Request section of the main Web Call Entry window, select the Cancel option from the Other drop-down.
3. Save the call by clicking the **Submit Call** button on the toolbar or selecting the Submit Call option from the Actions menu.

Note: Fuzzy calls must be cancelled in the Work Agenda.

Entering an Informational Call

A customer may call back to ask when their power is expected to be restored. If you need to keep track of when estimated restore times (ERTs) are provided to a customer, complete these steps:

1. Search for the customer information. (For details on how to search for customer information, see **Searching for a Customer** on page 8-7.)

Note: The **ERT to Report** field will default to the latest of the ERTs for outages affecting that customer. If the field is blank, or if a different ERT is given to the customer (e.g., by rounding the listed ERT up to the next half hour), then modify the field to display the actual ERT that the customer is told. Select the button on the right to open a calendar dialog from which the reported date and time can be selected.

2. In the Request section of the main Web Call Entry window, select the **Informational** option from the Other drop-down.
3. Save the call by clicking the **Submit Call** button on the toolbar or selecting the Submit Call option from the Actions menu.

Entering a Fuzzy Call

Fuzzy calls are calls that are not initially associated with a customer or device. For example, a fuzzy call results when you receive a call from the police reporting that a pole is down at a street intersection. It can later be associated with a specific device.

The search will not match on a specific customer, but will instead display the “fuzzy call” dialog as shown below.

To enter a fuzzy call, complete these steps:

1. Enter the address information (e.g., cross streets). A fuzzy call should have some address information filled in, even if it just an intersection.
2. Click the **Search** toolbar icon or select the **Search** option from the Actions menu. A dialog appears, indicating that there was no match for the search criteria, but the call can be edited or saved.
3. If you know the control zone associated with the trouble location indicated by the caller, click on the **Control Zone Selection** button to the right of the Control Zone field. Select the control zone from the tree display and then click the **OK** button.
4. Click the **Edit Call** button.
5. If the caller wishes to be called back when the event is resolved, click the **Call Before Date** radio button. Then, click on the **Calendar** button (at right) to enter the date and time after which the customer no longer wants to be called. Enter the caller's phone number in the **Callback Phone** field.
6. Select the appropriate options from the drop-down menus in the **Request** section, such as Power, Cause, Description, Street Light, Meter, Meet, Priority, and Other. (See **Request Information** for details.) These are necessary for operations personnel to understand and quickly resolve the event.

7. In the **Customer Comments** field, enter any information that the caller provides that will assist the operations personnel or the crew.
8. Save the call by clicking the **Submit Call** button on the toolbar or selecting the **Submit Call** option from the Actions menu.

Note: This button is only enabled if the Address field was filled in when the search was done.

A popup dialog displays the Call ID.

9. Provide the Call ID to the caller, and then click the **OK** button to close the dialog.

Viewing the Outages Summary

The Outages Summary window presents the user with a view-only summary of the total active outage events in the system. The information in the window dynamically updates as new calls come in and as new outages are created and restored. The events are sorted by default on the E/H and # Out values, but can be sorted by any of the other columns by clicking on the column header. You can access the Outages Summary by clicking on the **Outages Summary** button on the toolbar or selecting **Outages Summary** from the File menu.

The Outages Summary window displays the following fields and buttons:

- The **Events in View** field displays the number of events currently displayed in the Outages Summary.
- The **Est Cust Out** field displays the number of customers estimated to be affected by the events currently displayed in the Outages Summary.
- The **Calls** field displays the number of calls entered for the events currently displayed in the Outages Summary.
- The **Pri Calls** field displays the number of priority calls entered for the events currently displayed in the Outages Summary.
- The **EMR Cust Out** field displays the number of emergency customers affected by the events currently displayed in the Outages Summary.
- The **MED Cust Out** field displays the number of medical customers affected by the events currently displayed in the Outages Summary.
- The **KEY Cust Out** field displays the number of key customers affected by the events currently displayed in the Outages Summary.
- The **Crews En Route/Onsite** field displays the number of crews en route to/onsite at the events currently displayed in the Outages Summary.
- The **E/H** column indicates whether or not the event is an emergency or hazardous condition. An “E” in this column denotes extreme emergency, and an “H” in this column denotes hazardous.
- The **# Out** column contains the number of customers experiencing an outage for the event.
- The **# Crit** column contains the total number of critical customers experiencing an outage for the event.
- The **# Calls** column contains the number of calls received for the event.
- The **Region** column contains the control zone region where the event occurred.
- The **Branch** column contains the control zone branch where the event occurred.
- The **Substation** column contains the control zone substation where the event occurred.

- The **Location** column contains either the address of the first customer that called if the event is a service outage or non-outage or the feeder location of the device if the event is a device outage.
- The **Start Date** column contains the date and time the event began.
- The **Est Restore Date** column contains the estimated restoration time (ERT) for the event.
- The **Est Src** column contains the source of the ERT for the event. The possible source values are:
 - N - none (no ERT)
 - S - Oracle Utilities Network Management System - Storm Management
 - P - Oracle Utilities Network Management System Storm Management “non-published global ERT”
 - O - Oracle Utilities Network Management System Storm Management “onsite ERT”
 - G - Oracle Utilities Network Management System Storm Management “published global ERT”
 - C - User-entered (assumed to have been provided by the crew)
 - I - Initial default ERT
- The **Clues** column contains the clue codes for the calls received, if any.
- The **Status** column displays the status assigned to the event. See **Event Status Codes** on page A-1 for a complete list of status codes and descriptions.
- The **Crews** column contains the crew id(s) of the associated crew(s).
- The **Operations Event Note** field displays the Operations Event Note for the selected event, if any.
- The **Auto Filter** button allows you to quickly filter the view by the selected cell value.
- The **Auto Filter Off** button turns off any auto filter that has been applied.
- The **Exit** button closes the Outages Summary window.

The following table describes the Outages Summary menus.

Menu	Description
File	Print - Opens up the Print Preview dialog, which allows you to print out the Outages Summary window.
	Exit - Closes the Outages Summary window.
Filter	Auto Filter - Allows you to quickly filter the view by the selected cell value.
	Auto Filter Off - Turns off any auto filter that has been applied.
Actions	Default Sort - Applies the default sort to the Outages Summary.

Chapter 9

Web Callbacks

This chapter describes the Web Callback functionality. It includes the following topics:

- **Overview**
- **Starting Web Callbacks**
- **Using the Web Callbacks Window**
- **Assigning Callbacks**
- **Viewing Callback Assignments**
- **Unassigning Callbacks**
- **Performing Callbacks**

Overview

Oracle Utilities Network Management System - Web Callbacks is an application used to manage callback requests for customers who have called in reporting an outage. When the outage is resolved, Web Callbacks provides the information necessary to call customers. Web Callbacks allows you to assign groups of callbacks to users and outsourcing agencies, and also supports a “one-at-a-time” approach, where you can select an outage and perform the next callback. Callbacks are only created for customers who called in and had “Callback Requested” indicated when their call was entered.

Web Callbacks displays information about the outage and the original customer call, and allows you to save the results of the callback (power restored, phone busy, power still out, etc.). Customers whose power is not restored are re-introduced into the Oracle Utilities Network Management System for re-analysis and restoration. A Still Out trouble code clue, which appears in Clues field in Work Agenda and Trouble Info, is added to calls re-introduced in this way. Web Callbacks interfaces with other Oracle Utilities Network Management System modules to display customer comments and operations remarks.

Starting Web Callbacks

Web Callbacks is accessed using a URL (web address) or as a local application, depending on your site's policy. Your system administrator determines the web address, if applicable. If accessing Web Callbacks from a browser, complete these steps:

- Open your web browser by clicking the shortcut on the desktop, or from the Start menu.
- In the Address field of the browser, enter the URL for Web Callbacks, then press Enter. Please wait while Web Callbacks starts.

- If this is the first time running an Oracle Utilities Network Management System Windows-based product on your PC, you may be prompted to do a one-time download of a Java plug-in. If so, select Yes/Accept/Agree on all subsequent dialogs until Web Callbacks opens.

Note: You or your system administrator can add Web Callbacks to your Start menu and/or create a shortcut icon on your desktop for quick access to Web Callbacks. When you start up Web Callbacks for the first time, it will (depending on installation method) ask if you want to install a shortcut in your Start menu and on your desktop.

Logging In

The Login window is the first Web Callbacks window you see. You must enter a valid user name and password, and then click the **Validate** button. Once your user name and password are validated, the system populates the option menu that allows you to select a user type.

The Login window displays the following fields and buttons:

- The **User ID** field allows you to enter the user name provided to you by the system administrator.
- The **Password** field allows you to enter the password provided to you by the system administrator.
- The **Validate** button verifies your login credentials. If the user name and password are not entered correctly, the system displays a warning dialog box.
- The **User Type** drop-down menu contains the list of user types within your authority.
- The **Login** button allows you to complete the login process. Once you click the Login button, the Web Callbacks window opens.
- The **Change Password...** button opens a dialog box that allows you to create a new password for your user name.
- The **Quit** button exits the Login window.

Logging In

To login to Web Callbacks, complete these steps:

1. Depending on how your system was installed, do one of the following:
 - Click the **Web Callbacks** icon found under the appropriate program group in your Windows Start Menu.
 - Double-click the **Web Callbacks** icon on your desktop.
 - Open a web browser and type the Web Callbacks URL in the browser's Address field.

The Web Callbacks Login window displays.

2. Enter your user name in the User Name field.
3. Enter your password in the Password field.
4. Click the **Validate** button. The bottom portion of the Web Callbacks Login window sensitizes.
5. Select the appropriate User Type from the drop-down menu.
6. Click the **Login** button. The main Web Callbacks window will display.

Changing Your Password

You also use the Login dialog box to change your password. To change your password, complete these steps:

1. Depending on how your system was installed, do one of the following:
 - Click the **Web Callbacks** icon found under the appropriate program group in your Windows Start Menu.
 - Double click the **Web Callbacks** icon on your desktop.
 - Open a web browser and type the Web Callbacks URL in the browser's Address field.The Web Callbacks Login window displays.
2. Enter your user name.
3. Enter your password.
4. Click the **Validate** button. The bottom portion of the Web Callbacks Login window sensitizes.
5. Click on the **Change Password...** button. A Change Password dialog box appears.
6. Type your old password in the Old Password field.
7. Type your new password in the New Password field.
8. Retype your new password in the Verify Password field to verify the change.
9. Click the **OK** button. You are returned to the Oracle Utilities Network Management System Web Callbacks Login screen.
10. Click the **Login** button to finish logging in.

Using the Web Callbacks Window

The Web Callbacks main window displays all of the events that have callbacks that must be completed. You can perform callback actions in the window using the menu, the buttons on the toolbar, or the buttons at the bottom of the window.

The following topics describe how to use the Web Callbacks window:

- **Web Callbacks Menus**
- **Toolbar**
- **Header**
- **Callbacks Table**
- **Callbacks Summary Panel**
- **Callbacks Buttons**
- **Status Bar**

Related Topics:

- **Starting Web Callbacks**
- **Assigning Callbacks**
- **Viewing Callback Assignments**
- **Unassigning Callbacks**
- **Performing Callbacks**
-

Web Callbacks Menus

The Web Callbacks menu bar provides access to all functions. The commonly used functions are also available on the toolbar and in buttons at the bottom of the window. There are three menus on the Web Callbacks menu bar: File, Actions, and Help.

- **File Menu**
 - **Exit** - Closes the Web Callbacks window and exits the application. A confirmation dialog will be displayed.
- **Actions Menu**
 - **View My Callback Lists...** - Opens the View My Callback Lists window, which displays a list of callbacks assigned to you.
 - **Perform Next Callback...** - Opens the Perform Next Callback window, which allows you to perform the next callback for the selected event.
 - **Assign Callbacks...** - Opens the Assign Callbacks window, which allows you to assign callbacks for the selected event.
- **Help Menu**
 - **About Web Callbacks** - Opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Oracle Utilities Network Management System Web Gateway that the application is using.

Toolbar

The Web Callbacks toolbar provides a shortcut to many of the options available from the Web Callbacks menus. The toolbar appears below the menu bar by default. You can also dock it on the left side, right side, or bottom of the window or in its own window.

The following table describes the buttons on the Web Callbacks Toolbar.

Button	Description
 View My Callbacks Lists	Opens the View My Callback Lists window, which displays a list of callbacks assigned to you.
 Perform Next Callback	Opens the Perform Next Callback window, which allows you to perform the next callback for the selected event.
 Assign Callbacks	Opens the Assign Callbacks window, which allows you to assign callbacks for the selected event.
 Exit	Closes the Web Callbacks window and exits the application. A confirmation dialog will be displayed.

Moving the Toolbar

To move the toolbar, complete these steps:

1. Click on the toolbar.
2. Drag it to the new position while holding down the mouse button.
3. Release the mouse button. The toolbar moves to the new location.
 - If you release the mouse button when the toolbar is in close proximity to the sides of the Web Callbacks window, the toolbar will dock on that side of the Web Callbacks window (the outline of the toolbar will change from black to red when you've dragged it to a position where it will dock itself). Otherwise,
 - The toolbar displays in its own window.

If the toolbar is in its own window, you can move it back to its last docked position by clicking the X in the upper right hand corner of the toolbar window.

Header

Beneath the Web Callbacks Toolbar is the header section. This section contains information regarding who is logged in to the application.

- The **User Name** field displays your Web Callbacks login user name. This field is not editable.

Callbacks Table

The Web Callbacks table contains a detailed list of each resolved event that still has callbacks remaining. These rows are color-coded by the status of the callback (not started vs. in progress).

The Callbacks Table displays the following columns:

- The **Event #** column contains the unique number of the event.
- The **# Callbacks** column contains the number of callbacks for the event.

- The **# Pri** column contains the number of callbacks from priority calls for the event.
- The **% Comp** column contains the percentage of callbacks completed for the event.
- The **# Rem** column contains the number of callbacks remaining for the event.
- The **# Asn** column contains the number of remaining callbacks for the event that have been assigned.
- The **Start Date** column contains the reported start date and time of the event.
- The **Restore Date** column contains the date and time the event was restored.
- The **Device** column contains the name of the device associated with the event.
- The **Status** column contains the status of callbacks for the event:
 - **In Progress** - Some callbacks for the event have been completed
 - **Not Started** - Some callbacks for the event may have been assigned, but no callbacks are completed
- The **Substation** column contains the name of the substation for the device associated with the event.
- The **Zone** column contains the name of the branch office where the event occurred.
- The **# Users** column contains the number of users with assigned callbacks for the event.

Callbacks Table Column Features

Web Callbacks allows you to sort columns of its table by clicking on the particular column. The column displays an ascending sort after the first click and a descending sort after the second. A black arrow displays the direction of the sort. Clicking on other columns will initially sort based on the opposite sort type from the last column (ascending if previous column was sorted descending) and the sort direction reverses with subsequent clicks.

Sorting Callbacks

To sort based on a callback list column, complete these steps:

1. Click on the column that you want to sort. The column sorts in ascending order, indicated by a black arrow pointing upward.
2. Click again to sort the column in descending order, indicated by a black arrow pointing downward.
3. Click on a different column and the list is sorted ascending based on that column.

Rearranging Columns

You can dynamically rearrange the columns in a Web Callbacks list by dragging and releasing the column headers. To rearrange the columns, complete these steps:

1. On the column header for the column you want to move, click and hold down the mouse button with the pointer.
2. Move the pointer to drag the column left or right to the new location.
3. Release the mouse button. The column appears in the new location.

Note that this change is temporary. The next time you start Web Callbacks, the columns will display in their default order.

Callbacks Summary Panel

The Callbacks Summary panel appears in the lower portion of the Web Callbacks window. This panel displays summary information from the callback list. The Callbacks Summary panel includes the following fields:

- The **# Callbacks** field displays the total number of callbacks from events that still have active callbacks.
- The **% Complete** field displays the total percentage of callbacks listed in **# Callbacks** that are complete.
- The **# Remaining** field displays the total number of callbacks not completed, based on the **# Callbacks**.
- The **# Priority Calls** field displays the total number of callbacks that were priority, meaning those where the original call was for a priority situation (e.g., hazardous downed wire).

Note: Once all callbacks for an event have been completed, they are removed from the data displayed in the Callbacks Summary Panel. As a result, the **% Complete** can actually decrease when the last callback for an event is completed and that event is removed from the calculation.

Callbacks Buttons

The buttons on the bottom of the main Web Callbacks window comprise commonly used functions.

- The **View My Callbacks Lists...** button opens the View My Callback Lists window, which displays a list of callbacks assigned to you.
- The **Perform Next Callback...** button opens the Perform Next Callback window, which allows you to perform the next callback for the selected event.
- The **Assign Callbacks...** button opens the Assign Callbacks window, which allows you to assign callbacks for the selected event.

Status Bar

The status bar appears at the bottom of the Web Callbacks window, providing informational messages to the user at various times. Messages will appear in the status bar when callbacks are assigned, unassigned, or cancelled, when callbacks are saved, when a user's password is changed, or when a new callbacks user is created.

Assigning Callbacks

The Assign Callbacks window is used to assign callbacks for a specific event to you and/or other logged in users in order to manage the completion of the callback requests. If callbacks have been assigned to a user and that person is unable to complete the callbacks in a timely fashion, you can unassign those callbacks.

To access the Assign Callbacks window, select an event in the main Web Callbacks window, and then do one of the following:

- Select the **Assign Callbacks...** option from the Actions menu, or
- Click the **Assign Callbacks** button [X] on the toolbar, or
- Click the **Assign Callbacks...** button beneath the Callbacks Summary panel.

This section includes the following topics:

- **Using the Assign Callbacks Window**

- **Assigning Numbers of Callbacks**
- **Assigning Percentages of Callbacks**
- **Assigning All Remaining Callbacks**
- **Reassigning All Remaining Callbacks**
- **Unassigning Callbacks**

Using the Assign Callbacks Window

The Event Info panel at the top of the Assign Callbacks window provides summary information about the event. The Event Callbacks panel provides a current status of callback assignments for the event per user, and allows you to change the number or percentage of assigned callbacks for each user.

Note: When assigning callbacks to multiple users, you can assign a specific number of callbacks for the event to each user, or assign a percentage of the callbacks to each user.

The Assign Callbacks window displays the following fields and buttons:

- The **Event #** field displays the event number for which callbacks are being assigned.
- The **Device** field displays the name of the device associated with the event.
- The **Substation** field displays the name of the substation associated with the event.
- The **Total Callbacks** field displays the total number of callbacks for the event.
- The **% Complete** field displays the percentage of callbacks that are complete for the event.
- The **# Unassigned** field displays the number of callbacks for the event that have not been assigned.
- The **User Name** column contains the user name for each user currently logged in to the system. Other users appear in this column if they are permanently available (e.g., a third party agency or IVR system). You can assign callbacks to any user in this column.
- The **Include Priority Calls** column contains a check box that allows you to specify whether you want to include priority calls in the callback assignments for the user. This option may not be available for certain users, such as third party agencies or IVR.
- The **% Assigned** column contains the percentage of the total number of callbacks assigned to the user for the event. You can assign a specific percentage to the user by editing this field and then pressing the <Enter> key. If the percentage does not result in an exact number of callbacks (e.g., the callback assignment would be 4.78), the system rounds to the nearest number (in this case, 5).
- The **# Asn** column contains the number of callbacks assigned to the user for the event. You can assign a specific number of callbacks to each user by editing this field and then pressing the <Enter> key.
- The **# Pri** column contains the number of callbacks for priority calls assigned to the user for the event. This column is not editable.
- The **# Rem** column contains the number of callbacks remaining assigned to the user for the event. This column is not editable.
- The **% Comp** column contains the percentage of the total number of callbacks assigned to the user for the event that are complete. This column is not editable.

Buttons

- The **Save** button saves any callback assignment changes and closes the Assign Callbacks window. There is also an option under the Assign Callbacks window's Actions menu for this action.

- The **Unassign** button unassigns the remaining uncompleted callbacks for the event for the selected user and closes the Assign Callbacks window. There is also an option under the Assign Callbacks window's Actions menu for this action.
- The **Assign Remaining** button assigns the remaining unassigned callbacks for the event to the selected user and closes the Assign Callbacks window. There is also an option under the Assign Callbacks window's Actions menu for this action.
- The **Exit** button closes the Assign Callbacks window without saving any changes. There is also an option under the Assign Callbacks window's File menu for this action.

Assigning Callbacks to Users

You can assign callbacks to yourself or to another user that is currently logged into the system, or to an external service if it has been set up in your system. All of the users that have access to the system can assign callbacks to themselves and to others.

Assigning Numbers of Callbacks

When assigning callbacks for an event, you can assign all callbacks to a single user or distribute the callbacks to multiple users. To assign a specific number of callbacks, follow these steps:

1. Select an event with multiple unassigned callbacks from the Web Callbacks main window.
2. Do one of the following:
 - Click the **Assign Callbacks** button on the toolbar, or
 - Select the **Assign Callbacks...** option from the Actions menu, or
 - Click the **Assign Callbacks...** button below the Callbacks Summary panel. The Assign Callbacks window opens.
3. Select the **# Asn** column for a user from the list of users.
4. Type the number of callbacks you want to assign to the user.
5. If the event has additional callbacks, select the **# Asn** column for another user and enter the number of callbacks that you want to assign to that user.
6. Once you have assigned all of the callbacks that you want to assign, click the **Save** button. The Assign Callbacks window closes.

Assigning Percentages of Callbacks

When assigning callbacks for an event, you can assign all callbacks to a single user, or distribute the callbacks to multiple users by percentage. To assign a percentage of callbacks for an event to a user, complete these steps:

1. Select an event with multiple unassigned callbacks from the Web Callbacks main window.
2. Do one of the following:
 - Click the **Assign Callbacks** button on the toolbar, or
 - Select the **Assign Callbacks...** option from the Actions menu, or
 - Click the **Assign Callbacks...** button below the Callbacks Summary panel. The Assign Callbacks window opens.
3. Select the **% Assigned** column for a user.
4. Type "50" and press **Enter**. This will assign 50% of the callbacks to the selected user.
5. Click the **Save** button. The Assign Callbacks window closes.

Assigning All Remaining Callbacks

To assign all remaining callbacks for an event to a single user, complete these steps:

1. Select an event with multiple unassigned callbacks from the Web Callbacks main window.
2. Do one of the following:
 - Click the **Assign Callbacks** button on the toolbar, or
 - Select the **Assign Callbacks...** option from the Actions menu, or
 - Click the **Assign Callbacks...** button below the Callbacks Summary panel. The Assign Callbacks window opens.
3. Select the **User Name** column for a user.
4. Click the **Assign Remaining** button. All remaining unassigned callbacks are assigned to the selected user. The Assign Callbacks window closes.

Reassigning All Remaining Callbacks

To reassign all remaining event callbacks for a user to another user, complete these steps:

1. Select the event with assigned callbacks for a user from the Web Callbacks main window.
2. Do one of the following:
 - Click the **Assign Callbacks** button on the toolbar, or
 - Select the **Assign Callbacks...** option from the Actions menu, or
 - Click the **Assign Callbacks...** button below the Callbacks Summary panel. The Assign Callbacks window opens.
3. Select the **User Name** column for the user with uncompleted assigned callbacks.
4. Click the **Unassign** button. All remaining assigned callbacks for the selected user are now unassigned. The Assign Callbacks window closes.
5. Reopen the Assign Callbacks window using one of the methods above.
6. Select the **User Name** column for the user you wish to perform the remaining callbacks.
7. Click the **Assign Remaining** button. All remaining unassigned callbacks are assigned to the selected user. The Assign Callbacks window closes.

Viewing Callback Assignments

With the View My Callback Lists window, you can view all of the callbacks currently assigned to you. To access the View My Callback Lists window, do any of the following:

- Select the **View My Callback Lists...** option from the Actions menu, or
- Click the **View My Callback Lists** button **[X]** on the toolbar, or
- Click the **View My Callbacks Lists...** button beneath the Callbacks Summary panel.

This section includes the following topics:

- **View My Callback Lists Window**
- **Viewing Your Callback Assignments**
- **Canceling Your Callback Assignments**

View My Callback Lists Window

The View My Callback Lists window displays the following fields and buttons:

- The **User Name** field displays the user name that you are logged in as.
- The **# of Callback Lists Assigned** field displays the total number of events for which you have callback assignments.
- The **Event #** column contains the event number associated with the callback list.
- The **# Callbacks** column contains the number of callbacks assigned to you for the event.
- The **# Pri** column contains the number of priority calls among your assigned callbacks for the event.
- The **% Comp** column contains the percentage of your assigned callbacks that are complete.
- The **# Rem** column contains the number of callbacks assigned to you for the event that need to be completed.
- The **Restore Date** column contains the date and time the event was restored.
- The **Device** column contains the name of the device associated with the event.
- The **Substation** column contains the name of the substation for the device associated with the event.

Buttons

- The **Unassign All** button unassigns all of your remaining callbacks for all lists. This might be done if you are taking a break and therefore need to make the callbacks available for others to do. There is also an option under the View My Callback Lists window's Actions menu for this action.
- The **Perform Callback List...** button opens the Perform Callback List window for the selected event, which allows you to enter the callback response for each callback assigned to you from that event. There is also an option under the View My Callback Lists window's Actions menu for this action.
- The **Cancel Callbacks** button allows you to cancel all of your remaining callbacks for the selected event and consider them complete.
- The **Exit** button closes the View My Callback Lists window.

Viewing Your Callback Assignments

To view callbacks assigned to you, complete these steps:

1. Do one of the following:
 - Click the **View My Callback Lists** button on the toolbar, or
 - Select the **View My Callback Lists...** option from the Actions menu, or
 - Click the **View My Callback Lists...** button below the Callbacks Summary panel.

The View My Callback Lists window opens, displaying all events with callbacks assigned to you.

2. Click the **Exit** button to exit the View My Callbacks Lists window.

Canceling Your Callback Assignments

To cancel callbacks assigned to you for a specific event, complete these steps:

1. Do one of the following:
 - Click the **View My Callback Lists** button on the toolbar, or
 - Select the **View My Callback Lists...** option from the Actions menu, or
 - Click the **View My Callback Lists...** button below the Callbacks Summary panel.

The View My Callback Lists window opens, displaying all events with callbacks assigned to you.

2. Select the row of the event you wish to cancel your assigned callbacks for.
3. Click the **Cancel Callbacks** button. A confirmation dialog appears.
4. Click the **Yes** button on the confirmation dialog. Your assigned callbacks for that event are now considered complete. If there are no more uncompleted callbacks assigned to other users remaining for that event, that event row will disappear from the window. Otherwise, that event row will remain displayed until all callbacks for that event are complete.
5. Click the **Exit** button to exit the View My Callbacks Lists window.

Unassigning Callbacks

You can unassign callbacks that have not been completed. You may unassign callbacks for a single event, or unassign all callbacks assigned to you.

Note: If you exit Web Callbacks, the system automatically unassigns all of your remaining callbacks.

This section includes the following topics:

- **Unassigning Callbacks for a Specific Event**
- **Unassigning All of Your Callbacks**

Unassigning Callbacks for a Specific Event

To unassign callbacks for a specific event, complete these steps:

1. On the main Web Callbacks window, select the event for which you want to unassign callbacks.
2. Do one of the following:
 - Click the **Assign Callbacks** button on the toolbar, or
 - Select the **Assign Callbacks** option from the Actions menu, or
 - Click the **Assign Callbacks...** button below the Callbacks Summary panel. The Assign Callbacks window opens.
3. Select the **User Name** column for the user whose callbacks you wish to unassign.
4. Do one of the following:
 - To unassign all of the user's remaining callbacks for the event, click the **Unassign** button. The Assign Callbacks window closes.
 - To unassign a portion of the user's remaining callbacks for the event, enter a lower number of callbacks in the # Asn column for the user, or a lower percentage of callbacks in the % Assigned column, then press the <Enter> or <Tab> key. Click the **Save** button. The Assign Callbacks window closes.

Unassigning All of Your Callbacks

To unassign all of your callbacks, complete these steps:

1. Do one of the following:
 - Click the **View My Callback Lists** button on the toolbar, or
 - Select the **View My Callbacks Lists...** option from the Actions menu, or
 - Click the **View My Callback Lists...** button below the Callbacks Summary panel.

The View My Callback Lists window opens, displaying all events with callbacks assigned to you.

2. Click the **Unassign All** button. A confirmation dialog appears.
3. Click **Yes** on the confirmation dialog. The View My Callback Lists window closes.

Performing Callbacks

Once you have assigned callbacks to yourself, or another user has assigned callbacks to you, you can complete those callbacks using the Perform Callback List window. You may also perform callbacks that are unassigned (not currently assigned to any user) using the Perform Next Callback window.

The Perform Callback List window is used to record the results as you are completing your assigned callbacks for an event. The Event Information panel at the top of the window provides summary information about the event. The Event Callbacks Summary panel provides a status of your callback assignments for the event. The callback list table lists customers who have requested a callback for the event, and the Additional Customer Information panel provides more details regarding the customer selected in the callbacks list table.

This section includes the following topics:

- **Accessing the Perform Callback List**
- **Using the Perform Next Callback Window**
- **Performing Assigned Callbacks for an Event**
- **Performing Unassigned Callbacks (Next Callback)**

Accessing the Perform Callback List

To access the Perform Callback List window:

1. Do one of the following:
 - Click the **View My Callback Lists** button on the toolbar, or
 - Select the **View My Callback Lists...** option from the Actions menu, or
 - Click the **View My Callback Lists...** button below the Callbacks Summary panel.

The View My Callback Lists window opens, displaying all events with callbacks assigned to you.

2. Select a row for an event in the View My Callback Lists table and either:
 - Select the **Perform Callback List...** option from the Actions menu, or
 - Click the **Perform Callback List...** button.

The **Using the Perform Callbacks List Window** opens.

Using the Perform Callbacks List Window

The Perform Callbacks List window displays the following information:

- The **Event #** field displays the event number for which callbacks are being performed.
- The **Substation** field displays the name of the substation associated with the event.
- The **Zone** field displays the name of the branch office associated with the event.
- The **Device** field displays the name of the device associated with the event.
- The **Start Date** field displays the date and time the event began.
- The **Restore Date** field displays the date and time the event was restored.
- The **Operations Event Note** field displays any comments entered for the event by operations staff.
- The **# Callbacks** field displays the total number of your assigned callbacks for the event.
- The **# Remaining** field displays the number of your callbacks remaining for the event.
- The **% Complete** field displays the percentage of your callbacks that are complete for the event.
- The **Account #** column contains the customer account number.
- The **Name** column contains the name of the customer to be called back.
- The **Telephone** column contains the telephone number on record for the customer.
- The **Callback Phone** column contains the alternate telephone number (e.g., cell phone) for the customer, if provided during original call.
- The **Call Before Date** column contains the date and time after which the customer does not wish to be called.
- The **Callback Status** column is a drop-down menu that lets you select the result of the call to the customer. This is the only editable field on the form. See **Callback Status** on page B-4 for status colors and descriptions.
- The **Callback Date** column contains the date and time the callback was performed. This column is automatically populated when you change the Callback Status.
- The **Customer Type** column contains an indication of whether the customer is a critical customer (e.g., medical or key account).
- The **Priority** checkbox indicates whether or not the callback is associated with a priority call.
- The **Device** field in the Additional Customer Information panel displays the name of the selected customer's service device.
- The **Address** field displays the selected customer's service address.
- The **City** field displays the selected customer's city.
- The **Clues** field displays the trouble code clues received for the customer's call.
- The **Customer Comment** field displays the customer comments entered when the customer called, if any.

Buttons

- The **Save** button saves all callback status changes since the last save. This can be done after each callback (recommended), after every several callbacks, or just before exiting. There is also an option under the Perform Callback List window's File menu for this action.
- The **Cancel Callbacks** button allows you to cancel all of your remaining callbacks for the selected event and consider them complete.

- The **Exit** button closes the Perform Callback List window, returning you to the View My Callback Lists window. There is also an option under the Perform Callback List window's File menu for this action.

Performing Assigned Callbacks for an Event

Once you have been assigned a number of callbacks, you can begin completing them. To perform a callback, complete these steps:

1. Do one of the following:
 - Click the **View My Callback Lists** button on the toolbar, or
 - Select the **View My Callback Lists...** option from the Actions menu, or
 - Click the **View My Callback Lists...** button below the Callbacks Summary panel.

The View My Callback Lists window opens, displaying all events with callbacks assigned to you.

2. Select a row for an event in the View My Callback Lists table and either:
 - Select the **Perform Callback List...** option from the Actions menu, or
 - Click the **Perform Callback List...** button.

The Perform Callback List window opens displaying the details of the event and information for each customer to be called back.

3. Select a row for the callback you want to perform. At this time, you would physically make the call to the customer. Use the Callback Phone number if it exists. Otherwise use the number listed in the Telephone column.
4. Once the call is complete, change the Callback Status based on the result (e.g., restored).
5. Click the **Save** button.
6. Make any remaining callbacks and change the Callback Status accordingly. Make sure that you click the **Save** button before exiting if you aren't saving after each call.
7. Click the **Exit** button when you have completed all of the callbacks.

Performing Unassigned Callbacks (Next Callback)

You can perform callbacks that are not assigned to any user using the Perform Next Callback window. This window allows you to select events from the main window and perform callbacks that have not yet been assigned to a user. The Perform Next Callback window displays the same information as the Perform Callback List window, just in a different order.

The callback that displays is automatically assigned to you so it cannot be assigned to anyone else. If you save a Callback Status of anything other than “Restored,” “Not Restored,” or “Cancel,” the callback is not considered complete and remains assigned to you. If you do not save a Callback Status, the callback will be unassigned when you exit the Perform Next Callback window. You can also continue to process unassigned callbacks for this event by clicking the **Next Callback** button.

This section includes the following topics:

- **Using the Perform Next Callback Window**
- **Performing the Next Unassigned Callback for an Event**

Using the Perform Next Callback Window

To access the Perform Next Callback window, select an event in the main Web Callbacks window that has unassigned callbacks remaining, and then do one of the following:

- Click the **Perform Next Callback** button on the toolbar, or
- Select the **Perform Next Callback...** option from the Actions menu, or
- Click **Perform Next Callback...** button beneath the Callbacks Summary panel.

The Perform Next Callback Window displays the following fields and buttons:

- The **Event #** field displays the event number for which callbacks are being performed.
- The **Substation** field displays the name of the substation associated with the event.
- The **Zone** field displays the name of the branch office associated with the event.
- The **Device** field displays the name of the device associated with the event.
- The **Start Date** field displays the date and time the event began.
- The **Restore Date** field displays the date and time the event was restored.
- The **Operations Event Note** field displays any comments entered for the event by operations staff.
- The **# Callbacks** field displays the total number of callbacks for the event.
- The **# Remaining** field displays the number of callbacks remaining for the event.
- The **% Complete** field displays the percentage of callbacks that are complete for the event.
- The **Account #** field displays the selected customer's account number.
- The **Name** field displays the name of the customer to be called back.
- The **Address** field displays the selected customer's service address.
- The **City** field displays the selected customer's city.
- The **Customer Type** field displays an indication of whether the customer is a critical customer (e.g., medical or key account).
- The **Device** field in the Customer Information panel displays the name of the selected customer's service device.
- The **Clues** field displays the trouble code clues received for the customer's call.
- The **Customer Comment** field displays the customer comments entered when the customer called, if any.
- The **Priority** checkbox indicates whether or not the callback is associated with a priority call.
- The **Telephone** field displays the telephone number on record for the customer.
- The **Callback Phone** field displays the alternate telephone number (e.g., cell phone) for the customer, if provided during original call.
- The **Callback Status** column is a drop-down menu that lets you select the result of the call to the customer. See **Callback Status** on page B-4 for status colors and descriptions.
- The **Callback Date** column contains the date and time the callback was performed. This column is automatically populated when you change the Callback Status.

Buttons

- The **Next Callback** button populates the Perform Next Callback window with the next unassigned callback for this event, if any, and assigns the callback to you. There is also an option under the Perform Next Callback window's Actions menu for this action.

- The **Save** button saves the result for this callback and enables the Next Callback button. There is also an option under the Perform Next Callback window's File menu for this action.
- The **Exit** button closes the Perform Next Callback window. There is also an option under the Perform Next Callback window's File menu for this action.

Performing the Next Unassigned Callback for an Event

To perform the next unassigned callback for an event, complete these steps:

1. On the Web Callbacks main window, select an event that has unassigned callbacks remaining (# Asn column less than # Rem column).
 2. Do one of the following:
 - Click the **Perform Next Callback** button on the toolbar, or
 - Select the **Perform Next Callback...** option from the Actions menu, or
 - Click **Perform Next Callback...** button beneath the Callbacks Summary panel.
- If all callbacks for the selected event have been assigned, an error dialog displays.
3. Place the phone call to the customer, using the phone number listed in the Callback Phone field, if provided. Otherwise, use the number in the Telephone field.
 4. When the call is complete, select the appropriate option from the Callback Status drop-down menu.
 5. Click the **Save** button.
 6. If there are unassigned callbacks remaining for the event and you want to perform them, click the **Next Callback** button and repeat the three previous steps.
 7. Click the **Exit** button to close the Perform Next Callback window.

Note: The callback accessed from the Perform Next Callback window is assigned to you when the window opens to prevent another user from being assigned to it as well. If you save a result for the callback that does not actually complete it (e.g. Busy, No Answer) and then exit the Perform Next Callback window, it will remain assigned to you. If you exit the Perform Next Callback window without saving a result for the callback, the callback returns to being unassigned.

Chapter 10

Storm Management

This chapter describes the Storm Management application. It includes the following topics:

- **Getting Started with Storm Management**
- **Using the Storm Management Window**
- **Using Storm Management Modes**
- **Additional Storm Management User Types**
- **Understanding Storm Management Calculations**

Getting Started with Storm Management

The Storm Management application enables you to manipulate the event and crew information that the system will use to make its calculations. This section describes the login, menus, toolbar, and status bar, and other common sections of the Storm Management window.

You will initially access Storm Management from a web browser, which will download the application to your computer. Subsequently, you may start it through a desktop shortcut, from your browser Favorites, or from your computer's Start menu.

Note: Many utilities have different rules sets configured for storms versus normal conditions, which will affect the operation of Storm Management. Changing rule sets is done using the **Change Rule Set...** button on the Authority window. For information on changing rule sets in the Operator's Workspace, see **Changing Rule Sets** on page 2-50. For information on changing rule sets in the Web Workspace, see **Changing Rule Sets** on page 7-36.

Login Window

The Login window is the first Storm Management window you see. You must enter a valid user name and password, and then click the Validate button. Once your user name and password are validated, the system populates the option menu that allows you to select a user type. You will see different initial windows and options depending upon the user type specified.

The Login window displays the following fields and buttons:

- The **User ID** field allows you to enter the user name provided to you by the system administrator.
- The **Password** field allows you to enter the password provided to you by the system administrator.

- The **Validate** button verifies your login credentials. If the user name and password are not entered correctly, the system displays a warning dialog box.
- The **User Type** drop-down menu contains the list of user types within your authority.
- The **Login** button allows you to complete the login process. Once you click the Login button, the appropriate Storm Management window opens, based upon the User Type selected.
- The **Change Password...** button allows you to create a new password for your user name.
- The **Quit** button exits the Login window.

Logging In

To login to Storm Management, complete these steps:

1. Depending on how your system was installed, do one of the following:
 - Click the **Storm Management** icon found under the appropriate program group in your Windows Start Menu, or
 - Double click the **Storm Management** icon on your desktop, or
 - Open a web browser and type the Storm Management URL in the browser's Address field. The Storm Management Login window displays.
2. Enter your user name.
3. Enter your password.
4. Click the **Validate** button. The bottom portion of the Storm Management Login window sensitizes.
5. Select the appropriate **User Type** from the drop-down menu.
6. Click the **Login** button. The appropriate Storm Management window opens.

Changing Your Password

You also use the Login dialog box to change your password. To change your password, complete these steps:

1. Depending on how your system was installed, do one of the following:
 - Click the **Storm Management** icon found under the appropriate program group in your Windows Start Menu, or
 - Double click the **Storm Management** icon on your desktop, or
 - Open a web browser and type the Storm Management URL in the browser's Address field. The Storm Management Login window displays.
2. Enter your user name.
3. Enter your password.
4. Click the **Validate** button. The bottom portion of the Storm Management Login window sensitizes.
5. Click on the **Change Password...** button. A Change Password dialog box will appear.
6. Type your old password in the **Old Password** field.
7. Type your new password in the **New Password** field.
8. Retype your new password in the **Verify Password** field to verify the change.

9. Click the **OK** button. You are returned to the Oracle Utilities Network Management System Storm Management Login screen.
10. Click the **Login** button to finish logging in.

Using the Storm Management Window

This section describes how to use the menus, toolbar, and status bar on the Storm Management window. It includes the following topics:

- **Menus**
- **Toolbar**
- **Status Bar**
- **Print Preview**
- **Zone Selection Panel**
- **Summary Information Panel**
- **Storm Report Panel**

Related Topics:

- **Using Storm Management Modes**
 - **Non-Storm Mode**
 - **Storm Mode**
- **Additional Storm Management User Types**
- **Understanding Storm Management Calculations**

Menus

There are four menus on the Storm Management menu bar: System, Storm, Crew, and Help.

- **System Menu**
- **Storm Menu**
- **Crew Menu**
- **Help Menu**

System Menu

The options in the System menu are available in both storm and non-storm modes. The following table describes the System Menu options.

Option	Description
Toggle Storm Mode...	Used to transition a control zone between the Storm Management non-storm and storm modes of operation. Opens the Define Storm dialog, prompting you to enter the information required to transition between modes. This option is not available in study mode.
Save Changes	Saves any changes made in the window outside of the Crew Information table.

Option	Description
ERT Override...	While it is periodically simulating the entire restoration process, Storm Management calculates an estimated assessment and restoration time for each eligible event. These estimates for each event are accessible to other modules (e.g., may be displayed in an Oracle Utilities Network Management System - Trouble Management/Web Trouble Work Agenda column and available in Oracle Utilities Network Management System - Web Call Entry). This option opens the ERT Override dialog, which allows the accessibility of the Storm Management estimates to other modules to be turned on and off at any control zone level, and also allows for an alternate “global” estimate to be applied at any control zone level instead.
Force Simulation Run	Immediately invokes the simulation of the entire restoration process, recalculating the estimates. This option is typically only used in study mode.
Retrieve Update	Refreshes the window with the most recent information from the system. In most cases, the window refreshes itself on a periodic basis. But, if there are unsaved changes in the Storm Management window at the time the automatic refresh is due to occur, the window will not refresh. Instead, an alert appears in the status bar indicating that an update is available, and the Retrieve Update option must be invoked in order to refresh the window with the new update. This allows you to continue making your changes and save them first before refreshing.
Print All...	Opens the Print Preview dialog, which allows you to print out the Summary Information panel, Storm Report panel, Storm Information panel (if present), Crew Information panel (if present), and status bar information from the current Storm Management window.
Print Crews...	Opens this Print Preview dialog, which allows you to print out the Crew Information panel from the current Storm Management window. This option is only available in storm mode.
Exit	Closes the Storm Management window

Storm Menu

The options in the Storm menu are only enabled when Storm Management is in storm mode. The following table describes the Storm Menu options.

Option	Description
Toggle Study Mode	Toggles the Storm Management window between real-time and study modes of operation. The current mode is displayed in the status bar.
Export Study Session	When in study mode, allows you to export the current study session crews and parameters to the real-time session.
Reset Study Session	When in study mode, allows you to reset the current study session with the current real-time session crews and parameters.
Forecast Profiles...	Opens the Forecast Profiles dialog, which is used to save and pre-load outage forecasting parameters. This option is only available in storm mode at the simulation level.
Calculate Crews...	Opens the Calculate Crews dialog, which is used to determine the approximate number of crews needed to complete assessment and repair by a specified date and time.

Crew Menu

The options in the Crew menu are only enabled when Storm Management is in storm mode. The following table describes the Crew Menu options.

Option	Description
Add Crew...	Opens the Add Crew Group dialog, which enables you to define new crew groups for the Crew Information table. See Adding Crew Groups on page 10-29 for more information.
Edit Crew...	Opens the Edit Crew Group dialog, which enables you to change crew data for a selected crew group in the Crew Information table. See Editing Crew Groups on page 10-31 for more information.
Delete Crew	Removes the selected crew group from the Crew Information table. A warning dialog opens, prompting you for confirmation before deleting.
Move Crew...	Opens the Move Crew Group dialog, used to transfer crews from the selected crew group in the Crew Information table to another control zone. See Moving Crew Groups on page 10-32 for more information.
Apply Crew Changes	Saves changes made in the Crew Information table. Unapplied changes in the Crew Information table are highlighted in different colors. See Applying Changes on page 10-27 for more information.

Option	Description
Import Crews...	Opens the Import Crews dialog. In real-time mode, this dialog enables you to import crews from Oracle Utilities Network Management System Trouble Management into the Crew Information table. In study mode, it additionally enables you to import crew group information from the real-time session or the applied manual override or outage forecasting parameters from the real-time session into study mode. See Importing Crews on page 10-27 for more information.

Help Menu

The options in the Help menu are available at all times. The following table describes the Help Menu options.

Option	Description
About Storm Management	Opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Oracle Utilities Network Management System Web Gateway that the application is using.

Toolbar

The Storm Management toolbar provides a shortcut to many of the options available from the Storm Management menus. The toolbar appears below the menu bar by default. You can also dock it on the left side, right side, or bottom of the window or in its own window.

The following table describes the buttons on the Storm Management Toolbar.

Button	Description
 Toggle Storm Mode	Used to transition a control zone between the Storm Management non-storm and storm modes of operation. Opens the Define Storm dialog, prompting you to enter the information required to transition between modes. This option is not available in study mode.
 Save Changes	Saves any changes made in the window outside of the Crew Information table.
 ERT Override	While it is periodically simulating the entire restoration process, Storm Management calculates an estimated assessment and restoration time for each eligible event. These estimates for each event are accessible to other modules (e.g., may be displayed in a Work Agenda column). This option opens the ERT Override dialog, which allows the accessibility of the Storm Management estimates to other modules to be turned on and off at any control zone level, and also allows for an alternate “global” estimate to be applied at any control zone level instead.
 Force Simulation Run	Immediately invokes the simulation of the entire restoration process, recalculating the estimates. This option is typically only used in study mode.

Button	Description
 Retrieve Update	Refreshes the window with the most recent information from the system. In most cases, the window refreshes itself on a periodic basis. But, if there are unsaved changes in the Storm Management window at the time the automatic refresh is due to occur, the window will not refresh. Instead, an alert appears in the status bar indicating that an update is available, and the Retrieve Update option must be invoked in order to refresh the window with the new update. This allows you to continue on with your changes and save them first before refreshing.
 Toggle Study Mode	Toggles the Storm Management window between real-time and study modes of operation. The current mode is displayed in the status bar. This option is only available in storm mode.
 Export Study Session	When in study mode, allows you to export the current study session crews and parameters to the real-time session.
 Reset Study Session	When in study mode, allows you to reset the current study session with the current real-time session crews and parameters.
 Forecast Profiles	Opens the Forecast Profiles dialog, which is used to save and pre-load outage forecasting parameters. This option is only available in storm mode at the simulation level.
 Calculate Crews	Opens the Calculate Crews dialog box, which is used to determine the approximate number of crews needed to complete assessment and repair by a specified date. This option is only available in storm mode.
 Add Crew	Opens the Add Crew Group dialog box, which lets you define new crew groups for the Crew Information table. This option is only available in storm mode.
 Edit Crew	Opens the Edit Crew Group dialog box, which lets you change crew data for a selected crew group in the Crew Information table. This option is only available in storm mode.
 Delete Crew	Removes the selected crew group from the Crew Information table. A warning dialog box opens, prompting you for confirmation before deleting. This option is only available in storm mode.
 Move Crew	Opens the Move Crew Group dialog box, used to transfer crews from the selected crew group in the Crew Information table to another control zone. This option is only available in storm mode.
 Apply Crew Changes	Saves changes made in the Crew Information table. Unapplied changes in the Crew Information table are highlighted in different colors. This option is only available in storm mode.

Button	Description
 Import Crews	Opens the Import Crews dialog box. In real-time mode, this dialog box enables you to import crews from Oracle Utilities Network Management System into the Crew Information table. In study mode, it additionally enables you to import crew group information from the real-time session or the applied manual override or outage forecasting parameters from the real-time session into study mode. This option is only available in storm mode.

Moving the Toolbar

To move the toolbar, complete these steps:

1. Click on the toolbar.
2. Drag it to the new position while holding down the mouse button.
3. Release the mouse button. The toolbar moves to the new location.

Note: If you release the mouse button when the toolbar is near the left of the Storm Management window, the toolbar will dock on that side of the Storm Management window. (The outline of the toolbar will change from black to red when you've dragged it to a position where it will dock itself.) Otherwise, the toolbar displays in its own window.

If the toolbar is in its own window, you can move it back to its last docked position by clicking the **X** in the upper right hand corner of the toolbar window.

Status Bar

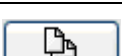
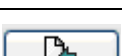
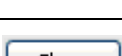
The status bar appears at the bottom of the Storm Management window, providing operating details for the system. The status bar displays the following fields:

- The **Last Update** field displays a timestamp indicating the date and time at which the most recent estimates were calculated.
- The **New Upd** field is an indicator that appears when there are unsaved changes at the time the automatic refresh of the Storm Management window is due to occur. The refresh does not occur until you click the Retrieve Update button on the toolbar or select the Retrieve Update option from the System menu. This field is blank at all other times.
- The **Real-Time/Study Mode** field displays STUDY MODE in gray when the currently selected control zone is in the Storm Management study mode of operation and REAL-TIME MODE in red when the zone is in real-time mode.
- The **Storm/Non-Storm Mode** field displays NON-STORM MODE in gray when the currently selected control zone is in the Storm Management non-storm mode of operation and STORM MODE in orange when the currently selected zone is in the Storm Management storm mode of operation.
- The **ERT Override** field indicates whether any control zone in the system presently has its Storm Management estimates accessible to other modules (e.g., may be displayed in an Oracle Utilities Network Management System Trouble Management/Web Trouble Work Agenda column and available in Oracle Utilities Network Management System Web Call Entry) or overridden by an alternate estimate. If they are not accessible, or if they are overridden, this field displays ON. If not, this field displays OFF.
- The **Lookups** field indicated the historical lookup value Shift, Season, and Day Type attributes that apply to the current time.

Print Preview

The Print Preview dialog appears whenever one of the printing options is selected in Storm Management.

The following table describes the buttons on the Print Preview dialog.

Button	Description
 Previous Page	Used to traverse the preview to the previous page in a multi-page output.
 Next Page	Used to traverse the preview to the next page in a multi-page output.
 Zoom Out	Used to zoom out on the contents of the preview.
 Zoom In	Used to zoom in on the contents of the preview.
 Scale Out	Used to scale out the font used for the print output.
 Scale In	Used to scale in the font used for the print output.
 Toggle Orientation	Toggles the page orientation of the output between portrait and landscape.
 Page Setup	Brings up the Page Setup dialog, which allows you to select paper size and source, set page orientation, set margins, and select the printer.
 Reset to Default Setting	Reverts the preview window back to its default settings.
 Print	Sends the print output to your selected printer, and then closes the Print Preview dialog.
 Close	Closes the Print Preview dialog without printing any output.

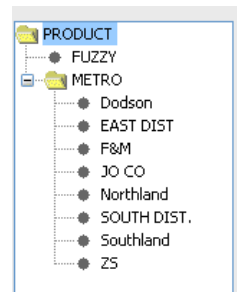
Setting Margins

You can use the Print Preview dialog to set the margins of the output interactively. Follow these steps:

1. Position your cursor over the preview output until you see a red outline and your cursor becomes a double-headed arrow.
2. While the cursor is a double-headed arrow, click and hold your left mouse button and drag the red line to the desired location.

Zone Selection Panel

The Storm Management window information is displayed on a per control zone basis, supporting views for the top three levels of the control zone hierarchy in the operations model. The top-level (usually the “Company” level) control zone view displays when Storm Management starts up. The Zone Selection tree in the upper left hand corner of the window lists all of the available zones for selection.



Selecting the Control Zone to View

You can view the information for another control zone by selecting that zone in the Zone Selection tree. The data displayed applies to the selected zone and all of its children. However, some components may be disabled if the currently selected control zone is not at the simulation level.

Resizing the Zone Selection Panel

You can resize the Zone Selection panel by dragging the right side of the panel to the left or right.

Summary Information Panel

The Storm Management Summary Information panel, located in the upper right corner of the window, provides an overview of the estimates for both the selected zone and the Company level zone. Each time you select a different control zone from the Zone Selection tree, the Summary Information Panel refreshes to display the information for the newly selected zone. (If you select the Company level zone, the Summary Information table contains only the one row of Company information.)

The Summary Information Panel displays the following fields:

- The **Zone** column contains the name of the Company level zone and the currently selected zone.
- The **Est Assessed By** column contains the estimated date and time when all assessment within the control zone will be complete.
- The **Est Restored By** column contains the estimated date and time when all events within the control zone will be restored.
- The **ERT Override** field displays the alternate estimated restoration time, if a published or non-published control-zone wide alternate estimate is currently being applied to the selected zone. See **ERT Override Dialog** on page 10-13 for more information.

Storm Report Panel

The Storm Management Storm Report is the main panel on the Storm Management window. It provides an overview of the historical averages, actual averages, and estimates for each outage type in the currently selected control zone. Each time you select a different control zone from the Zone Selection tree, the Storm Report Panel refreshes to display the information for the newly selected zone.

The Storm Report Panel displays the following columns:

- The **Outage Types** column contains the name of the Storm Management outage type category.
- The **Actual Outages** column contains the actual number of unrestored events of the corresponding outage type in the currently selected control zone.
- The **Total Outages** column contains the total number of forecasted outages of the corresponding outage type in the currently selected control zone. If the currently selected control zone is operating storm mode, this value may be assigned or calculated as a percentage of the Actual Outages column using the Storm Management outage forecasting functionality. If the currently selected control zone is operating in non-storm mode, the value of this column is equal to the value of the Actual Outages column, because the outage forecasting functionality is not available in non-storm mode.
- The **Travel to Assess** column contains the average number of minutes between dispatch of an assessment crew and the arrival of that crew on the job site. The number outside of the parentheses is the historical average used in the Storm Management estimate calculations. The number in parentheses is the actual average that has been occurring out in the field over the past 2 hours.
- The **Assess** column contains the average number of minutes taken to assess the effort needed to restore/repair the event. The number outside of the parentheses is the historical average used in the Storm Management estimate calculations. The number in parentheses is the actual average that has been occurring out in the field over the past 2 hours.
- The **Travel to Repair** column contains the average number of minutes between dispatch of the repair crew and the arrival of that crew on the job site. The number outside of the parentheses is the historical average used in the Storm Management estimate calculations. The number in parentheses is the actual average that has been occurring out in the field over the past 2 hours.
- The **Repair** column contains the average number of minutes taken to restore/repair the event. The number outside of the parentheses is the historical average used in the Storm Management estimate calculations. The number in parentheses is the actual average that has been occurring out in the field over the past 2 hours.
- The **Clean** column contains the average number of minutes taken to by the repair crew to clean up after the event is restored before going to the next job. The number outside of the parentheses is the historical average used in the Storm Management estimate calculations. The number in parentheses is the actual average that has been occurring out in the field over the past 2 hours.
- The **Total Time to Assess hrs:min** column contains the raw amount of time required to assess all outages of the corresponding outage type in the currently selected control zone, in hours and minutes. The very basic formula for calculating this value is the following: (Travel to Assess + Assess) * number of Actual Outages. However, if any outage forecasting or manual overrides are currently applied, or if the simulation has any of the outages projected to be assessed at a time that would use a different Travel to Assess or Assess time other than what's currently displayed in the Storm Management window, then that basic formula no longer holds.

- The **Estimated Assessed By** column contains the estimated date and time at which the last of all outages with the corresponding outage type in the currently selected control zone will be assessed.
- The **Total Time to Restore hrs:min** column contains the raw amount of time required to repair all events of the corresponding outage type in the currently selected control zone, in hours and minutes. The very basic formula for calculating this value is the following: (Travel to Repair + Repair) * number of Actual Outages in non-storm mode, or (Travel to Repair + Repair + Clean) * number of Actual Outages in storm mode. However, if any outage forecasting or manual overrides are currently applied, or if the simulation has any of the outages projected to be repaired at a time that would use a different Travel to Repair or Repair or Clean time other than what's currently displayed in the Storm Management window, then that basic formula no longer holds.
- The **Estimated Restored By** column contains the estimated date and time at which the last of all outages with the corresponding outage type in the currently selected control zone will be restored.
- The **Forecast Mode** drop-down menu enables you to select what kind of outage forecasting you want to apply. This field is only enabled when the currently selected control zone is one at the simulation level operating under storm mode. List options include:
 - **% Change** - Allows the % Change cell beneath the Actual Outages column to become editable, enabling you enter a percentage greater than 100. This increases the value in the Total Outages column for each outage type by that percentage.
 - **Value** - Allows the Total Outages cell for each outage type row to become editable. It also disables the % Change cell under the Actual Outages column.

Using Storm Management Modes

Storm Management has three modes of operation: Non-storm, Storm, and Study. Non-storm mode applies to everyday operations. Storm mode is useful during and after a storm or other high volume outage period. In this mode, the estimate calculations factor in crew availability. Study mode enables you to manipulate parameters that affect the estimate calculations, such as outage forecasting, manual overrides and crew information without altering the current real-time calculations. Also, once in study mode, the user can export parameters from the study session back into the real-time session. This section provides details on how to use the following Storm Management modes to analyze and manipulate its output.:

- **Non-Storm Mode**
- **Storm Mode**
- **Study Mode**

Non-Storm Mode

Non-storm mode applies to everyday operations. When calculating estimates, crew resources are not taken into account because it is assumed there are enough crews available to handle all events. All control zone views operate in non-storm mode until explicitly placed into storm mode.

This section includes the following topics:

- **Using ERT Overrides**
- **Manual Overrides**

Using ERT Overrides

While it is periodically simulating the entire restoration process, Storm Management calculates an estimated assessment and restoration time for each eligible event. These estimates for each event are accessible to other modules (e.g., may be displayed in an Oracle Utilities Network Management System – Trouble Management/Web Trouble Work Agenda column). However, it is not always prudent to have these estimates available to these other modules. For example, when you initially enter storm mode and the available crew resources have not been fully defined, the calculated estimates would be rather inaccurate.

This section includes the following topics:

- **ERT Override Dialog**
- **Turning Off Accessibility of the Estimates**
- **Overriding the Estimates**
- **Changing Publish/Non-Publish or Default ERT Information**
- **Turning Accessibility of Projections Back On/Removing Overrides**
- **Printing ERT Overrides**

ERT Override Dialog

You can turn off the accessibility of Storm Management estimates to other modules by using the ERT Override dialog. To open the ERT Override dialog, do one of the following:

- Select the **ERT Override...** option from the System menu, or
- Click the **ERT Override** button on the toolbar.

The ERT Override dialog can also export a “global” estimated restoration time for all events at any control zone level.

The ERT Override dialog contains the following fields and buttons:

- The **Zone** column contains the control zone that is having its Storm Management calculated estimates made inaccessible or overridden. Once you click in the Zone column, a button displays. This button opens the Control Zone Selection dialog.
- The **ERT Override** column contains the estimated restoration date and time for all events within the control zone to be displayed outside of Storm Management. Once you click in the ERT Override column, a button displays. This button opens a calendar that enables you select a date and time. The date/time you enter must be in the future. This field may be left blank.
- The **Publish Projections** column contains a checkbox that indicates whether or not the ERT Override value is published to other modules for the affected events.
- The **User** column displays the id of the user who provided the ERT override/delay value.
- The **Add** button adds a new default row to the table in the ERT Override dialog. That default row may then be edited to contain the desired control zone, ERT Override date/time, and publish values. If a row marked for removal is selected, pressing the Add button will undo the removal mark. New, unsaved rows display in the table as green. Edited, unsaved rows display in the table as cyan.
- The **Remove** button marks the selected row for removal from the table in the ERT Override dialog. Rows marked for removal display in the table as red.
- The **OK** button applies the specified overrides to any newly added or modified row’s respective control zones, and any rows marked for removal will have all overrides removed from their respective control zones. If the ERT Override table contains more than one row for the same zone, an error dialog will appear and no changes will be saved.

- The **Print...** button brings up the Print Preview dialog, which allows you to print out the contents of the ERT Override dialog.
- The **Cancel** button closes the dialog without saving changes, and leaves the accessibility/overrides of the Storm Management estimates as they were.

Note: Applying overrides to the Storm Management estimates has no effect on events that have a crew onsite or events that have had an ERT manually entered in Oracle Utilities Network Management System. Those events will retain the display of their present manually entered/Storm Management ERT.

The following table describes what occurs when different combinations of ERT Override column and Publish Projections column values are applied.

If...	Then...
The Publish Projections checkbox is checked and you enter a date and time in the ERT Override column for that row...	All events in that control zone will receive that date and time as their default ERT value outside of Storm Management: The ERT Override value displays in the ERT Override field of the Summary Information table along with the word “Published”. The ERT Override value displays for current outages in that control zone in other modules. New outages in that control zone receive the ERT Override value until you turn the override of the Storm Management estimates off.
The Publish Projections checkbox is checked and you did not enter a date and time in the ERT Override column for that row...	All events in that control zone will receive a blank value as their default ERT value outside of Storm Management: The ERT Override field in the Summary Information panel simply contains the word “Published”. Current and new events display a blank ERT value in other modules until you turn the override of the Storm Management estimates off.
If the Publish Projections checkbox is not checked and a date and time are entered in the ERT Override column for that row...	All events in that control zone will receive a blank value as their default ERT value outside of Storm Management, regardless of whether or not a date and time is entered in the ERT Override column for that row; current and new events display a blank ERT value in other modules until you turn the override of the Storm Management estimates off: The ERT Override value displays in the ERT Override field of the Summary Information table along with the word “Non-Published”.
If the Publish Projections checkbox is not checked and a date and time are not provided in the ERT Override column for that row...	All events in that control zone will receive a blank value as their default ERT value outside of Storm Management, regardless of whether or not a date and time is entered in the ERT Override column for that row; current and new events display a blank ERT value in other modules until you turn the override of the Storm Management estimates off: The ERT Override field in the Summary Information panel contains the word “Non-Published”.

Turning Off Accessibility of the Estimates

To turn the accessibility of the estimates off, complete these steps:

1. Do one of the following:
 - Click the **ERT Override** button on the toolbar, or
 - Select the ERT Override option from the System menu. The ERT Override dialog opens.
2. Click the **Add** button to add a new row to the ERT Override table.
3. Click into the Zone cell of the new row, and then click the button on the right of the Zone field.
 - The Control Zone Selection dialog opens.
4. Select the control zone whose estimates you wish to make inaccessible.
5. Click **OK**.
 - The Control Zone Selection dialog closes.
 - The zone you selected populates the Zone field.
6. Uncheck the Publish Projections checkbox.
7. Click **OK**. Storm Management's calculated estimates for that control zone are no longer accessible to other Oracle Utilities Network Management System windows and the ERT Override dialog closes.

Overriding the Estimates

To override the estimates to a default "global" ERT for the events in a zone, complete these steps:

1. Do one of the following:
 - Click the **ERT Override** button on the toolbar, or
 - Select the ERT Override... option from the System menu. The ERT Override dialog opens.
2. Press the **Add** button to add a new row to the ERT Override table.
3. Click into the Zone cell of the new row, and then click the button on the right of the Zone field.
 - The Control Zone Selection dialog opens.
4. Select the control zone whose estimates you wish to make inaccessible and click **OK**.
 - The Control Zone Selection dialog closes.
 - The zone you selected populates the Zone field.
5. Click into the ERT Override cell of the new row, and then click on the Calendar button.
6. Select a date and time for the new default ERT. Click **OK** on the Calendar dialog to close it.
7. Click out of the ERT Override cell and into a different cell to ensure the ERT Override time is saved.
8. Make sure the Publish Projections checkbox is checked.
9. Click **OK**. Storm Management's calculated estimates for that control zone are no longer displayed to other modules; the provided ERT Override value is displayed instead. The ERT Override dialog closes.

Changing Publish/Non-Publish or Default ERT Information

If you have the accessibility of the Storm Management estimates turned off, you can revise the default ERT, or you can change from publishing the default ERT to not publishing it or vice versa, without having to first turn the accessibility back on. To do this, complete these steps:

1. Do one of the following:
 - Click the **ERT Override** button on the toolbar, or
 - Select **ERT Override...** option from the System menu. The ERT Override dialog opens.
2. If you want to update the ERT Override for a zone, click into the ERT Override cell of the applicable row, click on the Calendar button.
3. Select a date and time, then click **OK**.
4. Click out of the ERT Override cell and into a different cell to ensure the ERT Override time is saved.
5. Check or uncheck the Publish Projections checkbox for the applicable row.
6. Click **OK**. The following occurs:
 - The ERT Override dialog closes.
 - The default ERT is published and/or revised if the Publish Projections checkbox was checked, or
 - The default ERT is not published if the Publish Projections checkbox was not checked.

Turning Accessibility of Projections Back On/Removing Overrides

To turn the accessibility of the Storm Management estimates back on and/or remove ERT Overrides, complete these steps:

1. Do one of the following:
 - Click the **ERT Override** button on the toolbar, or
 - Select the ERT Override... option from the System menu. The ERT Override dialog opens.
2. Select the row that corresponds to the zone for which you want to turn the accessibility of estimates back on/remove the applied ERT Override.
3. Press the <Esc> key on your keyboard.
4. Click **Remove**.
5. Repeat previous steps as needed.
6. Click **OK**. The following occurs:
 - All eligible events immediately receive the most recently calculated Storm Management estimates.
 - If all rows have been removed from the ERT Override table, the status bar indicates ERT Override is off.

Printing ERT Overrides

To print the contents of the ERT Override dialog, complete these steps:

1. Do one of the following:
 - Click the **ERT Override** button on the toolbar, or
 - Select the ERT Override... option from the System menu. The ERT Override dialog opens.
2. Click the **Print...** button. The Print Preview dialog opens.

3. Adjust the scale, orientation, and page setup as desired.
4. Click the **Print** button on the toolbar to print the page(s). The Print Preview dialog disappears and the print output appears at your selected printer.

Manual Overrides

It may occur that the actual averages are significantly different from the historical averages. The % Change row of the Storm Report lets you temporarily manually override each category of the historical averages. The percentage you enter changes the lookup values used in the calculation of the estimates. This functionality is only available when the currently selected control zone is at the simulation level.

Overriding Historical Averages

To override the historical averages, complete these steps:

1. Make sure the currently selected control zone is at the simulation level.
2. Click in the cell of the % Change row for the column of the corresponding historical average category you want to change.
3. Revise the percentage in the cell to the value you want to use.
4. Click **Enter**.
5. Click the **Save** button on the toolbar or select Save from the System menu. The historical averages in the column immediately update to reflect the change.

Storm Management will use the modified values when recalculating estimates during the next scheduled simulation iteration. The modified values stay in place until you manually change the % Change row back to 100% or, if applied during storm mode, you exit storm mode. The historical averages are not changed in the database.

Storm Mode

Storm mode is useful during and after a storm or other high volume outage period. In this mode, the estimate calculations factor in crew availability.

Once a crew arrives onsite at an event, the Storm Management estimate calculation will then use the actual crew arrival time rather than the projected arrival time. The estimate calculation can adjust again when a crew reports an estimated repair time based upon observed field conditions.

This section includes the following topics:

- **Entering Storm Mode**
- **Using Define Storm Dialog**
- **Placing a Control Zone in Storm Mode and Defining the Storm Information**
- **Joining Existing Storms**
- **Joining a Control Zone to an Existing Storm**
- **Viewing Storm Information**
- **Changing Storm Levels**
- **Changing Storm Types**
- **Forecasting Outages**
- **Using Forecast Profiles**
- **Working with Crew Information**
- **Exiting Storm Mode**

Entering Storm Mode

To enter storm mode for a control zone, complete these steps:

1. Do one of the following:
 - Select **Toggle Storm Mode** from the System menu, or
 - Click the **Toggle Storm Mode** button on the toolbar.

The Define Storm dialog opens. Enter the storm data.

2. Click the **Ok** button.

Note: You can only enter storm mode from real-time mode. Once in storm mode, you can switch to study mode.

Using Define Storm Dialog

The Define Storm dialog opens once you toggle to storm mode. You must enter information about the storm before Storm Management will change modes. The information you provide here is used to populate parts of the Storm Information section of the window.

The Define Storm dialog displays the following fields and buttons:

- The **Zone** field displays the Name of the currently selected zone. This control zone and all of its children that aren't already in storm mode will be placed into storm mode as a part of this storm. This field is not editable.
- The **Storm Date** field defaults to the current date and is used in conjunction with the Storm Name as the unique identifier of the storm. If this field is not populated when you click the **OK** button, an error message appears. Click **OK** to close the message and correct the error.
- The **Storm Name** field allows you to enter the name of the storm. This value is used in conjunction with the Storm Date as the unique identifier of the storm. If this field is not populated when you click the **OK** button, an error appears. Click **OK** to close the message and correct the error.
- **Special Condition** is a drop-down menu of storm types that indicate a pre-defined condition existing with the storm. This condition may also dictate a different set of historical average values be used in the estimate calculations made by the system.
- **Storm Level** is a drop-down menu of severity levels for the storm. This value is recorded for information and reporting purposes only and has no effect on the estimate calculations.
- **Start Date** is the date and time at which the storm started. When you uncheck the "Use current time" option, the button on the right of this field opens a calendar that enables you to select the date and time. Valid dates and times are those prior to (and including) the current time. If your entry is invalid, an error message appears. Click **OK** to close the message and correct the error.
- The **Use Current Time** checkbox is selected by default. This option allows you to leave the Start Date field blank and have the current system time on the server be used as the Start Date of the storm. Deselecting this option enables the calendar button to the right of the Start Date field.
- The **Ok** button saves the entered storm information and closes the dialog. Storm Management is now operating in storm mode for the corresponding control zone(s).
- The **Cancel** button discards the entered storm information and closes the dialog without switching the currently selected control zone into storm mode.

Placing a Control Zone in Storm Mode and Defining the Storm Information

To place a control zone in storm mode and define the storm information, complete these steps:

1. Make sure the desired control zone is selected in the Zone Selection panel, and that the zone is in non-storm mode.
2. Do one of the following:
 - Select the Toggle Storm Mode option from the System menu, or
 - Click the **Toggle Storm Mode** button on the toolbar. The Define Storm dialog opens.
3. Provide information in both the Storm Date and Storm Name fields.
4. Select a Special Condition from the drop-down list, if desired.
5. Select a Storm Level from the drop-down list, if desired.
6. Select a date and time for the storm's Start Date. Either:
 - Leave the Use Current Time option checked.
 - Uncheck the Use Current Time option. Click the Start Date calendar button and select a date and time for the storm's start date. Click **OK**. The calendar closes, and the selected date and time populate the Start Date field.
7. In the Define Storm dialog, click **Ok**. The following occurs:
 - The Storm Information panel appears in between the Zone Selection and Summary Information panels. The Crew Information panel appears below the Zone Selection and Storm Report panels.
 - Storm Management operates in storm mode for the selected control zone.
 - If the selected control zone has any child zones not already operating in storm mode, the child zones operate in storm mode as part of this same storm.

Note: If your system has a control zone set up directly beneath the top-level control zone to contain all of the fuzzy events in the system, that fuzzy control zone cannot be placed into storm mode. That fuzzy zone will only go into storm mode when its parent zone is placed into storm mode.

Joining Existing Storms

If you try to place a control zone into storm mode and either: 1) there are other control zones at the same level that are already operating in storm mode, or 2) the selected zone has children that are currently operating in storm mode, then the Define Storm dialog opens with a Join Existing Storm panel. This panel gives you the option of adding the currently selected control zone to an existing storm rather than creating a separate new one.

The Join Existing Storm panel lists the existing storms that the selected control zone can be added to. When you select a storm from the list, the Storm Details section of the dialog populates with the information that pertains to the selected storm, and then the only editable field is the Start Date.

The Join Existing Storm panel displays the following buttons:

- The **Clear Selection** button deselects the storm in the list and reverts the fields of the Storm Details section back to their default, editable values. This button is only enabled when an existing storm is selected from the list.
- The **Ok** button saves the entered storm information and closes the dialog. Storm Management is now operating in storm mode for the corresponding control zone(s).
- The **Cancel** button discards the entered storm information and closes the dialog without switching the currently selected control zone into storm mode.

Joining a Control Zone to an Existing Storm

To join a control zone to an existing storm, complete these steps:

1. Make sure the desired control zone is selected in the Zone Selection tree, and that the zone is in non-storm mode.
2. Do one of the following:
 - Select the Toggle Storm Mode option from the System menu, or
 - Click the **Toggle Storm Mode** button on the toolbar. The Define Storm dialog opens with the Join Existing Storm panel displayed.
3. In the Join Existing Storm panel, select the storm you want the selected zone to join.
4. Select a date and time for the storm's start date using one of the methods below:
 - Leave the Use Current Time option checked. The current system time on the server will be used as the Start Date of the storm in this control zone.
 - Uncheck the Use Current Time option. The Start Date of the storm you selected to join will be used as the Start Date of the storm in this control zone, unless you explicitly edit it.
 - To then edit the Start Date, click on the Start Date **calendar** button and select a date and time for the storm's start date. Click **OK**. The calendar closes, and the selected date and time populate the Start Date field.
5. In the Define Storm dialog, click **Ok**. The following occurs:
 - The Storm Information panel appears in between the Zone Selection and Summary Information panels. The Crew Information panel appears below the Zone Selection and Storm Report panels.
 - Storm Management operates in storm mode for the selected control zone.
 - If the selected control zone has any child zones not already operating in storm mode, the child zones operate in storm mode as part of this same storm.

Note: If all of the children of a zone are eventually placed under the same storm individually with the Join Existing Storm panel, the parent zone is automatically placed into storm mode when the last child zone is joined to that storm. The parent zone adopts the earliest Start Date of all of its children.

Viewing Storm Information

Once in storm mode, the Storm Information panel is visible. The Storm Information panel (located between the Zone Selection panel and the Summary Information panel) displays most of the data provided when you entered into the Define Storm dialog when you placed the zone into storm mode.

The Storm Information Panel displays the following fields:

- The **Storm Name** field displays the name of the storm. This field is not editable and is populated by information entered into the Storm Name field of the Define Storm dialog.
- The **Storm Date** field displays the starting date of the storm. This field is not editable and is populated by information entered into the Storm Date field of the Define Storm dialog.
- **Storm Level** is a drop-down menu of severity levels of the storm. It is initially populated by the option selected on the Storm Level drop-down menu of the Define Storm dialog. If you modify the Storm Level for a control zone that has child zones as part of the same storm, the Storm Level for all of those child zones will be changed to the modified value as well.
- **Special Condition** is a drop-down menu of special storm types. It is initially populated by the option selected on the Special Condition drop-down menu of the Define Storm dialog. If

you modify the Special Condition for a control zone that has child zones as part of the same storm, the Special Condition for all of those child zones will be changed to the modified value as well.

Changing Storm Levels

The Storm Level value is recorded for information and reporting purposes only and has no effect on the estimate calculations.

To change the Storm Level selection, complete these steps:

1. Make sure the currently selected control zone is at the simulation level and operating in storm mode.
2. In the Storm Information panel, select the new storm type from the Storm Level drop-down menu.
3. Click the **Save Changes** button or select the Save Changes option from the System menu.
 - Any child zones of the currently selected zone that are also part of this same storm will receive the new storm level as well.

Changing Storm Types

The storm type listed in the Special Condition drop-down menu is linked to a specific set of historical average values. If the characteristics of a zone's storm change, you can change the Special Condition value and have the system use a new set of historical average values in its estimate calculations for that zone.

To change the Special Condition storm type, complete these steps:

1. Make sure the currently selected control zone is at the simulation level and operating in storm mode.
2. In the Storm Information panel, select the new storm type from the Special Condition drop-down menu.
3. Click the **Save Changes** button or select **Save Changes** from the System menu.
 - The Storm Report panel immediately repopulates with the historical averages for the new storm type.
 - Any child zones of the currently selected zone that are also part of this same storm will receive the new storm type as well.
 - Storm Management will use the historical average values that apply to the new storm type when recalculating estimates for events in that control zone, as well as its child zones that belong to the same storm, during the next scheduled simulation iteration.

Example of Changing Storm Types

For example, the Branch level of the control zone hierarchy is the simulation level. A Wind/Rain storm was defined for the Metro branch zones, which includes the Johnson County, Southland, and Northland zones. However, the temperature in the Southland zone was cold enough for ice to form. The Special Condition in the Metro zone is set to Wind/Rain storm, so estimates being calculated for Southland could be inaccurate due to the increased travel time involved in the icy conditions being observed there.

If you change Special Condition in the Southland zone to Ice, the historical value averages in the Storm Report repopulate with values appropriate for an ice storm. When the next scheduled simulation iteration occurs, the events in the Southland zone receive estimates calculated using the historical averages for Ice, while the events in all other control zones in the Metro region continue to receive estimates calculated using the historical averages for Wind/Rain.

Forecasting Outages

Outage forecasting takes into account future storm load. It provides more accurate estimated restoration projections in the early stages of a storm by simulating the expected impact of the storm. Outage forecasting can be performed in a control zone at the simulation level currently operating storm mode.

Forecasting Outages by Percentage

To perform outage forecasting by percentage, complete these steps:

1. Make sure the Forecast Mode field in the Storm Report panel is set to % Change, and the current control zone is at the simulation level.
2. Click in the % Change cell beneath the Actual Outages column.
3. Revise the percentage in the cell to the value you want to use. This value must be greater than or equal to 100%.
4. Press **Enter**.
5. Click the **Save Changes** button on the toolbar or select **Save Changes** from the System menu. The following occurs:
 - The value in the Actual Outages column for each outage category is multiplied by the percentage in the % Change row and the result is displayed in the Total Outages column for each outage type. If any outage type currently has an Actual Outages value of 0, then 0 will remain displayed in the Total Outages column until at least one event of that outage type appears.
 - New outages that enter the system reflect the forecasting percentage and update the Total Outages column accordingly.
 - During the next scheduled simulation, the Storm Management estimates calculation takes into account the increased outage percentage. The modified percentage stays in place until the value in the % Change row is changed back to 100 or until storm mode is exited for the control zone.

Forecasting Outages by Value

The Total Outages column of the Storm Report is a calculated column containing the number of total forecasted outages for each outage type. When the currently selected control zone is at the simulation level and operating in storm mode, you can override the value of this column by editing individual cells within the column.

To perform outage forecasting by value, complete these steps:

1. Make sure the Forecast Mode field is set to Value and the current control zone is at the simulation level.
2. Click in the cell beneath the Total Outages column for the Outage Type whose value you wish to forecast.
3. Enter the new value.
4. Click **Enter**.
5. Click the **Save Changes** button on the toolbar or select **Save Changes** from the System menu. The following occurs:
 - The Total cell value beneath the Total Outages column updates to reflect the new sum using the modified forecast values.
 - During the next scheduled simulation, the Storm Management estimates calculation takes into account the increased number of outages.

- As new outages enter the system, the Total Outages column stays the same until the number of Actual Outages for an outage type exceeds the number of total outages. Once that occurs, Value forecasting is no longer applied to that outage type.

Note: If you enter an invalid value into the Total Outages column, the cell reverts to its previous value when the **Save** button is pressed.

Using Forecast Profiles

You may want to define and save one or more outage forecasting profiles to be used for analysis and resource planning prior to a storm's occurrence. You can create, edit, delete, and apply forecasting profiles by using the Forecast Profiles window.

This section includes the following topics:

- **Forecast Profiles Window**
- **Adding a Profile**
- **Editing a Profile**
- **Removing a Profile**
- **Applying a Profile**
- **Printing Forecast Profiles**

Forecast Profiles Window

To open the Forecast Profiles window, complete these steps:

1. Make sure the currently selected control zone is at the simulation level.
2. Do one of the following:
 - Select the **Forecast Profiles...** option from the System menu, or
 - Click the **Forecast Profiles** on the toolbar.

The Forecast Profiles window displays the following fields and buttons:

- The **Add Profile** button adds a new default row to the table in the Forecast Profiles dialog. That default row may then be edited to contain the desired profile name and outage type values. If a row marked for removal is selected, pressing the Add Profile button will undo the removal mark. New, unsaved rows display in the table as green. Edited, unsaved rows display in the table as cyan.
- The **Remove Profile** button marks the selected row for removal from the table in the Forecast Profiles window. Rows marked for removal display in the table as red.
- The **Save Profiles** button saves any new or modified profiles, and any rows marked for removal will be deleted. If the Forecast Profiles table contains more than one row with the same profile name, an error dialog will appear and no changes will be saved.
- The **Profile Name** column contains a unique name for the profile.
- The remaining columns correspond to each Storm Management outage type category. These columns contain the number of outages of that outage type that comprise the forecast profile.

Buttons

- The **Apply Profile** button applies the selected forecast profile values into the Total Outages column of the Storm Report panel.
- The **Print...** button brings up the Print Preview dialog, which allows you to print out the contents of the Forecast Profiles dialog.
- The **Cancel** button closes the dialog without saving changes, and leaves the forecast profiles as they were.

Adding a Profile

To add a new outage forecasting profile:

1. Do one of the following:
 - Click the **Forecast Profiles** button on the toolbar, or
 - Select **Forecast Profiles** from the System menu. The Forecast Profiles dialog opens.
2. Click the **Add Profile** button to add a new row to the Forecast Profiles table.
3. Click into the Profile Name cell of the row and specify a unique name for this profile.
4. Click in the desired outage type cells of the row and specify a number of outages.
5. Click the **Save Profiles** button. The Forecast Profiles dialog closes and the new profile is saved for later use.

Editing a Profile

To edit an existing outage forecasting profile:

1. Do one of the following:
 - Click the **Forecast Profiles** button on the toolbar, or
 - Select **Forecast Profiles** from the System menu. The Forecast Profiles dialog opens.
2. Click into the desired cell of the desired forecast profile and modify the profile name/outage type count.
3. Click the **Save Profiles** button. The Forecast Profiles dialog closes and the edited profile is saved for later use.

Removing a Profile

To remove an existing outage forecasting profile:

1. Do one of the following:
 - Click the **Forecast Profiles** button on the toolbar, or
 - Select the Forecast Profiles option from the System menu. The Forecast Profiles dialog opens.
2. Click into the any cell of the forecast profile to be removed.
3. Press the <Esc> key on your keyboard.
4. Click the **Remove Profile** button.
5. Click the **Save Profiles** button. The Forecast Profiles dialog closes and the marked profile is removed.

Applying a Profile

To apply an outage forecasting profile:

1. Do one of the following:
 - Click the **Forecast Profiles** button on the toolbar, or
 - Select **Forecast Profiles** from the System menu. The Forecast Profiles dialog opens.
2. Click into the any cell of the forecast profile to be applied.
3. Click the **Apply Profile** button. The Forecast Profiles dialog closes, and the Total Outages column of the Storm Report for each outage type is now populated with the corresponding value from the forecast profile.
4. Click the **Save Changes** button. The Total cell value beneath the Total Outages column updates to reflect the new sum using the modified forecast values. For any outage type where

the Actual Outages value exceeds the forecasted value, the Total Outages column for that outage type will instead display the Actual Outages value rather than the forecasted value.

Printing Forecast Profiles

To print the contents of the Forecast Profiles dialog, complete these steps:

1. Do one of the following:
 - Click the **Forecast Profiles** button on the toolbar, or
 - Select **Forecast Profiles...** from the System menu. The Forecast Profiles dialog opens.
2. Click the **Print...** button. The Print Preview dialog opens.
3. Adjust the scale, orientation, and page setup as desired.
4. Click the **Print** button on the toolbar to print the page(s). The Print Preview dialog disappears and the print output appears at your selected printer.

Working with Crew Information

Storms create critical outage situations that make it vital to account for crew resources. For example, you may need to move a crew to a different control zone depending on the backlog of outages within each zone. This section includes the following topics:

- **Crew Information Panel**
 - **Hiding the Crew Information Table**
 - **Sorting the Crew Information Table**
- **Applying Changes Importing Crews**
- **Importing Crews**
- **Adding Crew Groups**
- **Editing Crew Groups**
- **Deleting Crew Groups**
- **Moving Crew Groups**

Crew Information Panel

The Crew Information table, located directly below the Storm Report, lists all of the crews identified in Storm Management for the currently selected control zone and its children. Crews of certain skill and availability within a control zone are grouped together. Each row in the Crew Information table represents a group of crews. The buttons above the table let you modify the information for each group. There are buttons on the toolbar that perform the same functions.

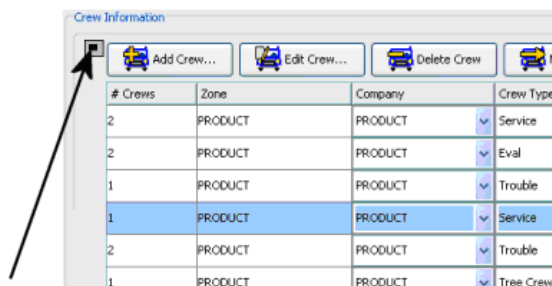
The Crew Information panel displays the following fields and buttons:

- The **# Crews** column contains the number of crews that belong to the group.
- The **Zone** column contains the name of the control zone that crew group is assigned to.
- The **Company** column contains the name of the company that the crew group works for. This column is for informational purposes and does not affect the outcome of the estimate calculations.
- The **Crew Type** column contains the type of crew within the group. This indicates the type of work performed by the crews. The options here match the crew types defined in the Crew Makeup window of Oracle Utilities Network Management System Trouble Management.
- The **Start Date** column contains the date and time at which each crew in the group is available for work.

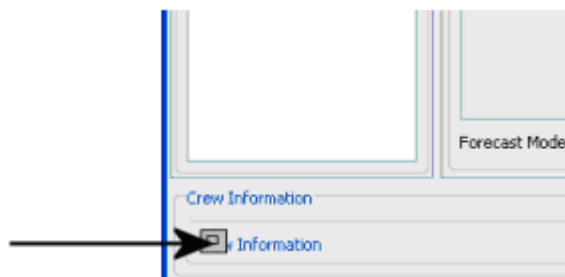
- The **End Date** column contains the date and time at which each crew in the group becomes unavailable for work.
- The **Hours On** column contains the length of the shift worked by each crew in the group.
- The **Hours Off** column contains the length of time between shifts worked by each crew in the group (i.e., the number of hours that the each crew in the group has off after completing each shift).
- The **Add Crew...** button opens the Add Crew Group dialog, which lets you define new crew groups for the Crew Information table.
- The **Edit Crew...** button opens the Edit Crew Group dialog, which lets you change crew data for a selected crew group in the Crew Information table.
- The **Delete Crew...** button removes the selected crew group from the Crew Information table. A warning dialog opens, prompting you for confirmation before deleting.
- The **Move Crew...** button opens the Move Crew Group dialog, used to transfer crews from the selected crew group in the Crew Information table to another control zone.
- The **Apply Crew Changes** button saves changes made in the Crew Information table. Unapplied changes in the Crew Information table are highlighted in different colors.
- The **Import Crews...** button opens the Import Crews dialog. In real-time mode, this dialog lets you import crews from Oracle Utilities Network Management System Trouble Management into the Crew Information table. In study mode, it additionally lets you import crew group information from the real-time session or the applied manual override or outage forecasting parameters from the real-time session into study mode.

Hiding the Crew Information Table

You can hide the Crew Information table by clicking the button in the upper left corner of the table next to the **Add Crew...** button.



The Storm Management window below has had the Crew Information table hidden.



Sorting the Crew Information Table

You can sort the Crew Information table in ascending or descending order according to any column in the table.

To sort the Crew Information table, click on the column heading of the column you want to sort by. The table sorts in ascending order of the selected column, and an up arrow appears on the column heading, indicating that the sort is ascending.

Click the same heading again to toggle to descending sort order. A down arrow appears, and the table re-sorts.

Applying Changes

A highlighted row in the Crew Information table indicates that there have been changes entered but not yet saved.

- Green highlighted rows are new rows that are added to the table.
- Cyan highlighted rows are rows that have been edited or updated.

A crew group may have been added, edited, moved or imported but the changes are not permanent until you do one of the following:

- Select the **Apply Crew Changes** option from the Crews menu,
- Click the **Apply Crew Changes** button above the Crew Information table, or
- Click the **Apply Crew Changes** button on the toolbar.

Once you save the changes, the corresponding rows in the Crew Information table are no longer highlighted. If at the time of the application there are rows in the Crew Information table that contain the same data in all of their columns (except the # Crews column), then those rows are combined. The numbers of crews for each row are added together and the sum appears in the # Crews column.

If you try to change the control zone view while there are unsaved changes in the Crew Information table, a dialog prompts you to do one of the following:

- The **Yes** button saves the changes in the Crew Information table and moves to the newly selected control zone.
- The **No** button discards the changes in the Crew Information table and moves to the newly selected control zone.
- The **Cancel** button closes the dialog without altering the changes in the Crew Information table or moving to the selected control zone.

Importing Crews

The crew information used by Storm Management is maintained separately from that in Oracle Utilities Network Management System Trouble Management. However, crew information defined in Oracle Utilities Network Management System Trouble Management can be imported into Storm Management with the Import Crews dialog.

To open the Import Crews dialog when in storm mode, do one of the following:

- Click the **Import Crews...** button above the Crew Information table,
- Click the **Import Crews...** button on the toolbar, or
- Select **Import Crews...** from the Crew menu.

Note: Changes made within Storm Management to the imported crews will not affect the data in Oracle Utilities Network Management System Trouble Management.

The Import Crews dialog serves two functions:

- In real-time mode, it lets you import crew information from Oracle Utilities Network Management System Trouble Management into the Crew Information table, based on specified filtering criteria.

- In study mode, it lets you import Oracle Utilities Network Management System Trouble Management crew information, as well as the manual override/outage forecasting parameters of the currently selected control zone and any crew information from real-time mode into study mode.

Import Crews Window

The Import Crews window contains the following fields and buttons:

- The **Current Zone** field displays the name of the currently selected control zone. This field is not editable.
- The **Reset** option, when checked, replaces all crews currently in the Crew Information table with the imported crews. When not checked, the imported crews are added to the existing data in the Crew Information table.
- The **Real Crews** option is checked by default. This option imports crew information from Oracle Utilities Network Management System Trouble Management. This option is only deselectable in study mode.
- The **Crew Groups** option, when checked, lets you import the crew groups from the real-time session. This option is only enabled in study mode.
- The **Parameters** option, when checked, lets you import the outage forecasting and manual overrides from real-time mode for the selected control zone. This option is only enabled in study mode.
- The **Zone** option, when checked, option imports only crews from the specified control zone. The button on the right opens the Control Zone Selection dialog. (In this dialog, click on the zone you want and click **OK**.)
- The **Company** option is only enabled when the Real Crews Import Criteria option is not selected. It imports only the crews with the Company specified in the drop-down list.
- The **Crew Type** option, when checked, imports only the crews whose type matches the crew type specified in the drop-down menu.
- The **Real Crew Status** option, when checked, imports the crews whose active status in Oracle Utilities Network Management System Trouble Management matches the status specified in the drop-down menu. This option is only enabled when the Real Crews Import Criteria is selected.
- The **Import** button imports the crew information and/or outage forecasting and manual override parameters as specified and closes the dialog. In the Crew Information table, the imported data is highlighted and crews with identical parameters are automatically combined into the same group. To confirm the changes and remove the highlighting, click on the **Apply Crew Changes** button.
- The **Cancel** button discards the import criteria options and closes the dialog without importing anything.

How to Import Crews

To import crews, complete these steps:

1. Make sure the currently selected control zone is operating in storm mode.
2. Do one of the following:
 - Click the **Import Crews...** button above the Crew Information table,
 - Click the **Import Crews...** button on the toolbar, or
 - Select **Import Crews...** from the Crew menu.
3. Select the import criteria and filters for the crews you want to import.

4. Click **Import**. If an imported crew is not an identical match to any existing crew group rows in the Crew Information table, then it's added to the table as a new row and highlighted in green. If an imported crew is an identical match to any existing crew group rows in the Crew Information table, then the number of crews in the existing crew group row is incremented and the row is highlighted in cyan.
5. To apply the changes, do one of the following:
 - Click the **Apply Crew Changes** button above the Crew Information table,
 - Click the **Apply Crew Changes** button on the toolbar, or
 - Select **Apply Crew Changes** from the Crew menu.

Example of Importing Crews

The highlighted rows in the Crew Information table below show the results of importing crews into real-time without using the Reset option. The Hours On and Hours Off values default to 8 and 16 respectively for any crew information imported from Oracle Utilities Network Management System Trouble Management.

- Green highlighted rows are new rows that are being added to the table.
- Cyan highlighted rows are crew groups that are having crews added to them. The # Crews column has been increased to reflect the new number of crews in the group.

Note: The End Date column is not populated because there is no corresponding value defined in Oracle Utilities Network Management System Trouble Management.

Adding Crew Groups

You can add new crew groups to Crew Information table using the Add Crew Group dialog. To open the Add Crew Group dialog, do one of the following:

- Click the **Add Crew...** button above the Crew Information table,
- Click the **Add Crew...** button on the toolbar, or
- Select **Add Crew...** option from the Crew menu when in storm mode.

The Add New Crew Group dialog contains the following fields and buttons:

- The **Zone** field is the control zone that the crew group is assigned to. The default value is the control zone that Storm Management is currently viewing. The button on the right opens the Control Zone Selection dialog. (In this dialog, click on the zone you want and click **OK**.)
- The **Company** drop-down menu is the name of the company that the crew group works for. This column is for informational purposes and does not affect the outcome of the estimate calculations.
- The **Crew Type** drop-down menu is the type of crew within the group. This indicates the type of work performed by the crews. The options here match the crew types defined in the Crew Makeup window of Oracle Utilities Network Management System Trouble Management.
- The **# Crews** field allows you to specify the number of crews that belong to the group.
- The **Start Date** field is the date and time at which each crew in the group is available for work. The button on the right opens a calendar dialog to select the date and time from.
- The **Avail Until** field is the date and time at which each crew in the group becomes unavailable for work. The button on the right opens a calendar dialog to select the date and time from.
- The **Hours On** field allows you to specify the length of the shift worked by each crew in the group, beginning at the Start Date.

- The **Hours Off** field allows you to specify the length of time between shifts worked by each crew in the group (i.e., the number of hours that the each crew in the group has off after completing each shift).
- The **OK** button confirms the details and schedule for the new crew group, inserts the information into the Crew Information table, and closes the dialog. You must save the new crews by clicking the **Apply Crew Changes** button or selecting the Apply Crew Changes option from the Crew menu.
- The **Cancel** button discards the details and schedule and closes the dialog without inserting any information.

When there is at least one crew in the table, you can display the pop-up menu by selecting and then right-clicking a row in the Crew Information table.

- The **Copy Crew** option copies the selected row in the Crew Information table.
- The **Paste Crew** option inserts the copied crew into the Crew Information table below the current line.
- The **Add Crew** option inserts a new row into the Crew Information table containing default values. Once the new row is added, you can change the values in each column.

Adding Crew Groups Using the Add Crew Group Window

To add crew groups to the Crew Information Table, complete these steps:

1. In storm mode, do one of the following:

- Click the **Add Crew...** button above the Crew Information table,
- Click the **Add Crew...** button on the toolbar, or
- Select **Add Crew...** from the Crew menu.

The Add Crew Group dialog opens.

2. To add the crew group to a different control zone, click the button on the right of the Zone field. A Control Zone Selection dialog opens. Select the zone you want and click **OK**.
- Select the Company and Crew Type from the drop-down menus.
 - To change the Start Date to something other than the current date and time, click the calendar button to the right of the Start Date field. Select the date and time you want and click the **OK** button.
 - Click the calendar button to the right of the End Date field. Select the date and time you want and click the **OK** button. The End Date may be left blank.
 - To change the Hours On and Hours Off values, select the text in the fields and type the value you want.
 - Click **OK** in the Add Crew Group dialog. If the newly defined crew group is not an identical match to any existing crew group rows in the Crew Information table, then it's added to the table as a new row and highlighted in green. If the newly defined crew group is an identical match to any existing crew group rows in the Crew Information table, then the number of crews in the existing crew group row is incremented and the row is highlighted in cyan. Either
 - Click the **Apply Crew Changes** button above the Crew Information table,
 - Click the **Apply Crew Changes** button on the toolbar, or
 - Select the Apply Crew Changes option from the Crew menu when in storm mode.

The Crew Group is saved in the Crew Information Table and its row is no longer highlighted.

Adding Crew Groups with the Right-Click Pop-Up Menu

You can also add crews directly in the Crew Information table by using the right-click pop-up menu. There must be at least one row in the Crew Information table. To do this, complete these steps:

1. Place your cursor in a row in the Crew Information table and right-click the mouse. The pop-up menu appears, with the Add Crew option enabled.
2. Select **Add Crew** from the pop-up menu. A new row appears in the Crew Information table with the default values, highlighted in green.

Editing Crew Groups

Once you have imported or added crew groups, you can modify the details of a crew group. Modify crew information using the Edit Crew Group dialog.

To open the Edit Crew Group dialog, select a row in the Crew Information table and then do one of the following:

- Click the **Edit Crew...** button above the table,
- Click the **Edit Crew...** button on the toolbar, or
- Select **Edit Crew...** from the Crew menu when in storm mode.

The Edit Crew Group dialog contains the same fields as the Add Crew Group dialog. The fields are populated with data from the selected row of the Crew Information table.

Editing Crew Groups with the Edit Crew Group Dialog

To edit a crew group using the Edit Crew Group dialog, complete these steps:

1. Select the row in the Crew Information table for the crew group you want to edit. Either:
 - Click the **Edit Crew...** button above the table,
 - Click the **Edit Crew...** button on the toolbar, or
 - Select the Edit Crew... option from the Crew menu when in storm mode.

The Edit Crew Group dialog opens.

2. Edit the fields you want to modify.
3. Click **OK**. The changes appear in the table with the modified row highlighted in cyan.
4. Save the changes by doing one of the following:
 - Click the **Apply Crew Changes** button above the Crew Information table,
 - Click the **Apply Crew Changes** button on the toolbar, or
 - Select **Apply Crew Changes** from the Crew menu.

Editing Crew Groups within the Crew Information Table

You can also edit crews directly in the Crew Information table. To do this, complete these steps:

1. Click the cell of the row that you want to edit. Depending on the type of data in the cell, one of the following occurs:
 - A cursor appears within the cell.
 - A calendar dialog opens for you to select a new date and/or time.
 - A Control Zone Selection dialog opens.
 - A drop-down list opens.
2. Make changes by either editing the value in the cell or selecting from the dialog or drop-down list. (In the Control Zone Selection dialog, click on the zone you want and click **OK**. In the

calendar dialog, select a new date and/or use the spinners to set a new time.). The edited row becomes highlighted in cyan.

3. Click the **Apply Crew Changes** button above the table or on the toolbar or select Apply Crew Changes from the Crew menu. The following occurs:
 - Your edits are saved.
 - The row is no longer highlighted.
 - The changes are used during the next scheduled simulation iteration.

Deleting Crew Groups

To delete a crew group from the Crew Information table, complete these steps:

1. Select the crew group in the Crew Information table.
2. Do one of the following:
 - Click the **Delete Crew...** button above the table,
 - Click the **Delete Crew...** button on the toolbar, or
 - Select the Delete Crew option from the Crews menu when in storm mode.

A message box opens, requesting confirmation that the selected crew group should be deleted.

3. Click **Yes** to confirm the delete. The crew group disappears from the Crew Information table.

Note: The **No** button cancels the delete.

Moving Crew Groups

Each crew group is assigned to a specific control zone when it is created. During your analysis, you may want to adjust your crew resource allocation by reassigning crews to different control zones. The Move Crew Group dialog enables you to move all or part of the crews within a selected crew group to different control zones.

To open the Move Crew Group dialog, select a crew group from the Crew Information Table and then do one of the following:

- Click the **Move Crew...** button above the Crew Information table,
- Click the **Move Crew...** button on the toolbar, or
- Select **Move Crew...** from the Crews menu when in storm mode.

Note: The **Move Crew...** button is only enabled when a crew group is selected in the Crew Information table.

Move Crew Group Window

The Move Crew Group window contains the following fields and buttons:

- The **Company** field displays the name of the company that the crew group works for. This field is not editable.
- The **Crew Type** field displays the type of crew within the group. This indicates the type of work performed by the crews. It matches the crew types defined in the Crew Makeup window of Oracle Utilities Network Management System Trouble Management. This field is not editable.
- The **From Zone** field displays the current control zone of the selected crew group. This field is not editable.

- The **To Zone** is the control zone that the specified number of crews is moving to. The button on the right opens the Control Zone Selection dialog. (In this dialog, click on the zone you want and click **OK**.)
- The **# Crews** field allows you to specify the number of crews within the selected crew group to move to the new control zone. If you enter a number greater than the number of existing crews, an error will occur when you click **OK**.
- The **OK** button confirms the details of the move and closes the dialog. If all of the crews in a group are being moved, the original crew group row now appears highlighted in cyan with the control zone modified. If only part of the crews is being moved from a crew group, the original group row is now highlighted in cyan with the number of crews decreased appropriately. A new crew group row appears highlighted in green with the number of specified crews to move and new control zone (all other fields in the row are the same as the original crew group).
- The **Cancel** button discards the details about the move and closes the dialog without saving any information.

Moving Crews to Another Control Zone

To move crews to another control zone, complete these steps:

1. Select a crew group row in the Crew Information Table.
2. Do one of the following:
 - Click the **Move Crew...** button above the Crew Information table,
 - Click the **Move Crew...** button on the toolbar, or
 - Select **Move Crew...** option from the Crews menu.

The Move Crew Group dialog opens.

3. Click the button on the right of the To Zone field. The Control Zone Selection dialog opens.
4. Select the control zone you want to move the crews to and click **OK**. The Control Zone Selection dialog closes, and the zone you selected populates the To Zone field.
5. If you only want to move part of the crews in the group, enter the number of crews you want to move in the # Crews field.
6. Click **OK**. The dialog closes.

If all of the crews in a group are being moved, the original crew group row now appears highlighted in cyan with the control zone modified.

If only part of the crews is being moved from a crew group, the original group row is now highlighted in cyan with the number of crews decreased appropriately. A new crew group row appears highlighted in green with the number of specified crews to move and new control zone (all other fields in the row are the same as the original crew group).

7. Click the **Apply Crew Changes** button above the table or on the toolbar or select Apply Crew Changes from the Crew menu. The following occurs:
 - The crew groups are moved to their assigned control zones.
 - The modified rows are no longer highlighted.
 - The updated information is used during the next scheduled simulation iteration.

Moving Entire Crew Groups Using the Table Edit Features

You can also move a crew group by clicking directly in the Zone field of the crew group row and changing the control zone. To move a crew group in this way, complete these steps:

1. Click in the Zone field for the crew group you want to move. The row becomes selected, and the Control Zone Selection dialog appears.

2. Select the zone you want to move the crew group to and click **OK**.
3. Click in a different field of the row. The Zone field updates to reflect the zone you just selected, and the row becomes highlighted in cyan.
4. Click the **Apply Crew Changes** button above the table or on the toolbar or select **Apply Crew Changes** from the Crew menu. The modified row moves to its new control zone and is no longer highlighted. The updated information is used during the next scheduled simulation iteration.

Moving Partial Crew Groups Using the Right-Click Pop-Up Menu

You can also move partial crew groups directly from the Crew Information table. To do this, complete these steps:

1. Select a crew group row in the Crew Information Table.
2. Copy a selected crew group using the right-click Copy Crew option.
3. Paste it as a new row in the table using the right-click Paste Crew option.
4. Edit the Zone cell in the new row by clicking on it, selecting the new control zone and clicking **OK**.
5. Edit the # Crews cell in the original row.
6. Edit the # Crews cell in the new row.
7. Click the **Apply Crew Changes** button above the table or on the toolbar, or select Apply Crew Changes from the Crew menu. The following occurs:
 - The new row moves to its assigned control zone.
 - The modified rows are no longer highlighted.
 - The updated information is used during the next scheduled simulation iteration.

Exiting Storm Mode

To exit storm mode for a selected control zone, do one of the following:

- Select the Toggle Storm Mode option from the System menu, or
- Click the **Toggle Storm Mode** button on the toolbar.

These options are only available if the currently selected control zone is operating in real-time mode and storm mode.

Define Storm Dialog

Once you press the Toggle Storm Mode, the Define Storm dialog opens, prompting you for the End Date of the storm in this zone.

The Define Storm dialog displays the following fields:

- The **Zone** field displays the name of the currently selected zone. This control zone and all of its children that aren't already in non-storm mode will be placed into non-storm mode, ending the storm in this zone(s). This field is not editable.
- The **Storm Date** defaults to the current date and is used in conjunction with the Storm Name as the unique identifier of the storm. This field is not editable.
- The **Storm Name** field displays the name of the storm. This value is used in conjunction with the Storm Date as the unique identifier of the storm. This field is not editable.
- The **Special Condition** field displays a storm type that indicates a pre-defined condition existing with the storm. This condition may also dictate a different set of historical average values be used in the estimate calculations made by the system. This field is not editable.

- The **Storm Level** field displays the severity level for the storm. This value is recorded for information and reporting purposes only and has no effect on the estimate calculations. This field is not editable.
- The **Start Date** field displays the date time at which the storm started in this zone. This field is not editable.
- The **End Date** field contains the date and time at which the storm ended in this zone. When you uncheck the “Use current time” option, the button on the right of this field opens a calendar that lets you select the date and time. Valid dates and times are those prior to (and including) the current time. If your entry is invalid, an error message appears. Click **OK** to close the message and correct the error.
- The **Use Current Time** checkbox is selected by default. This option allows you to leave the End Date field blank and have the current system time on the server be used as the End Date of the storm in this zone. Deselecting this option enables the calendar button to the right of the End Date field.

Setting the Storm End Date

To set the storm’s end date, complete these steps:

1. Select a date and time for the storm’s end date. Either:
 - Leave the Use Current Time option checked.
 - Uncheck the Use Current Time option. Click on the End Date calendar button and select a date and time for the storm’s end date. Click **OK**. The calendar closes, and the selected date and time populate the End Date field. Valid dates are those between the start date and time of the storm and the current date and time.
2. Click the **OK** button on the Define Storm dialog.
 - Storm Management returns to non-storm mode for the selected control zone.
 - If the control zone had any child zones in the same storm, the child zones are also returned to non-storm mode.

Note: The **Cancel** button discards the End Date without saving it. The Define Storm dialog closes and the currently selected control zone stays in storm mode.

Study Mode

Study mode enables you to manipulate parameters that affect the estimate calculations, such as outage forecasting, manual overrides and crew information, without altering the current real-time calculations. The Storm Management window appears below in study mode.

This section includes the following topics:

- **Entering Study Mode**
- **Calculating Crew Resources**
- **Importing Crews and Parameters**
- **Exporting Crews and Parameters**
- **Calculating Estimates in Study Mode**
- **Exiting Study Mode**

Entering Study Mode

To toggle between study mode and storm mode, do one of the following:

- Select **Toggle Study Mode** from the Storm menu, or

- Click the **Toggle Study Mode** button on the toolbar.

You can only enter study mode from a control zone that is currently in storm mode.

The first time you enter a study session, several portions of the Storm Management window are not populated as they were in the real-time session:

- The Summary Information table's Est Assessed By and Est Restored By columns are empty.
- The Storm Report table's Total Time to Assess and Total Time to Restore columns display zeros.
- The Storm Report table's Estimated Assessed By and Estimated Restored By columns are empty.
- Outage forecasting parameters that existed in the real-time session are not applied.
- Manual overrides that existed in the real-time session are not applied.
- The Crew Information table is empty.
- The Last Update field of the status bar does not contain a time.

Once you create a study session, it remains active throughout the storm. You may find a need to toggle between study and real-time modes repeatedly during a storm. Each time you re-enter study mode, Storm Management loads the saved data saved from the most recent visit to the study session.

The status bar at the bottom of the Storm Management window identifies the current operating modes, as shown below for study, storm mode.

When in study mode, the window's refresh interval is disabled, and estimate calculations using the data in the study mode session must be triggered manually. However, the system does continue to make real-time estimate calculations for all control zones.

Calculating Crew Resources

In storm mode, Storm Management can calculate the approximate number of crews that the system requires to complete assessment and restoration in the currently selected control zone by a specified date. You can enter variables used in the calculation and see the results in the Calculate Crews dialog.

To open the Calculate Crews dialog, do one of the following:

- Select **Calculate Crews** from the Storm menu when in storm mode, or
- Click the **Calculate Crews...** button on the toolbar.

The Calculate Crews dialog displays the following fields and buttons:

- The Assessment **Desired Date** field contains the assessment completion time you want to achieve. The button on the right of this field opens a calendar that enables you to select a date and time. You must select a date and time later than the current time. The value you enter (and the system uses) displays in the upper left corner above the Used Crews table after the results are calculated. You may leave this field blank if you wish to Calculate Crews for Repair only.
- The Assessment **Work Efficiency (%)** field contains the efficiency of the assessment crews as a percentage. This value affects the amount of work to be completed and is applied along with performance factor values associated with the crew type. You must specify the assessment work efficiency as a percentage between 1 and 100. The value you enter (and the system uses) displays to the right of the Estimated Assessed By date above the Used Crews table after the results are calculated.
- The Repair **Desired Date** field contains the repair completion time you want to achieve. The button on the right of this field opens a calendar that enables you to select a date and time. You must select a date and time later than the current time. The value you enter (and the

system uses) displays to the left of the Repair Eff percentage above the Used Crews table after the results are calculated. You may leave this field blank if you wish to Calculate Crews for Assessment only.

- The Repair **Work Efficiency (%)** field contains the efficiency of the repair crews as a percentage. This value affects the amount of work to be completed and is applied along with performance factor values associated with the crew type. You must specify the assessment work efficiency as a percentage between 1 and 100. The value you enter (and the system uses) displays above the right corner of the Used Crews table after the results are calculated.
- The **Hours** field contains the number of hours that equal one crew unit. The results are returned in crew units rounded to the next whole integer. The value entered and used by the calculation displays above the Unused Crews table.
- The **Calculate Crews** button calculates the number of crews based on the specified data. It populates the Used Crews and Unused Crews panels with the results.
- The **Reset** button resets the entries in the Assessment Desired Date and Work Efficiency, the Repair Desired Date and Work Efficiency, and the Crew Unit Hours fields back to their default values.
- The **Print...** button brings up the Print Preview dialog, which allows you to print out the contents of the Calculate Crews dialog.
- The **Cancel** button closes the dialog.
- The **Outage Types** column contains the name of the Storm Management outage type category.
- The **Assessment Units Existing** column contains the number of existing assessment crews units that can assess each outage type by the specified date.
- The **Assessment Units Needed** column contains the number of additional assessment crew units needed to assess each outage type by the specified date.
- The **Assessment Units Total** column contains the total number of assessment crew units needed to assess each outage type by the specified date.
- The **Repair Units Existing** column contains the number of existing repair crews units that can repair each outage type by the specified date.
- The **Repair Units Needed** column contains the number of additional repair crew units needed to repair each outage type by the specified date.
- The **Repair Units Total** column contains the total number of repair crew units needed to repair each outage type by the specified date.
- The **Crew Type** column indicates the type of work performed by the crews. It matches the crew types defined in the Crew Makeup window of Oracle Utilities Network Management System.
- The **Unused Units** column contains the number excess crew units for each crew type that are found to exist by the calculation.

Calculating Crews Needed to Assess and Restore Outages by a Given Time

To calculate the number of crew units needed to assess and repair all events in the currently selected control zone by a specific time, complete these steps:

1. From a control zone in storm mode, do one of the following:
 - Select **Calculate Crews** option from the Storm menu, or
 - Click the **Calculate Crews...** button on the toolbar.
2. Click on the Assessment Desired Date calendar button.

3. From the calendar dialog, select the date and time you want all assessment completed by and click **OK**.
4. Select the percentage in the Assessment Work Efficiency (%) field and type the percentage you want to use.
5. Click the **Repair Desired Date** calendar button.
6. From the calendar dialog, select the date and time you want all repair completed by and click **OK**.
7. Select the percentage in the Repair Work Efficiency (%) field and type the percentage you want to use.
8. Click the **Calculate Crews** button. Storm Management estimates the number of crew units needed and unused and displays the results in the Used Crews and Unused Crews tables.

Printing Calculate Crews Results

To print the contents of the Calculate Crews dialog, complete these steps:

1. Do one of the following:
 - Click the **Calculate Crews** button on the toolbar, or
 - Select **Calculate Crews...** option from the System menu. The Calculate Crews dialog opens.
2. Click the **Print...** button. The Print Preview dialog opens.
3. Adjust the scale, orientation, and page setup as desired.
4. Click the **Print** button to print the page(s). The Print Preview dialog disappears and the print output appears at your selected printer.

Importing Crews and Parameters

In study mode, the Import Crews dialog has additional options not available in real-time mode. It enables you to import Oracle Utilities Network Management System Trouble Management crew information, as well as the manual override/outage forecasting parameters of the currently selected control zone and any crew information from real-time mode into study mode.

Importing Real-Time Crews and Parameters into the Study Session

To open the Import Crews dialog, do one of the following:

1. Click the **Import Crews...** button above the Crew Information table,



2. Click the **Import Crews...** button on the toolbar, or
3. Select **Import Crews...** from the Crew menu.

The following fields are only activated in study mode:

- The **Crew Groups** option, when checked, enables you to import the crew groups from the real-time session.
- The **Parameters** option, when checked, option enables you to import the outage forecasting and manual overrides from real-time mode for the selected control zone.
- The **Company** option is only enabled when the Real Crews Import Criteria option is not selected. It imports only the crews with the Company specified in the drop-down menu.

Once you click the **Import** button, Storm Management Crew Information panel looks and behaves as it does in real-time mode.

The window below shows how the Crew Information table would look if real-time crew groups are imported with no filters. All of the real-time crews are imported.

Importing Real-Time Session Information into the Study Session

To import crews, complete these steps:

1. Make sure the currently selected control zone is operating in study mode.
2. Do one of the following:
 - Click the **Import Crews...** button above the Crew Information table,
 - Click the **Import Crews...** button on the toolbar, or
 - Select **Import Crews...** from the Crew menu.
3. Uncheck the Real Crews option under the Import Criteria section.
4. Check the Crew Groups option under the Import Criteria section.
5. Check the Parameters option under the Import Criteria section.
6. Click **Import**. The following occurs:
 - Any outage forecasting and manual override parameters that exist for this control zone in the real-time session are applied to the Storm Report table, but not yet saved.
 - The Save Changes button in the toolbar becomes sensitized.
 - The Crew Information table is now populated with the crew groups that exist for this control zone in the real-time session. If an imported crew is not an identical match to any existing crew group rows in the Crew Information table, then it's added to the table as a new row and highlighted in green. If an imported crew is an identical match to any existing crew group rows in the Crew Information table, then the number of crews in the existing crew group row is incremented and the row is highlighted in cyan.
7. Apply the outage forecasting and manual override changes by either:
 - Clicking the **Save Changes** button on the toolbar, or
 - Selecting Save Changes from the System menu.
8. Apply the Crew Info table changes by doing one of the following:
 - Click the **Apply Crew Changes** button above the Crew Information table,
 - Click the **Apply Crew Changes** button on the toolbar, or
 - Select **Apply Crew Changes** from the Crew menu.

The Crew Information table updates to display only those crews belonging to the currently selected control zone. The crew groups that are removed from the current view are saved in the study session for their appropriate control zones. You can view them by selecting their control zone from the Zone Selection tree.

Resetting the Current Study Session to Match the Real-Time Session

In the course of working with the study session, the user may want to start over by resetting the state of the study session to the current state of the real-time session.

1. To reset the study session, do one of the following:
 - Click the **Reset Study Session** button on the toolbar, or
 - Select **Reset Study Session** from the Storm menu.

The Reset Study Session confirmation dialog will appear.

2. Click the **Yes** button on the confirmation dialog to proceed. The confirmation dialog closes. The Crew Information table updates with the crews defined in the real-time session. Special Condition, Forecast mode and override information in the Storm Report table are also updated to match the real-time session.

Note: This operation affects all control zones, not just the currently selected zone.

Exporting Crews and Parameters

Once the user is satisfied with the simulation parameters in study mode, the parameters can be exported back into the real-time session.

To export the study session parameters, complete these steps:

1. Do one of the following:
 - Click the **Export Study Session** button on the toolbar, or
 - Select **Export Study Session** from the Storm menu.

The Export Study Session confirmation dialog appears.

2. Click the **Yes** button on the confirmation dialog to proceed. The confirmation dialog closes. The contents of the Crew Information as well as Special Condition, Forecast mode and override information in the Storm Report table are copied into the real-time session.

Note: This operation affects all control zones in the real-time session, not just the currently selected zone.

Calculating Estimates in Study Mode

Because estimate calculations using the data in the study mode session must be triggered manually, you must use the **Force Simulation Run** button to calculate the results.

Note: While you are working in study mode, Storm Management continues to calculate restoration times for control zones operating in real-time.

To calculate estimates in study mode, do one of the following:

- Select **Force Simulation Run** option from the System menu, or
- Click the **Force Simulation Run** button on the toolbar.

The Summary Information table and Storm Report table update to display the estimates. The status bar indicates the time at which the forced simulation was last executed in the study session.

Note: Each time you make changes in the Storm Management window in study mode, you must press the **Force Simulation Run** button in order to view the results of the changes. Because every time you press the **Force Simulation Run** button causes Storm Management to completely re-analyze and calculate estimates for all events in the system, forcing a simulation could slow down system performance at times. It is recommended you keep forced simulations at a minimum.

When Storm Management completes a forced simulation in real-time mode, a confirmation message is displayed.

Note: Once you've found the optimal settings in your study session, you must manually re-enter them into real-time mode to apply them to the storm.

Exiting Study Mode

To exit study mode, do one of the following:

- Click the **Toggle Study Mode** button on the toolbar, or
- Select **Toggle Study Mode** from the Storm menu.

If there are unsaved changes, a dialog opens prompting you for options to save the changes.

Note: You must exit study mode before you can exit storm mode.

Additional Storm Management User Types

Storm Management provides two additional user types: View Only and Administration. The View Only type is available for users who need to see the data without making changes to it. The Administration user type provides authorized users with the capability to view and edit storm-related data.

This section includes the following topics:

- **View Only**
- **Administration**

View Only

Some users do not have a need to manipulate the various parameters on the Storm Management window, but rather need to monitor and analyze the information that's presented. The View Only version of the Storm Management window is available for this type of user.

Open the View Only Storm Management window by clicking the Storm Management icon found under the appropriate program group in your Windows Start Menu, or by double clicking the Storm Management icon on your desktop (depending upon how it was installed). The Storm Management Login window will appear.

Login with a User Type of "View Only" to proceed to the View Only window.

View Only Menus

There are three menus on the View Only Storm Management menu bar: System, Storm, and Help.

View Only System Menu

The options in the System menu are available in storm and non-storm modes.

The following table describes the System Menu options.

Option	Description
Retrieve Update	Refreshes the window with the most recent information from the system.
Print All...	Opens the Print Preview dialog, which allows you to print out the Summary Information panel, Storm Report panel, Storm Information panel (if present), Crew Information panel (if present), and status bar information from the current Storm Management window.
Print Crews...	Opens the Print Preview dialog, which allows you to print out the Crew Information panel from the current Storm Management window. This option is only available in storm mode.
Exit	Closes the View Only Storm Management window.

View Only Storm Menu

The option in the Storm menu is only enabled when Storm Management is in storm mode for the selected control zone.

The following table describes the Storm Menu options.

Option	Description
Calculate Crews...	Opens the Calculate Crews dialog, which is used to determine the approximate number of crews needed to complete assessment and repair by a specified date and time.

View Only Help Menu

The option in the Help menu is available at all times.

The About Storm Management option on the Help Menu opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Web Gateway that the application is using.

View Only Toolbar

The Storm Management toolbar provides a shortcut to many of the options available from the Storm Management menus. The toolbar appears below the menu bar by default. You can also dock it on the left side, right side, or bottom of the window or in its own window.

The View Only Storm Management toolbar displays the following buttons.

- The **Retrieve Update** button refreshes the window with the most recent information from the system. In most cases, the window refreshes itself on a periodic basis. But, if there are unsaved changes in the Storm Management window at the time the automatic refresh is due to occur, the window will not refresh. Instead, an alert appears in the status bar indicating that an update is available, and the Retrieve Update option must be invoked in order to refresh the window with the new update. This allows you to continue on with your changes and save them first before refreshing.
- The **Calculate Crews** button opens the Calculate Crews dialog box, which is used to determine the approximate number of crews needed to complete assessment and repair by a specified date. This option is only available in storm mode.

Administration

Upon completion of a storm (i.e., all of the control zones belonging to the storm have been transitioned back to the non-storm mode of operation), authorized users can change completed storm data with Storm Management's Administration window. Users can view completed storm records and make changes to the control zone, storm type, storm level, and beginning and ending dates of the storm.

You can open the Administration window by clicking the Storm Management icon found under the appropriate program group in your Windows Start Menu, or by double clicking the Storm Management icon on your desktop (depending upon how it was installed). The Storm Management Login window will appear.

Login with a User Type of "Storm Administration" to proceed to the Administration window.

Administration Menus

There are two menus on the Storm Administration menu bar:

- **Administration System Menu**
- **Administration Help Menu**

Administration System Menu

The options in the System menu are available at all times. The following table describes the System Menu options.

Option	Description
Revert Changes	Reloads the most recently saved records from the database.
Save	Saves any changes made to the table.

Print...	Opens the Print Preview dialog, which allows you to print out the contents of the Storm Administration table.
Exit	Closes the Storm Administration window.

Administration Help Menu

The option in the Help menu is available at all times. The About Storm Management option Opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Web Gateway that the application is using.

If you try to exit the window while there are unsaved changes in the table, a dialog prompts you to save changes. Click **Yes** to save the changes in the table and exits the window. Click **No** to discard the changes in the table and exits the window. The **Cancel** button closes the dialog without altering the changes in the table or exiting the window.

Administration Toolbar

The Storm Management toolbar provides a shortcut to many of the options available from the Storm Management menus. The toolbar appears below the menu bar by default. You can also dock it on the left side, right side, or bottom of the window or in its own window.

The following table describes the buttons on the Storm Administration Toolbar.

Button	Description
 Revert Changes	Reloads the most recently saved records from the database.
 Save	Saves any changes made to the table.
 Print Preview	Opens the Print Preview dialog, which allows you to print out the contents of the Storm Administration table.

Storm Administration Table

The Storm Administration table displays the following fields and buttons:

- The **Storm Date** column contains the date when storm mode was entered, as defined in the Define Storm dialog. This value is used along with the Storm Name as the unique identifier of the storm. This field is not editable.
- The **Storm Name** column contains the name of the storm as defined in the Define Storm dialog. This value is used along with the Storm Date as the unique identifier of the storm. This field is not editable.
- The **Zone** column contains the name of the control zone affected by this storm. Unless explicitly defined elsewhere in the table, all of the children of the control zone are considered part of this storm as well.
- The **Special Condition** column contains the storm type indicating a pre-defined condition of the storm, as defined in the Define Storm dialog.
- The **Start Date** column contains the date and time when the storm began in the zone, as defined in the Define Storm dialog.

- The **End Date** column contains the date and time when the storm ended in the zone, as defined in the Define Storm dialog.
- The **Storm Level** column indicates the severity of the storm, as defined in the Define Storm dialog.

Printing The Storm Administration Table

To print the contents of the Storm Administration table, complete these steps:

1. Do one of the following:
 - Click the **Print Preview** button on the toolbar, or
 - Select **Print...** option from the System menu. The Print Preview dialog opens.
2. Adjust the scale, orientation, and page setup as desired.
3. Click the **Print** button to print the page(s). The Print Preview dialog disappears and the print output appears at your selected printer.

Editing Storm Records

The Storm Administration window has many of the same editing capabilities as Storm Management's Crew Information table. The behavior of the editable field depends on the type of data in the field. When you select a row and click the right mouse button, a pop-up menu opens. The options in the menu enable you to cut, copy, paste, and delete rows in the table.

Pop-up menu options are described below:

- The **Cut Row** option removes the selected row from the table. You can paste the removed row back into the table with the Paste option. The row stays available for pasting until a new row is copied or cut from the table.
- The **Copy Row** option copies the selected row, enabling you to paste it into the table with the Paste option. The selected row that was copied remains in the table.
- The **Paste Row** option inserts the copied or cut row into the table.
- The **Delete Row** option removes the selected row from the table. The removed row cannot be pasted back into the table. To undo a deletion, you must select the Revert Changes option from the System menu to restore the table to its last saved state.

Example

The steps below show an example of how you can add new data to the Storm Administration window:

1. Select the row in the table that pertains to the storm whose data you want to change.
2. Copy the row and paste it in the table using the right-click menu.
3. Click in the Zone, Start Date, or End Date column. A cursor appears and you can enter new data.
4. Click in the Special Condition or Storm Level column. A drop-down menu appears with a list of eligible choices for you to select from.
5. Click the **Save** button to keep the changes. Storm Management validates the entries. If any of the following conditions is true, an error dialog appears and changes are not saved:
 - A storm has multiple entries for the same control zone.
 - An invalid Start Date or End Date is entered (i.e. Start Date is later than End Date or End Date is earlier than Start Date).
 - A storm has both an entry for a parent control zone and child control zone where the parent zone's Start Date is earlier than the child zone's Start Date. (Having both a parent

and child control zone entry for the same storm with different Start Dates would indicate that the child zone was placed into storm mode within Storm Management first, and then later the parent zone was placed into storm mode within Storm Management. The parent zone entry would have to be removed and replaced with entries for each child zone if it's desired to record that one of the children had a later Start Date than the rest of the zones within that parent.).

- A storm has both an entry for a parent control zone and child control zone where the parent zone's End Date is earlier than the child zone's End Date. (Having both a parent and child control zone entry with different End Dates for the same storm would indicate that the child zone was placed back into non-storm mode within Storm Management first, and then later the parent zone was placed into non-storm mode within Storm Management. The parent zone entry would have to be removed and replaced with entries for each child zone if it's desired to record that one of the children had a later End Date than the rest of the zones within that parent.).

Understanding Storm Management Calculations

Storm Management enables you to analyze restoration times during high volume outage periods, such as those that occur during and following ice storms, lightning storms, hurricanes, and other widespread disturbances. It can provide estimated assessment and restoration times for every outage in the system. It calculates estimates by periodically simulating the entire restoration process, taking into account the dynamically changing outage predictions and crew resource allocation. These restoration estimates can be used to manage workloads and prioritize crew assignments.

This section provides a detailed explanation of the algorithms and data Storm Management uses to create estimates. It includes the following topics:

- **How Storm Management Works**
- **Non-Storm Mode Algorithm**
- **Storm Mode Algorithm**

How Storm Management Works

Storm Management has two basic modes of operation – non-storm and storm mode. The estimate calculation algorithm for each mode is fundamentally the same. For example, both modes use historical averages and simulated restoration calculation/analysis of all unrestored events in the system for the estimate calculation algorithm. However, non-storm mode does not attempt to make crew backlog calculations, making its analysis much simpler.

Historical Averages

The estimate calculation algorithm uses the following historical average minutes data that applies to the different parts of the restoration process:

- **Average travel time for an assessment crew:** how long it takes a crew that is going out to assess the event to arrive onsite, once en route.
- **Average assessment time:** how long it takes a crew to assess the event, once onsite.
- **Average travel time for a repair crew:** how long it takes a crew that is going out to repair the event to arrive onsite, once en route.
- **Average repair time:** how long it takes a crew to repair/restore the event, once onsite.
- **Average cleanup time:** how long it takes before a crew is ready to move on to their next assignment, once the repair/restoration is complete.

The historical average minutes can be broken down by various factors for further granularity of data:

- **Control zone.** The area the event is in (e.g. urban vs. rural) may have an affect on how long it takes crews to arrive, and thus you may use different travel times for different control zones.

Note: One of the top three levels in the control zone hierarchy is designated as the control zone level at which the historical average minutes data is associated. This control zone level is herein referred to as the *simulation level*. For example, if the second level in the control zone hierarchy – the Region level – was the designated simulation level, that would imply that each region would have its own, possibly unique, set of historical average minutes.

- **Outage type.** The type of outage (e.g. service outages vs. breaker lockouts) dictates how long it's going to take for repair/restoration, and thus you may use different repair/restore times for different types of outages.

- Shift. The time of day (e.g. afternoon rush hour vs. middle of the night) may have an affect on how long it takes crews to arrive, and/or perform the assessment or repair/restoration, and thus you may use different travel, assessment, and repair/restore times for different shifts.
- Day type. The type of day (weekday vs. weekend vs. holiday) may have an affect on how long it takes crews to arrive, and thus you may use different travel times for different day types.
- Season. The time of year (e.g. winter vs. summer) may have an affect on how long it takes crews to arrive, and/or perform the assessment or repair/restoration, and thus you may use different travel, assessment, and repair/restore times for seasons.
- Storm type. Particular weather conditions (e.g. ice) may have an affect on how long it takes crews to arrive, and/or perform the assessment or repair/restoration, and thus you may use different travel, assessment, and repair/restore times for different types of storms.

Simulation

To generate estimates, the trouble analysis engine periodically goes through a simulated restoration calculation/analysis of all unrestored events in the system. Any events eligible to be assigned an estimated assessment and restoration time by Storm Management (i.e., the events are of a type that Storm Management is configured to recognize, and they have not been given a manually-entered estimated restoration time from a crew/dispatcher) are sorted in priority order (part of the Storm Management configuration). Then, starting at the top of that list, the simulation begins. The event at the top of the list is examined. The mode of operation that the control zone in which the event resides is checked in order to determine which version of the algorithm is being applied to calculate the Estimated Restoration Time (ERT). The appropriate set of historical average minutes for the event is looked up, using the various characteristics such as control zone, outage type, storm type, and when the assessment and repair/restoration is projected to begin. Those historical averages are then used by the calculation of the appropriate algorithm to generate an estimated assessment time and estimated restoration time for the event.

Once an event has been given its estimates by the Storm Management simulation, it's removed from that priority-sorted list, and then the next event on the list is analyzed the same way, and the process continues on until the last event on the list is removed. When the next simulation period occurs, the process starts all over again. And when it does, the previously calculated estimates for many events may change, due to factors such as some previously unrestored events now being restored, new events of varying priority appearing, crews arriving onsite at various events, some events being given manually-entered estimated restoration times, no crew yet arriving onsite, or to various parameters on the Storm Management window being modified since the last iteration.

Storm Management Window

Because the engine that generates the estimated assessment and restoration times for each event is a separate process, you do not need to have a Storm Management window open in order for the estimates to be calculated. The main purpose of the Storm Management window is to enable you to monitor and analyze the estimates from overall control zone perspective, and to manipulate several of the parameters that are used to generate the estimates.

Given that it's not required to have a Storm Management window open to generate the estimates, after each periodic calculation of the estimates, the results are not pushed out to the Storm Management windows by the engine. Instead, each Storm Management window that's open has its own timer that it uses to periodically retrieve the latest information from the engine automatically.

Non-Storm Mode Algorithm

For an event that resides in a control zone that is operating under non-storm mode, the calculation of its estimated assessment and estimated restoration times is as follows:

- Look up the historical average values that pertain to an event with its characteristics.
- Verify whether or not an assessment has already been made for the event (if JOBS.ACT_ASSESS_TIME is non-null).

If assessment has been made:

- The repair time assessment provided (JOBS.EST_REPAIR_MINUTES) will be used in the calculation rather than the historical Repair average.
- Verify whether or not a crew is currently onsite for this event.
- If a crew is onsite:
 - Check the crew type to verify whether or not this type of crew is one that can repair this event.
 - If crew can repair:
 - It is assumed that the crew that's onsite is there to perform the repair. The historical Travel to Repair average will not be used in the calculation. The actual repair time assessment (JOBS.EST_REPAIR_MINUTES) is added to the time at which the crew arrived onsite to generate the estimated restoration time (ERT) for the event.
 - If crew cannot repair:
 - It is assumed that the onsite crew is there to perform the assessment, and another crew must be sent out to perform the repair. The historical Travel to Repair average and the actual repair time assessment are added to the time at which the repair time assessment was provided (JOBS.ACT_ASSESS_TIME) to generate the estimated restoration time (ERT) for the event.
- If a crew is not onsite:
 - The historical Travel to Repair average and the actual repair time assessment are added to the time at which the repair time assessment was provided (JOBS.ACT_ASSESS_TIME) to generate the estimated restoration time (ERT) for the event.

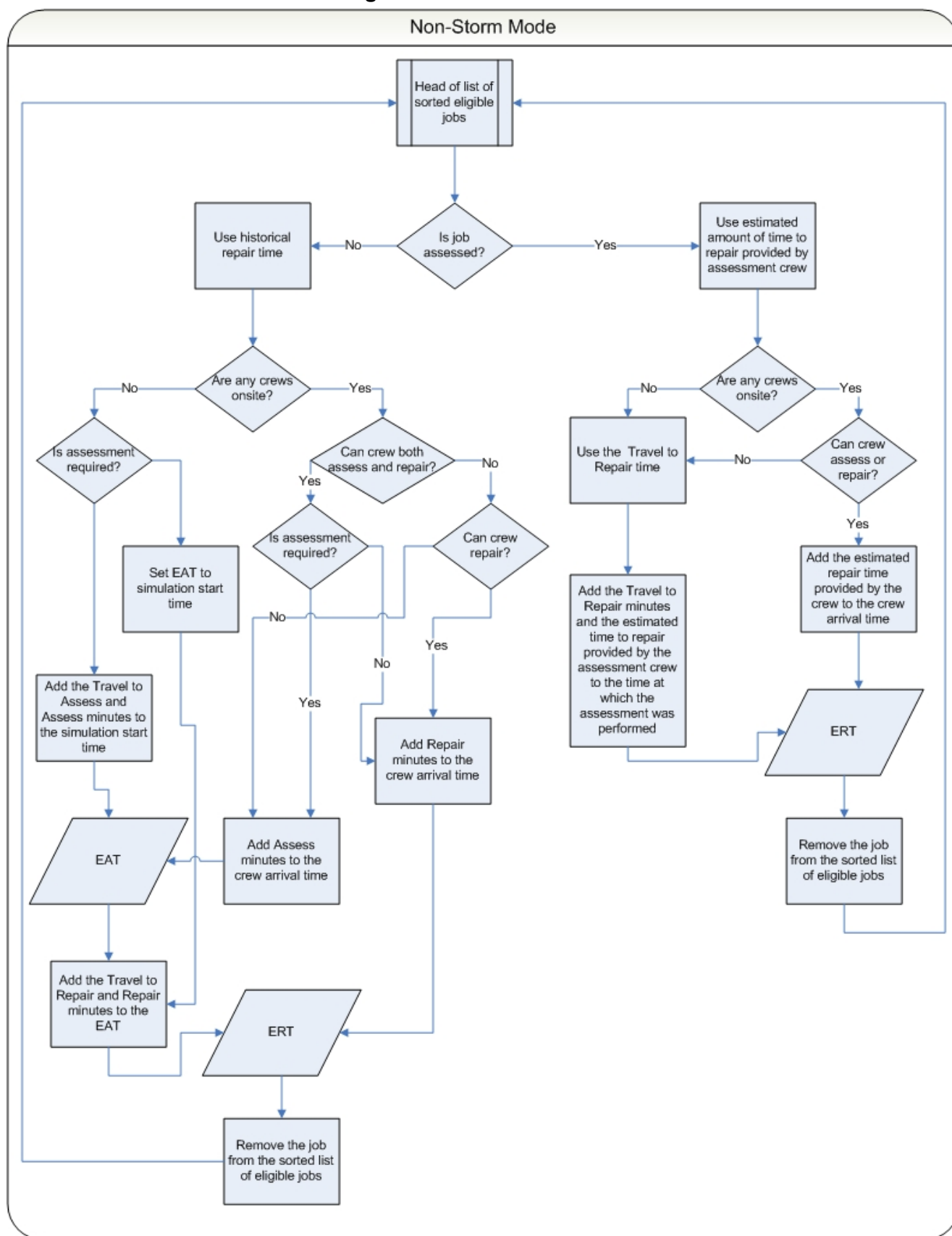
If no assessment has yet been made:

- Verify whether or not a crew is currently onsite for this event.
- If a crew is onsite:
 - Check the crew type to verify whether or not this type of crew is one that can both assess and repair this event.
 - If the crew type cannot perform both tasks:
 - Verify if the crew type can repair this event.
 - If crew can repair:
 - It is assumed that the crew that's onsite is there to perform the repair. The historical Travel to Repair average will not be used in the calculation. The historical Repair average is added to the time at which the crew arrived onsite to generate the estimated restoration time (ERT) for the event.
 - If crew cannot repair:
 - It is assumed that the crew that's onsite is there to perform the assessment. The historical Assess average is added to the time at which the crew arrived onsite to generate the estimated Assessment time (EAT). The historical Travel to

Repair and historical Repair averages are added to the estimated Assessment time to generate the estimated restoration time (ERT) for the event.

- If crew type can perform both tasks:
 - Verify whether or not assessment is required for this event (if Travel to Assess and Assess averages are both 0, assessment is not required).
 - If assessment is not required:
 - It is assumed that the crew that's onsite is there to perform the repair. The historical Travel to Repair average will not be used in the calculation. The historical Repair average is added to the time at which the crew arrived onsite to generate the estimated restoration time (ERT) for the event.
 - If assessment is required:
 - It is assumed that the crew that's onsite is there to perform the assessment. The historical Assess average is added to the time at which the crew arrived onsite to generate the estimated assessment time (EAT). The historical Travel to Repair and historical Repair averages are added to the estimated assessment time to generate the estimated restoration time (ERT) for the event.
- If a crew is not onsite:
 - Verify whether or not assessment is required for this event (if Travel to Assess and Assess averages are both 0, assessment is not required).
 - If assessment is not required:
 - No estimated assessment time (EAT) needs to be calculated. This historical Travel to Repair and historical Repair averages are added to the simulation start time to generate the estimated restoration time (ERT) for the event.
 - If assessment is required:
 - The historical Travel to Assess and historical Assess averages are added to the simulation start time to generate the estimated assessment time (EAT) for the event. The historical Travel to Repair and historical Repair averages are added to the estimated assessment time to generate the estimated restoration time (ERT) for the event.

Non-Storm Mode Algorithm Flow Chart



In summary, for an event that's in a control zone operating under non-storm mode:

- **Estimated assessment time** =
- the time at which the simulation iteration started +
- the historical average number of minutes it takes an assessment crew to arrive onsite +
- the historical average number of minutes it takes a crew to perform assessment once onsite

- **Estimated restoration time** =
- the estimated assessment time +
- the historical average number of minutes it takes a repair crew to arrive onsite +
- the historical average number of minutes it takes a crew to repair once onsite

Exceptions:

If a crew that can perform assessment is already onsite:

Estimated assessment time =

The time at which the assessment crew arrived onsite +

the historical average number of minutes it takes a crew to perform assessment once onsite

If an event has an actual assessment provided and no repair crew is yet onsite:

Estimated restoration time =

The time at which the actual assessment was provided +

the historical average number of minutes it takes a repair crew to arrive onsite +

the actual number of minutes it will take to repair, per the assessment

If an event has an actual assessment provided and a repair crew is already onsite:

Estimated restoration time =

The time at which the repair crew arrived onsite +

the actual number of minutes it will take to repair, per the assessment =

If an event does not require assessment and no repair crew is yet onsite:

Estimated restoration time =

The time at which the simulation iteration started +

the historical average number of minutes it takes a repair crew to arrive onsite +

the historical average number of minutes it takes a crew to repair once onsite

Note: When the historical averages are applied to the calculation, the average that applies to the conditions at the time the particular step is projected to begin is used, not the average that applies to the conditions at the time the simulation iteration began. For example, Shift A has a particular average value for repair, and Shift B has a different average value for repair. The simulation iteration start time is in Shift A, but the calculated estimated assessment time falls in Shift B. When calculating the estimated restoration time, the historical average value for repair that pertains to Shift B will be used, not that of Shift A, because the repair isn't projected to begin until sometime during Shift B.

Storm Mode Algorithm

The algorithm for estimate calculation in storm mode is similar to that of non-storm mode, except that in storm mode the data entered into the Crew Information table on the Storm Management window is taken into consideration and used as the known crew resource allocation. At the start of each simulation, the algorithm assembles a crew availability list from the Crew Information table and uses that to keep track of when the next available crews are projected to be ready as the calculation progresses.

For an event that resides in a control zone that is operating under storm mode, the calculation of its estimated assessment and estimated restoration times is as follows:

- Look up the historical average values that pertain to an event with its characteristics
- Verify whether or not an assessment has already been made for the event (if JOBS.ACT_ASSESS_TIME is non-null)

If assessment has been made:

- The repair time assessment provided (JOBS.EST_REPAIR_MINUTES) will be used in the calculation rather than the historical Repair average
- Verify whether or not a crew is currently onsite for this event
- If a crew is onsite:
 - Check the crew type to verify whether or not this type of crew is one that can repair this event
 - If crew can repair:
 - It is assumed that the crew that's onsite is there to perform the repair. The historical Travel to Repair average will not be used in the calculation. The actual repair time assessment (JOBS.EST_REPAIR_MINUTES) is added to the time at which the crew arrived onsite to generate the estimated restoration time (ERT) for the event
 - If crew cannot repair:
 - It is assumed that the onsite crew is there to perform the assessment, and another crew must be sent out to perform the repair. The historical Travel to Repair average and the actual repair time assessment are added to the time at which the first crew that is eligible to repair this event will become available to generate the estimated restoration time (ERT) for the event
- If a crew is not onsite:
 - The historical Travel to Repair average and the actual repair time assessment are added to the time at which the first crew that is eligible to repair this event will become available to generate the estimated restoration time (ERT) for the event. The historical Clean average is added to the ERT and used as the time at which that eligible crew is available to be used for another event in the simulation.

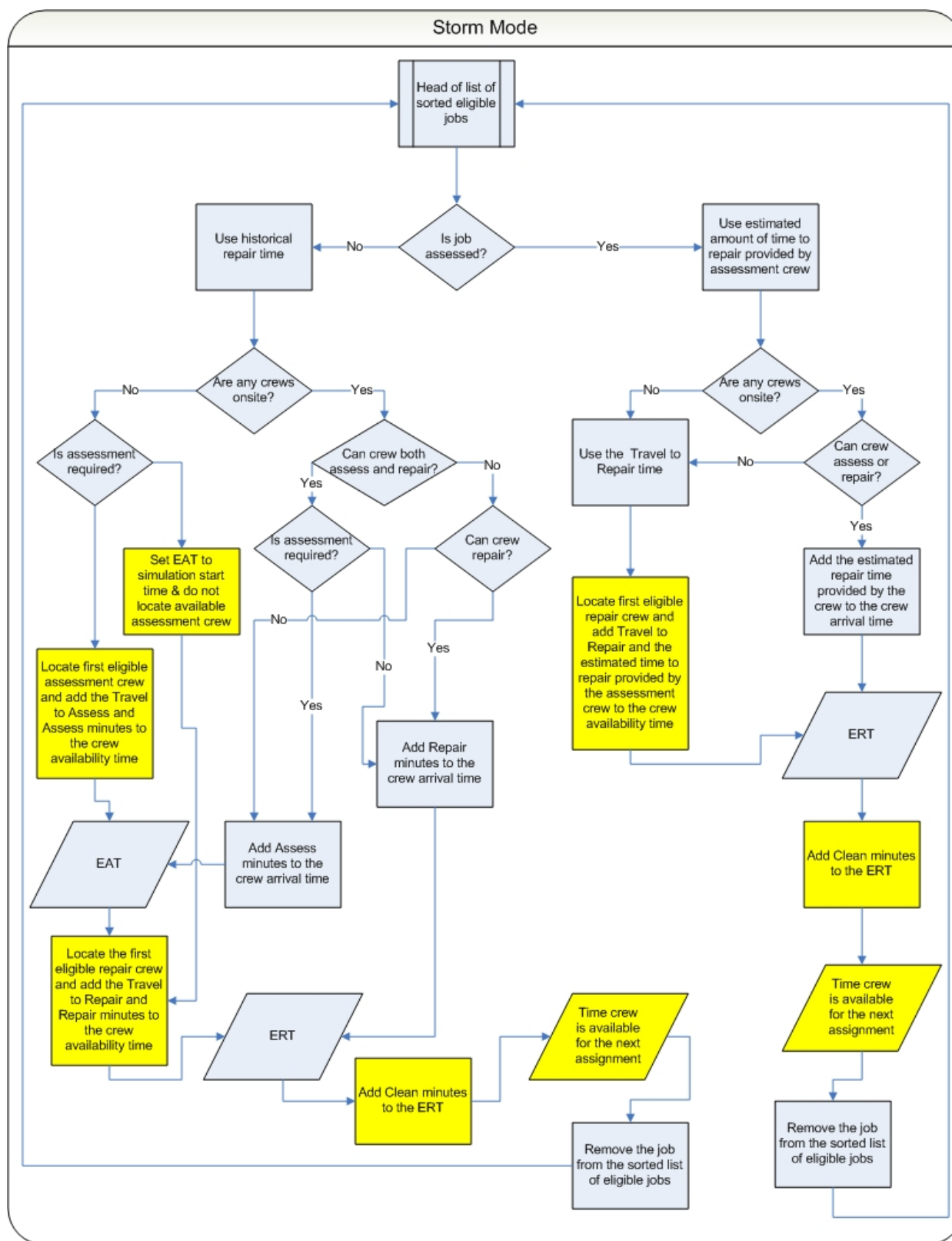
If no assessment has yet been made:

- Verify whether or not a crew is currently onsite for this event
- If a crew is onsite:
 - Check the crew type to verify whether or not this type of crew is one that can both assess and repair this event
 - If the crew type cannot perform both tasks:
 - Verify if the crew type can repair this event
 - If crew can repair:

- It is assumed that the crew that's onsite is there to perform the repair. The historical Travel to Repair average will not be used in the calculation. The historical Repair average is added to the time at which the crew arrived onsite to generate the estimated restoration time (ERT) for the event
- If crew cannot repair:
 - It is assumed that the crew that's onsite is there to perform the assessment. The historical Assess average is added to the time at which the crew arrived onsite to generate the estimated assessment time (EAT). The historical Travel to Repair and historical Repair averages are added to the time at which the first crew that is eligible to repair this event will become available to generate the estimated restoration time (ERT) for the event. The historical Clean average is added to the ERT and used as the time at which that eligible crew is available to be used for another event in the simulation.
- If crew type can perform both tasks:
 - Verify whether or not assessment is required for this event (if Travel to Assess and Assess averages are both 0, assessment is not required)
 - If assessment is not required:
 - It is assumed that the crew that's onsite is there to perform the repair. The historical Travel to Repair average will not be used in the calculation. The historical Repair average is added to the time at which the crew arrived onsite to generate the estimated restoration time (ERT) for the event
 - If assessment is required:
 - It is assumed that the crew that's onsite is there to perform the assessment. The historical Assess average is added to the time at which the crew arrived onsite to generate the estimated assessment time (EAT). The historical Travel to Repair and historical Repair averages are added to time at which the first crew that is eligible to repair this event will become available to generate the estimated restoration time (ERT) for the event
- If a crew is not onsite:
 - Verify whether or not assessment is required for this event (if Travel to Assess and Assess averages are both 0, assessment is not required)
 - If assessment is not required:
 - No estimated assessment time (EAT) needs to be calculated. The historical Travel to Repair and historical Repair averages are added to the time at which the first crew that is eligible to repair this event will become available to generate the estimated restoration time (ERT) for the event. The historical Clean average is added to the ERT and used as the time at which that eligible crew is available to be used for another event in the simulation.
 - If assessment is required:
 - The historical Travel to Assess and historical Assess averages are added to the time at which the first crew that is eligible to assess this event will become available to generate the estimated assessment time (EAT) for the event. The EAT is used as the time at which that eligible assessment crew is available to be used for another event in the simulation. The historical Travel to Repair and historical Repair averages are added to the time at which the first crew that is eligible to repair this event will become available to generate the estimated restoration time (ERT) for the event. The historical Clean average is added to the ERT and used as the time at which that eligible repair crew is available to be used for another event in the simulation.

Storm Mode Algorithm Flow Chart

The yellow boxes indicate where the storm mode algorithm differs from the non-storm mode algorithm.



In summary, for an event that's in a control zone operating under storm mode:

Estimated assessment time =

- The time at which the first crew that's eligible to assess the event will become available +
- the historical average number of minutes it takes an assessment crew to arrive onsite +
- the historical average number of minutes it takes a crew to perform assessment once onsite

Estimated restoration time =

- The time at which the first crew that's eligible to repair the event will become available after the estimated assessment time +
- the historical average number of minutes it takes a repair crew to arrive onsite +
- the historical average number of minutes it takes a crew to repair once onsite =

Exceptions:

If a crew that can perform assessment is already onsite,

Estimated assessment time =

- The time at which the assessment crew arrived onsite +
- the historical average number of minutes it takes a crew to perform assessment once onsite

If an event has an actual assessment provided and no repair crew is yet onsite:

Estimated restoration time =

- The time at which the first crew that's eligible to repair the event will become available after the actual assessment time +
- the historical average number of minutes it takes a repair crew to arrive onsite +
- the actual number of minutes it will take to repair, per the assessment

Estimated restoration time =

- If an event has an actual assessment provided and a repair crew is already onsite,
- The time at which the repair crew arrived onsite +
- the actual number of minutes it will take to repair, per the assessment

If an event does not require assessment and no repair crew is yet onsite:

Estimated restoration time =

- The time at which the first crew that's eligible to repair the event will become available after the time at which the simulation iteration started +
- the historical average number of minutes it takes a repair crew to arrive onsite +
- the historical average number of minutes it takes a crew to repair once onsite

Note: When the historical averages are applied to the calculation, the average that applies to the conditions at the time the particular step is projected to begin is used, not the average that applies to the conditions at the time the simulation iteration began. For example, Shift A has a particular average value for repair, and Shift B has a different average value for repair. The simulation iteration start time is in Shift A, but the calculated estimated assessment time falls in Shift B. When calculating the estimated restoration time, the historical average value for repair that pertains to Shift B will be used, not that of Shift A, because the repair isn't projected to begin until sometime during Shift B.

Note: If the algorithm finds that the calculated estimated assessment time or estimated restoration time would fall beyond the end of the shift of the first eligible crew by more than 60 minutes, it will go back and recalculate the estimate using a different crew other than the one that was originally chosen.

Chapter 11

Service Alert Administration

This chapter describes the Oracle Utilities Network Management System - Service Alert application. It covers the following topics:

- **Overview**
- **Logging In**
- **Managing Groups**
- **Managing Contacts**
- **Using the Parameter Manager**
- **Using the Utility Customers Tab**
- **Using the Attributes Manager**
- **Service Alert Notification Examples**

Overview

Oracle Utilities Network Management System - Service Alert is an application that allows for sending notifications to utility personnel in the form of an e-mail, or to devices capable of receiving email messages such as alphanumeric pager or cell phone. These notifications are triggered by “events” in Oracle Utilities Network Management System - Trouble Management. For example, a notification could be used to alert a marketing staff member that an unplanned outage affects a major customer. This would enable the marketing person to contact the customer to provide up to date information about the status of the outage. Similarly, an operations staff member could be notified about the outage while away from the office.

As a notification engine, Service Alert provides for configurable delivery options through use of an administration tool, and dynamic message format control facilitated by XSL transformation of an XML-based message payload. This gives the administrator the ultimate power and flexibility in determining the routing and content of all notifications.

Service Alert Admin Login Window

The Login window is the first Service Alert Administration window you see. You must enter a valid user name and password, and then click the Validate button. Once your user name and password are validated, the system populates the option menu that allows you to select a user type.

The Login window displays the following fields and buttons:

- The **User ID** field allows you to enter the user name provided to you by the system administrator.
- The **Password** field allows you to enter the password provided to you by the system administrator.
- The **Validate** button verifies your login credentials. If the user name and password are not entered correctly, the system displays a warning dialog box.
- The **User Type** drop-down menu contains the list of user types within your authority.
- The **Login** button allows you to complete the login process. Once you click the Login button, the Service Alert Administration window opens, based upon the User Type selected.
- The **Change Password...** button brings up a dialog box that allows you to specify a new password for your user name.
- The **Quit** button exits the Login window.

Logging In

To login to Service Alert Administration, complete these steps:

1. Depending on how your system was installed, either:
 - Click the **Service Alert** icon found under the appropriate program group in your Windows Start Menu, or
 - Double click the **Service Alert** icon on your desktop, or
 - Open a web browser and type the Service Alert URL in the browser's Address field. The Service Alert Administration Tool Login window displays.
2. Enter your user name.
3. Enter your password.
4. Click the **Validate** button. The bottom portion of the Service Alert Administration Tool Login window sensitizes.
5. Select the appropriate **User Type** from the drop-down menu.
6. Click the **Login** button. The Service Alert Administration window opens.

Changing Your Password

You also use the Login dialog box to change your password. To change your password, complete these steps:

1. Depending on how your system was installed, either:
 - Click the Service Alert icon found under the appropriate program group in your Windows Start Menu, or
 - Double click the Service Alert icon on your desktop, or
 - Open a web browser and type the Service Alert URL in the browser's Address field. The Service Alert Administration Tool Login window displays.
2. Enter your user name.
3. Enter your password.
4. Click the **Validate** button. The bottom portion of the Service Alert Admin Tool Login window sensitizes.
5. Click on the **Change Password...** button. A Change Password dialog box will appear.
6. Type your old password in the **Old Password** field.
7. Type your new password in the **New Password** field.
8. Retype your new password in the **Verify Password** field to verify the change.
9. Click the **OK** button. You are returned to the Service Alert Admin Tool Login screen.
10. Click the **Login** button to finish logging in.

Service Alert Administration Window

The Service Alert Administration Tool enables you to configure message delivery options. It contains the following tabs:

- **Group Manager Tab**
- **Contact Manager Tab**
- **Parameter Manager Tab**
- **Using the Utility Customers Tab**
- **Using the Attributes Manager**

Managing Groups

The Group Manager tab on the Service Alert Administration Tool window is used to add, edit or remove contact groups, as well as specify the notification format for a group based on each notification type. A group is used in defining notification parameters. A notification parameter is the definition of a rule used to trigger a notification. Every parameter requires a group of contacts to be specified. This group specifies the intended recipients of a notification.

From the Group Manager tab, you can perform the following tasks:

- **Adding a Group**
- **Removing a Group**
- **Adding a Contact to a Group**
- **Removing a Contact from a Group**
- **Modifying the Message Transformation File**

For a description of the fields and buttons on this tab, see the following topic.

Group Manager Tab

The Group Manager tab contains the following information:

- The **Groups** panel displays a list of all groups in the system. A group does not need to contain any contacts, nor does it need to be associated with a notification parameter.
- The **Add...** button on the Groups panel opens the Add Group dialog. This dialog allows a new, empty group to be created.
- The **Remove** button on the Groups panel deletes the group from the database. This will also delete all parameters associated with the group, but contacts that are members of the group are not deleted.
- The **Contacts** panel displays a list of the individual members in the selected group.
- The **Add...** button on the Contacts panel opens the Add Contact dialog. This dialog allows contacts to be added to the selected group.
- The **Remove** button on the Contacts panel removes the selected contact from the selected group.
- The **Message Types** panel displays a list of the available notification message types that the selected group can receive.
- The **Transforms** panel contains information regarding the transforms for the selected message type.
- The **Email** field displays the transform, in the form of an XSL file, which will be applied to the notifications of the selected notification type bound for an email destination corresponding to members of the selected group.
- The **Pager** field displays the transform, in the form of an XSL file, which will be applied to the notifications of the selected notification type bound for a pager destination corresponding to members of the selected group. A pager is considered to be any device capable of receiving email messages such as digital cellular phone or alphanumeric pager.
- The **Printer** field displays the transform, in the form of an XSL file, which will be applied to the notifications of the selected notification type bound for a printer destination corresponding to members of the selected group.
- The **Modify Transform** button saves the XSL file information to the database for the selected group and notification type. The user must verify that specified XSL file is available in the designated location.

Adding a Group

To add a group, complete these steps:

1. Click the **Group Manager** tab on the Service Alert Administration Tool.
2. Click the **Add** button below the Groups list. The Add Group dialog opens.
3. Enter a group name in the Group Name text field.
4. Click **OK** to create a group, or **Cancel** to avoid creating the group.

Removing a Group

To remove a group, complete these steps:

1. Click the **Group Manager** tab on the Service Alert Administration Tool.
2. Click on a group on the **Groups** list. The highlighted group is the group to be removed.

3. Click the **Remove** button below the Groups list. A confirmation dialog opens.
4. Click **Yes** to remove the group, or **No** to avoid removing the group.

Adding a Contact to a Group

To add a contact to a group, complete these steps:

1. Click the *Group Manager* tab on the Service Alert Administration Tool.
2. Click on a group on the *Groups* list. The highlighted group is the group to which a contact will be added.
3. Click on the **Add** button below the Contacts list. The Select Contact dialog opens. The Contacts table in the Select Contact dialog displays all the contacts in the system that do not belong to the selected group.
4. Click on a row in the Contacts table. The Contacts table contains the following columns:
 - **ID** – System assigned unique id for the contact.
 - **External ID** – A unique identifier that is useful for identifying an individual, particularly when that individual has more than one contact entry. Sorting on the External ID allows for quick viewing of all an individual's contact entries, e.g. Employee ID.
 - **Name** – The contact's name.
 - **Email** – The contact's email address.
 - **Pager** – The contact's pager address.
 - **Active** – A flag to indicate whether or not the contact is enabled in the system. Disabled contacts cannot receive notifications. Note that the table row colors correspond to whether a contact is active (white) or inactive (light blue).
 - **Printer** – The contact's printer name.
5. Click **OK** to add the selected contact to the group, or **Cancel** to avoid adding the contact to the group.

Removing a Contact from a Group

To remove a contact from a group, complete these steps:

1. Click the **Group Manager** tab on the Service Alert Administration Tool.
2. Click on a group on the **Groups** list. The highlighted group is the group from which a contact will be removed. The Contacts list displays the contacts in the selected group.
3. Click on a contact on the **Contacts** list. This is the contact to be removed.
4. Click the **Remove** button below the Contacts list. The Remove Contact From Group dialog opens.
5. Click **Yes** to remove the contact from the group, or **No** to avoid removing the contact from the group.

Modifying the Message Transformation File

To modify the transform for a given group and notification type, complete these steps:

1. Click the **Group Manager** tab on the Service Alert Administration Tool.
2. Click on a group on the **Groups** list. The highlighted group is the group for which the transformation filename will be modified.

3. Click on a notification type in the **Message Type** list. The highlighted type will be the notification type for which the transformation filename will be modified. The Email, Pager, and Printer transformation filename fields display default values for each transformation.
4. Modify the filenames associated with each transform.
5. Click **Modify Transform** to save the filenames to the database.

Managing Contacts

The Contact Manager tab allows you to perform the following tasks:

- **Adding a Contact**
- **Editing a Contact**
- **Selecting a Paging Provider**
- **Removing a Contact**

For a description of the fields and buttons on this tab, see the following topic.

Contact Manager Tab

The Contact Manager tab is used to add, edit, or remove contact information. The contact information contains identification information to associate each entry with an individual, as well as details regarding contacting the individual when a notification occurs. Note that an individual may have many contact entries. All contact entries in the system are listed in the Contacts table. Disabled contacts cannot receive notifications.

The Contact Manager tab displays the following fields and buttons:

- The **Contacts** panel lists all contact entries in the system. Note that the table row colors correspond to whether a contact is active (white) or inactive (bluish gray). For convenience, the rows in the table can be sorted in ascending or descending order by clicking on any column header.
- The **ID** column contains the system assigned unique id for the contact.
- The **External ID** column contains a unique identifier that is useful for identifying an individual, particularly when that individual has more than one contact entry. Sorting on the External ID allows for quick viewing of all an individual's contact entries.
- The **Name** column contains the contact's name.
- The **Email** column contains the contact's email address.
- The **Pager** column contains the contact's pager address.
- The **Printer** column contains the contact's printer name.
- The **Add** button activates the editable fields in the Contact Information panel, which allows you to add a new contact.
- The **Edit** button allows the user to edit contact information for the contact selected in the Contacts table.
- The **Remove** button removes the currently selected parameter from the system.
- The **Contact Information** panel is where the details for a contact are entered and/or edited.
- The **ID** field contains the system assigned unique id for the contact. This value is not editable by the user and therefore the field is always disabled.
- The **Groups** field contains the groups to which this contact belongs. This field is not editable by the user, although group memberships can be modified on the Group Manager panel.

- The **Name** field contains the contact's name. This field can be edited when in add/edit mode. For sorting purposes, it is recommended that names be entered in "Last name, First Name" type format.
 - The **External ID** field contains a unique identifier that is useful for identifying an individual, particularly when that individual has more than one contact entry. Sorting on the External ID allows for quick viewing of all an individual's contact entries. A work phone number (possibly concatenated with a phone extension) could be used, for example.
 - The **Email** field contains the contact's email address. This field can be edited when in add/edit mode.
 - The **Printer** field contains the contact's printer name. This field can be edited when in add/edit mode.
 - The **Pager** field contains the contact's pager address. This field can be edited when in add/edit mode. This value will be the email alias for a pager device for the contact. The button next to the field allows the user to browse for a paging provider to assist in constructing the pager address string.
-
- The  button opens the Select a Paging provider dialog. This dialog provides a convenient means for select a paging provider used in constructing the email alias for a pager.
 - The **Active** checkbox enables/disables the contact entry. Disabled contacts do not receive notifications.
 - The **Save** button saves the contact information currently being added/edited to the database.
 - The **Cancel** button cancels the current add/edit operation.

Adding a Contact

To add a contact, complete these steps:

1. Click the **Contact Manager** tab on the Service Alert Administration Tool.
2. Click the **Add** button below the Contacts table. The appropriate fields in the Contact Information section become enabled.
3. Fill in the following fields: Name, External ID, Email (optional), Pager (optional), Printer (optional), and Active. The **Save** button becomes enabled.
4. If necessary, select a paging provider. See **Selecting a Paging Provider** on page 11-8 for instructions regarding selecting a paging provider.
5. Click the **Save** button to save the contact information.

Note: Creating a contact with a blank email, pager, and printer address effectively disables notification of the contact.

Editing a Contact

To edit a contact, complete these steps:

1. Click the **Contact Manager** tab on the Service Alert Administration Tool.
2. Click on a row in the **Contacts** table. This row represents the contact to be edited.
3. Click the **Edit** button below the Contacts table. The appropriate fields become enabled.
4. Modify one or more of the following fields: Name, External ID, Email, Pager, Printer, and Active.
5. If necessary, select a paging provider. See **Selecting a Paging Provider** on page 11-8 for instructions regarding selecting a paging provider.

6. Click the **Save** button to save the contact information.

Note: Editing a contact to have a blank email, pager, and printer address effectively disables notification of the contact.

Selecting a Paging Provider

To select a paging provider, complete these steps:

1. Click on the **Search** icon next to the Pager field. The Select a Paging Provider dialog appears.
2. Click on a row in **Paging Providers** table. This row represents the paging provider to be chosen. The Paging Providers table contains the following columns:
 - **Provider** – The name of the paging provider company.
 - **Prefix** – A description of how an email alias for the pager is constructed. Typically, a sample prefix will be concatenated with the domain name.
 - **Domain Name** – The domain name used to construct the email alias for the pager device.
3. Click **OK** to choose the selected paging provider, or **Cancel** to dismiss the dialog without selecting a provider. The Select Paging Provider dialog closes.
4. Edit the **Pager** text field as appropriate.

Note: The paging provider table is populated during the system installation. If you need to add, edit or modify paging provider information then please contact your system administrator.

Removing a Contact

To remove a contact, complete these steps:

1. Click the **Contact Manager** tab on the Service Alert Administration Tool.
2. Click on a row in the **Contacts** table. This row represents the contact to be removed.
3. Click the **Remove** button below the Contacts table. The Remove Contact dialog opens.
4. Click **Yes** to remove the contact from the system, or **No** to avoid removing the contact from the system

Using the Parameter Manager

The Parameter Manager tab is used to add, edit, or remove notification triggering parameter information. A notification triggering parameter is rule for defining a notification trigger within Service Alert. A parameter consists of a name, a threshold value, a group to notify when a violation occurs, and an associated control zone, device, or customer. Inactive parameters cannot be violated, and therefore will never trigger a notification.

The Parameter Manager tab allows you to perform the following tasks:

- **Adding a Customer Count Parameter**
- **Adding a Specific Customer Parameter**
- **Adding a Frequency of Outages Parameter**
- **Adding a Frequency of Service Interruptions Parameter**
- **Editing a Parameter**
- **Removing a Parameter**

For a description of the fields and buttons on this tab, see the following topic.

Parameter Manager Tab

The Parameter Manager tab contains two panels:

- **Parameters Panel**
- **Parameter Information Panel**

Parameters Panel

The Parameters Panel displays the following fields and buttons:

- The **Parameters** panel lists all parameters in the system. Note that the table row colors correspond to whether a parameter is active (white) or inactive (bluish gray). For convenience, the rows in the table can be sorted in ascending or descending order by clicking on any column header.
- The **ID** column contains the system assigned internal id for the parameter.
- The **Name** column contains a descriptive name given to the parameter.
- The **Type** column contains the notification type on which the parameter is based.
- The **Group** column contains the group of contacts to be notified when a parameter violation occurs.
- The **Value** column contains the threshold value used in determining if a parameter violation has occurred. The units for this value are based on the notification type. For example, the parameter value unit of for the “Unplanned Outage Notification” is “number of customers out.” The “Unplanned Outage Affecting Major Customers” notification parameter value unit is “number of major customers out.”
- The **Event Type** column contains the name(s) of the specific event type(s) this notification will be triggered for.
- The **Event State** column contains the name(s) of the specific event state(s) this notification will be triggered for. (Currently only used for Specific customer affected by unplanned outage notification.)
- The **Use Event States** column contains a flag to indicate whether the Event State trigger is active for the parameter.
- The **Time Interval** column contains the time interval associated with the parameter, if applicable.
- The **Disable During Storm** column contains a flag to indicate whether parameter violation should be suppressed when the associated control zone is in storm mode or the associated device resides in a control zone that is in storm mode. Storm modes are defined as part of Oracle Utilities Network Management System – Trouble Management configuration (rule sets applied to a control zone in the Authority tool).
- The **Account** column contains the account number of the customer associated with the parameter, if applicable.
- The **Device** column contains the device to which the parameter applies. A parameter must specify either a control zone or a device (but not both).
- The **Device Class** column contains the type of device to which the parameter applies, if applicable.
- The **Control Zone** column contains the control zone to which the parameter applies. A parameter may specify either a control zone or a device (but not both).
- The **Add** button activates the editable fields in the Parameter Information panel, which allows you to add a new parameter.
- The **Edit** button allows you to edit the currently selected parameter.
- The **Remove** button removes the currently selected parameter from the system.

Parameter Information Panel

The Parameter Information Panel displays the following fields and buttons:

- The **Parameter Information** panel is where the details for a parameter are entered and/or edited.
- The **Name** field displays the descriptive name given to the parameter. This value can be modified when in add/edit mode.
- The **Select Contact Groups** button brings up the Select Contact Groups dialog for selecting one or more groups to be notified when the parameter is violated. You can use the <Ctrl> key in conjunction with the left mouse button to make multiple selections or deselect a group in the Select Contact Groups dialog. This button is enabled when in add/edit mode.
- The **Type** field displays a list of enumerated notification types to which this parameter applies. This value can be selected when in add/edit mode.
- The **Value** field displays the parameter threshold value. This value can be modified when in add/edit mode.
- The **Select Event Types** button brings up the Select Event Types dialog for selecting one or more event types that will trigger the notification when the parameter is violated. You can use the <Ctrl> key in conjunction with the left mouse button to make multiple selections or deselect a group in the Select Event Types dialog. This button is enabled when in add/edit mode.
- The **Select Event States** button brings up the Select Event States dialog for selecting one or more event states that will trigger the notification when the parameter is violated. You can use the <Ctrl> key in conjunction with the left mouse button to make multiple selections or deselect a group in the Select Event States dialog. This button is enabled when in add/edit mode. (Currently only used for Specific customer affected by unplanned outage notification.)
- The **Time Interval** field displays the time interval value associated with the parameter. This value can be modified when in add/edit mode, depending upon the type of notification selected.
- The **Specify Time Interval** button displays the Specify Time Interval dialog, allowing you to specify what time interval should be used for the parameter, if applicable.
- The **Clear** button to the right of the Specify Time Interval button clears the Time Interval field when pressed.
- The **Device** field displays the alias of the device to which the parameter applies. A parameter may specify either a control zone or a device (but not both). This value can be modified when in add/edit mode, depending upon the type of notification selected.
- The **Device Search** button displays the Device Search dialog, allowing you to search for a device to associate with the parameter, if applicable.
- The **Clear** button to the right of the Device Search button clears the Device field when pressed.
- The **Device Class** field displays the class or type of device to which the parameter applies. This value can be modified when in add/edit mode, depending upon the type of notification selected.
- The **Select Device Class** button displays the Select Class dialog, allowing you to select a type of device to associate with the parameter, if applicable.
- The **Clear** button to the right of the Select Device Class button clears the Device Class field when pressed.
- The **Control Zone** field displays the control zone of the device to which the parameter applies. A parameter must specify either a control zone or a device (but not both). This value can be modified when in add/edit mode.

- The **Select Zone** button displays the Select Control Zone dialog, allowing you to associate the parameter with a control zone, if applicable.
- The **Clear** button to the right of the Control Zone field clears the Control Zone field when pressed.
- The **Customer Account** field displays the account number of the customer associated with the parameter, if applicable.
- The **Account Search** button displays the Select Account dialog, allowing you to search for a particular customer account to associate with the parameter, if applicable.
- The **Clear** button to the right of the Customer Account field clears the Customer Account field when pressed.
- The **Disable During Storm** checkbox allows you to enable/disable the parameter during storm mode.
- The **Active** checkbox allows you to enable/disable the parameter.
- The **Save** button saves the parameter information.
- The **Cancel** button cancels an add/edit parameter operation.

About Parameter Values

A parameter must have certain required data specified before it may be saved. A parameter consists of a name, a threshold value, a group to notify when a violation occurs, and an associated control zone, device, or customer. The parameter value has a different meaning in the context of each of the various notification types. The following table gives the units for each notification type.

Notification Type	Parameter Value Unit
Unplanned Outage	Number of customers affected
Unplanned Outage Involving Major Customer(s)	Number of major customers affected
Unplanned Outage Affecting Specific Customer	N/A
Outage Restoration for Specific Customer	N/A
Frequency of Outages on a Device	Number of outages
Frequency of Outages on a Device (historical)	Number of outages
Frequency of Service Interruptions	Number of service interruptions

Note: A group must exist to save the parameter. Use the Group Manager tab to create a group if one does not already exist.

Different notification types have different additional data required. The following table lists the other required values for each notification type.

Notification Type	Other Required Information
Unplanned Outage	Device or Control Zone or Device Class and Control Zone
Unplanned Outage Involving Major Customer(s)	Device or Control Zone or Device Class and Control Zone
Unplanned Outage Affecting Specific Customer	Customer Account
Outage Restoration	Customer Account or Device or Control Zone or Device Class and Control Zone
Frequency of Outages on a Device	Time Interval, Device or Device Class or Control Zone
Frequency of Outages on a Device (historical)	Time Interval, Device or Device Class or Control Zone
Frequency of Service Interruptions	Time Interval, Control Zone

Adding a Customer Count Parameter

To add either an Unplanned Outage Notification parameter or a Major Customers Affected by Unplanned Outage Notification parameter, complete these steps:

1. Click the **Parameter Manager** tab on the Service Alert Administration Tool.
2. Click the **Add** button beneath the Parameters table. The appropriate fields on the Parameter Information panel become enabled.
3. Enter a descriptive name for the parameter into the **Name** field.
4. Click the **Select Contact Groups** button. The Select Contact Groups dialog appears.
5. Select one or more groups to be notified when the parameter is violated from the Select Contact Groups dialog.
6. Click the **OK** button on the Select Contact Groups dialog. The Select Contact Groups dialog disappears.
7. Select either “1. Count of customers affected by unplanned outage notification” or “2. Count of major customer(s) affected by unplanned outage notification” from the Type drop-down menu.
8. Enter a number in the Value field that represents the number of customers out (Unplanned Outage Notification) or the number of major customers out (Major Customers Affected by Unplanned Outage Notification) there must be in order to trigger the notification.
9. If desired, click the **Select Event Types** button to bring up the Select Event Types dialog to limit the types of events that can trigger the notification. If no selection is made, then the default is all event types.
10. Either specify a device or a control zone for the parameter. This is used in conjunction with the Value in order to trigger the notification.
11. To specify a device, either type a device name into the **Device** field, or do the following:
 - Click the **Device Search** button to bring up the Device Search dialog.

- Enter into the Search Text field your search criteria. You may use an asterisk (*) as a wildcard.
 - Click the **Search** button. The search results are displayed in the table.
 - Select the desired device from the table, and then click the **OK** button. The Device Search dialog disappears, and the Device field is populated with the name of the selected device.
12. To specify a control zone, click the **Select Zone** button. The Select Control Zone dialog appears.
 13. Select the desired control zone from the tree, and then click the **OK** button. The Select Control Zone Dialog disappears, and the Control Zone field is populated with the name of the selected control zone.
 14. Select/deselect the **Disable During Storm** checkbox as desired.
 15. Select/deselect the **Active** checkbox as desired.
 16. Click the **Save** button to save the parameter.

Adding a Specific Customer Parameter

To add either an Unplanned Outage Affecting a Specific Customer parameter or an Outage Restoration Notification for a Specific Customer parameter, complete these steps:

1. Click the **Parameter Manager** tab on the Service Alert Administration Tool.
2. Click the **Add** button beneath the Parameters table. The appropriate fields on the Parameter Information panel become enabled.
3. Enter a descriptive name for the parameter into the **Name** field.
4. Click the **Select Contract Groups** button. The Select Contact Groups dialog appears.
5. Select one or more groups to be notified when the parameter is violated from the **Select Contact Groups** dialog.
6. Click the **OK** button on the Select Contact Groups dialog. The Select Contact Groups dialog disappears.
7. Select either “3. Specific customer affected by unplanned outage notification” or “4. Outage restoration notification” from the Type drop-down menu.
8. If desired, click the **Select Event Types** button to bring up the Select Event Types dialog to limit the types of events that can trigger the notification (for the unplanned outage notification only). If no selection is made, then the default is all event types.
9. Click the **Account Search** button to bring up the Account Search dialog.
10. Select a search criterion on the **Search Parameter** drop-down menu.
11. Enter text into the **Search Text** field according to the search criterion selected in the previous step. Note that an asterisk (*) serves as a wildcard.
12. Click the **Search** button. The search results are displayed in the table.
13. Select the desired account from the table, and then click the **OK** button. The Account Search dialog disappears, and the Customer Account field is populated with the account number of the selected customer account.
14. Select/deselect the **Disable During Storm** checkbox as desired.
15. Select/deselect the **Active** checkbox as desired.
16. Click the **Save** button to save the parameter.

Adding a Frequency of Outages Parameter

To add either a real-time or historical Frequency of Outages on a Device Notification parameter, complete these steps:

1. Click the **Parameter Manager** tab on the Service Alert Administration Tool.
2. Click the **Add** button beneath the Parameters table. The appropriate fields on the Parameter Information panel become enabled.
3. Enter a descriptive name for the parameter into the **Name** field.
4. Click the **Select Contract Groups** button. The Select Contact Groups dialog appears.
5. Select one or more groups to be notified when the parameter is violated from the **Select Contract Groups** dialog.
6. Click the **OK** button on the Select Contact Groups dialog. The Select Contact Groups dialog disappears.
7. Select either “5. Frequency of outages on a device notification” or “6. Frequency of outages on a device notification (historical)” from the Type drop-down menu.
8. Enter a number in the **Value** field that represents the number of outages there must be in order to trigger the notification.
9. If desired, click the **Select Event Types** button to bring up the Select Event Types dialog to limit the types of events that can trigger the notification. If no selection is made, then the default is all event types.
10. Click the **Specify Time Interval** button to bring up the Specify Time Interval dialog. Specify a time interval either as a certain number of hours/days/weeks/years, or, in the case of the historical notification only, as some specific date/time in the past to the present.

To specify the time interval as having a specific begin date, complete these steps:

- Select the **Begin Date** radio button on the Specify Time Interval dialog. The Calendar button becomes enabled.
- Click on the **Calendar** button. The Calendar dialog appears.
- Specify the desired begin date and time in the Calendar dialog, then press the **OK** button. The Calendar dialog disappears, and the selected date/time now appears in the field next to the Begin Date radio button.

To specify the time interval as a certain number of hours/days/weeks/years, complete these steps:

- Select the **Time Window** radio button. The text field and drop-down button to the right of it become enabled.
 - Select the desired unit of time from the drop-down menu and enter the desired number of units into the text field.
 - Click the **OK** button on the Specify Time Interval dialog. The Specify Time Interval dialog disappears, and the Time Interval field is populated with the interval that was specified.
11. Either specify a device or a device class and control zone for the parameter. These are used in conjunction with the Value and Time Interval in order to trigger the notification.

To specify a device, either type a device name into the **Device** field, or do the following:

- Click the **Device Search** button to bring up the Device Search dialog.
- Enter into the **Search Text** field your search criteria. You may use an asterisk (*) as a wildcard.
- Click the **Search** button. The search results are displayed in the table.

- Select the desired device from the table, and then click the **OK** button. The Device Search dialog disappears, and the Device field is populated with the name of the selected device.

To specify a device class and control zone combination, complete these steps:

- Click the **Select Device Class** button. The Select Class dialog appears.
- Select the desired device class from the tree, and then click the **OK** button. The Select Class dialog disappears, and the Device Class field is populated with the name of the device class.
- To specify a control zone, click the **Select Zone** button. The Select Control Zone dialog appears.
- Select the desired control zone from the tree, and then click the **OK** button. The Select Control Zone Dialog disappears, and the Control Zone field is populated with the name of the selected control zone.

12. Select/deselect the **Disable During Storm** checkbox as desired.

13. Select/deselect the **Active** checkbox as desired.

14. Click the **Save** button to save the parameter.

Adding a Frequency of Service Interruptions Parameter

To add a Frequency of Service Interruptions Notification parameter, complete these steps:

1. Click the **Parameter Manager** tab on the Service Alert Administration Tool.
2. Click the **Add** button beneath the Parameters table. The appropriate fields on the Parameter Information panel become enabled.
3. Enter a descriptive name for the parameter into the **Name** field.
4. Click the **Select Contract Groups** button. The Select Contact Groups dialog appears.
5. Select one or more groups to be notified when the parameter is violated from the Select Contact Groups dialog.
6. Click the **OK** button on the Select Contact Groups dialog. The Select Contact Groups dialog disappears.
7. Select “7. Frequency of service interruptions notification (historical)” from the **Type** drop-down menu.
8. Enter a number in the **Value** field that represents the number of service interruptions there must be in order to trigger the notification.
9. If desired, click the **Select Event Types** button to bring up the Select Event Types dialog to limit the types of events that can trigger the notification. If no selection is made, then the default is all event types.
10. Click the **Specify Time Interval** button to bring up the Specify Time Interval dialog. Specify a time interval either as a certain number of hours/days/weeks/years, or as some specific date/time in the past to the present.

To specify the time interval as having a specific begin date, complete these steps:

- Select the **Begin Date** radio button on the Specify Time Interval dialog. The Calendar button becomes enabled.
- Click on the **Calendar** button. The Calendar dialog appears.
- Specify the desired begin date and time in the Calendar dialog, then press the **OK** button. The Calendar dialog disappears, and the selected date/time now appears in the field next to the Begin Date radio button.

To specify the time interval as a certain number of hours/days/weeks/years, complete these steps:

- Select the **Time Window** radio button. The text field and drop-down button to the right of it become enabled.
- Select the desired unit of time from the drop-down menu and enter the desired number of units into the text field.
- Click the **OK** button on the Specify Time Interval dialog. The Specify Time Interval dialog disappears, and the Time Interval field is populated with the interval that was specified.

11. To specify a control zone for the parameter:

Note: The control zone is used in conjunction with the Value and Time Interval in order to trigger the notification.

- Click the **Select Zone** button. The Select Control Zone dialog appears.
- Select the desired control zone from the tree, and then click the **OK** button. The Select Control Zone Dialog disappears, and the Control Zone field is populated with the name of the selected control zone.

12. Select/deselect the **Active** checkbox as desired.

13. Click the **Save** button to save the parameter.

Editing a Parameter

To edit a parameter, complete these steps:

1. Click the **Parameter Manager** tab on the Service Alert Administration Tool.
2. Click on one of the existing parameters in the Parameters table. The **Edit** button becomes enabled.
3. Click on the **Edit** button. The appropriate fields will become enabled.
4. Edit each field as desired.
5. Click **Save** to save the edited information, or click **Cancel** to avoid saving the edited information.

Removing a Parameter

To remove a parameter, complete these steps:

1. Click the **Parameter Manager** tab on the Service Alert Administration Tool.
2. Click on one of the existing parameters in the Parameters table. The **Remove** button becomes enabled.
3. Click the **Remove** button. The Remove Parameter dialog opens.
4. Click **Yes** to remove the parameter or **No** to avoid removing the parameter.

Using the Utility Customers Tab

The Utility Customers tab is used for designating customers as being “major” within Service Alert and entering contact information for each major customer. This information will display in the “Major Customer Affected by an Unplanned Outage” notification. To “import” a customer into Service Alert, an “add” operation must be performed. Once the customer has been added, customer contacts can be associated with the account. Each customer contact can also have one or more phone entries, which indicate how the customer contact can be reached. To bring up contact information for an existing Service Alert major account, a “search” must be performed.

The Utility Customers tab allows you to perform the following tasks:

- **Adding an Account to Service Alert**
- **Searching for an Account**
- **Editing an Account**
- **Removing an Account**
- **Editing Customer Device Information**
- **Adding Customer Contact Information**
- **Searching for a Customer Contact**
- **Editing Customer Contact Information**
- **Removing Customer Contact Information**
- **Adding Customer Contact Phone Information**
- **Editing Customer Contact Phone Information**
- **Removing Customer Contact Phone Information**

For a description of the fields and buttons on this tab, see the following topic.

Utility Customers Tab

The Utility Customers tab displays the following fields and buttons:

- The header section contains details regarding a specific customer account.
- The **Account Number** field displays the account number of the major customer.
- The **Name** field displays the name of the major customer.
- The **Address** field displays the address of the major customer.
- The **Client Type** menu allows you to specify a client type value for the major customer. The available options are Undetermined, Office, Computer Data Center, Communications, Shelter, Command Center, Company Executives, and Business Leaders.
- The **Add** button displays the Add Account dialog. This dialog allows you to add a major customer into Service Alert. The main reason for doing this is to associate contact and contact phone information with the major customer.
- The **Edit** button places the header section into edit mode, allowing you to modify both the customer account name and the client type value.
- The **Remove** button removes an account from Service Alert. This does not affect the customer’s entries in the Oracle Utilities Network Management System tables.
- The **Search** button displays the Search Account dialog. This dialog allows you to search for a major customer that was previously added to Service Alert.
- The **Save** button allows you to save any changes you made while the header section was in edit mode, and returns the section to non-editable mode.

- The **Cancel** button returns the section to non-editable mode without saving any changes.
- The **Customer Devices** panel displays a list of devices that are associated with the currently selected account. For convenience, the rows in the table can be sorted in ascending or descending order by clicking on any column header.
- The **Service Location ID** column contains the service location identification value for the device.
- The **Device ID** column contains the identification value for the device.
- The **Load Transfer** column contains the load transfer value for the device. The available options are NONE, AUTOMATIC, and MANUAL.
- The **Load Shed** column contains the load shed value for the device. The available options are NO and YES.
- The **Edit...** button brings up the Device Information dialog, allowing you to modify the Load Transfer and Load Shed values of the selected device.
- The **Customer Contacts** panel contains the list of contacts for the currently selected account. For convenience, the rows in the table can be sorted in ascending or descending order by clicking on any column header.
- The **ID** column contains the system assigned unique id for the customer contact entry.
- The **Name** column contains the customer contact name.
- The **Title** column contains the customer contact title, if applicable.
- The **Instructions** column contains general instructions for contacting this individual.
- The **Add** button displays the Add/Edit Customer Contact dialog. This dialog allows you to add a customer contact.
- The **Edit** button displays the Add/Edit Customer Contact dialog. This dialog allows you to edit a customer contact.
- The **Remove** button removes the contact from the major customer contact listing.
- The **Search...** button displays the Search Customer Contacts dialog. This dialog allows you to search for a customer contact that was previously added to Service Alert.
- The **Customer Contact Phones** panel displays phone information for the currently selected contact in the Customer Contacts table. For convenience, the rows in the table can be sorted in ascending or descending order by clicking on any column header.
- The **ID** column contains the system assigned unique id for the customer contact phone entry.
- The **Type** column contains the type of phone (Office, Home, Cell, etc.).
- The **Number** column contains the phone number.
- The **Ext** column contains the phone extension, if applicable.
- The **Call Time** column contains the time of day to call the individual using this phone number (Anytime, Daytime, Nighttime, etc.).
- The **Sequence** column contains the preferred calling order for reaching the customer contact.
- The **Add** button displays the Add/Edit Customer Contact Phone dialog. This dialog allows you to add a customer contact phone entry.
- The **Edit** button displays the Add/Edit Customer Contact Phone dialog. This dialog allows you to edit a customer contact phone entry.
- The **Remove** button removes the contact phone entry from the selected contact's list of phone contact information.

Adding Accounts

The Add Account dialog opens once you press the **Add** button on the header section of the Utility Customers tab in the Service Alert Administration Tool. This dialog allows you to add a major customer into Service Alert.

The Add Account dialog displays the following fields and buttons:

- The **Search Text** field displays the text used to search for a major customer account. The text varies based on the search parameter. The asterisk character (“*”) serves as a wildcard.
- The **Search Parameter** field displays the current search parameter. The available parameters are Account Number, Account Name, Phone Number, Address, City State, and Zip Code.
- The **Search** button performs a major customer search within the Oracle Utilities Network Management System database based upon the Search Text and Search Parameter.
- The **Clear** button clears the Search Text field and the search results table.
- The **Account Number** column displays the account number of the major customer.
- The **Account Name** column displays the account name of the major customer.
- The **Phone Number** column displays the phone number of the major customer.
- The **Address** column displays the address of the major customer.
- The **City State** column displays the city and state portion of the major customer’s address.
- The **Zip Code** column displays the zip code of the major customer.
- The **Emergency** column is a flag to indicate that this is an Emergency customer.
- The **Key** column is a flag to indicate that this is a Key customer.
- The **Medical** column is a flag to indicate that this is a Medical customer.
- The **OK** button adds the customer to Service Alert and closes the Add Account dialog.
- The **Cancel** button closes the Add Account dialog.

Adding an Account to Service Alert

To add an account to Service Alert, complete these steps:

1. Click the **Utility Customers** tab on the Service Alert Administration Tool.
2. Click the **Add** button just below the Account Number / Name / Address fields. The Add Account dialog opens.
3. Select a search criterion on the **Search Parameter** drop menu.
4. Enter text into the **Search Text** field according to the search criterion selected in the previous step. Note that an asterisk (“*”) serves as a wildcard.
5. Click the **Search** button to perform a search for major customers in the Oracle Utilities Network Management System database. The search result table populates with a set of customer data.
6. Select a customer by clicking on a row in the table. The **OK** button becomes enabled.
7. Click **OK** to add the customer to Service Alert, or **Cancel** to avoid adding the account.

Searching for an Account

The Search Account dialog opens once you press the **Search** button on the header section of the Utility Customers tab in the Service Alert Administration Tool. This dialog allows you to search for a major customer that was previously added to Service Alert.

The Search Account dialog contains the following information:

- The **Search Text** field displays the text used to search for a major customer account within the Service Alert tables. The text varies based on the search parameter. The asterisk character (“*”) serves as a wildcard.
- The **Search Parameter** field displays the current search parameter. The available parameters are Account Number, Account Name, Phone Number, Address, City State, and Zip Code.
- The **Search** button performs a major customer search within the Service Alert database based on the search text and search parameter. The search is executed against customers previously added to Service Alert by means of the **Adding Accounts** on page 11-19 functionality.
- The **Clear** button clears the Search Text field and the search results table.
- The **Account Number** column displays the account number of the major customer.
- The **Account Name** column displays the account name of the major customer.
- The **Phone Number** column displays the phone number of the major customer.
- The **Address** column displays the address of the major customer.
- The **City State** column displays the city and state portion of the major customer’s address.
- The **Zip Code** column displays the zip code of the major customer.
- The **Emergency** column is a flag to indicate that this is an Emergency customer.
- The **Key** column is a flag to indicate that this is a Key customer.
- The **Medical** column is a flag to indicate that this is a Medical customer.
- The **OK** button populates the Utility Customer panel with customer information, including contacts and contact phone entries, and closes the Search Account dialog.
- The **Cancel** button closes the Search Account dialog.

Searching for an Account in Service Alert

To search for an account, complete these steps:

1. Click the **Utility Customers** tab on the Service Alert Administration Tool.
2. Click the **Search** button just below the Account Number / Name / Address fields. The Search Account dialog opens.
3. Select a search criterion on the **Search Parameter** drop menu.
4. Enter text into the **Search Text** field according to the search criterion selected in the previous step. Note that an asterisk (“*”) serves as a wildcard.
5. Click the **Search** button to perform a search for major customers within Service Alert. The search result table populates with a set of customer data.
6. Select a customer by clicking on a row in the table. The **OK** button becomes enabled.
7. Click **OK** to display the customer data and contact information on the Utility Customer panel, or **Cancel** to avoid selecting the account.

Editing an Account

To edit an account, complete these steps:

1. Search for an Account. (Refer to the previous topic for instructions). The customer account information loads into the header section.
2. Click the **Edit** button. The Name and Client Type fields become editable.
3. Edit the **Name** field and change the selected **Client Type** as desired.
4. Click the **Save** button. The changes are saved and the header section returns to non-edit mode. In order exit from edit mode without saving changes, click the **Cancel** button instead.

Removing an Account

To remove an account, complete these steps:

1. Search for an Account. (Refer to the previous topic for instructions). The **Remove** button becomes enabled.
2. Click the **Remove** button. The Remove Customer Account dialog opens.
3. Click **Yes** to remove the account from the system, or **No** to avoid removing the account from the system.

Editing Customer Device Information

To edit the load transfer or load shed information for a customer device, complete these steps:

1. Add an account or search for an account, as described in the previous topics.
2. Select a row in the Customer Devices table on the Utilities Customer tab and click the **Edit** button. The Device Information dialog opens.
3. Change the **Load Transfer** or **Load Shed** values as desired.
4. Click the **OK** button to close the dialog and save the changes, or click the **Cancel** button to exit from dialog without saving the changes.

Adding Customer Contact Information

To add customer contact information, complete these steps:

1. Add an account or search for an account, as described in the previous topics.
2. Click the **Add** button below the Customer Contacts table. The Add/Edit Contact dialog opens.
3. Enter in a **Name** and **Title** for the customer contact. If applicable, enter in general instructions, or any other relevant information, regarding the contacting the individual. The **OK** button becomes enabled.
4. Click **OK** to add the customer contact information to the database or **Cancel** to avoid adding the information.

Searching for a Customer Contact

The Search Customer Contacts dialog opens once you press the Search button on the Customer Contacts section of the Utility Customers tab. This dialog allows you to search for a customer contact that was previously added to Service Alert.

The Search Customer Contacts dialog displays the following fields and buttons:

- The **Search Text** field displays the text used to search for a major customer account within the Service Alert tables. The text varies based on the search parameter. The asterisk character (“*”) serves as a wildcard.
- The **Search Parameter** field displays the current search parameter. The available parameters are Contact Name, Contact ID, Contact Title, Account Name, and Account Number.
- The **Search** button performs a customer contact search within the Service Alert database based on the search text and search parameter. The search is executed against customer contacts previously added to Service Alert by means of the **Adding Customer Contact Information on page 11-21** functionality.
- The **Clear** button clears the Search Text field and the search results table.
- The **Contact ID** field contains the system assigned unique id for the customer contact entry.
- The **Contact Name** column contains the customer contact name.
- The **Contact Title** column contains the customer contact title, if applicable.
- The **Account Name** column displays the account name of the major customer the contact is already associated with.
- The **Account Number** column displays the account number of the major customer the contact is.
- The **Add** button associates the selected contact with the currently displayed major customer, including contacts and contact phone entries, adds a row for this contact to the Customer Contacts table, and closes the Search Customer Contacts dialog.
- The **Cancel** button closes the Search Customer Contacts dialog.

Searching for a Customer Contact in Service Alert

To search for a customer contact, complete these steps:

1. Add an account or search for an account.
2. Click the **Search** button just below the Customer Contacts table. The Search Customer Contacts dialog opens.
3. Select a search criterion on the **Search Parameter** drop menu.
4. Enter text into the **Search Text** field according to the search criterion selected in the previous step. Note that an asterisk (“*”) serves as a wildcard.
5. Click the **Search** button to perform a search for customer contacts within Service Alert. The search result table populates with a set of customer data.
6. Select a customer contact by clicking on a row in the table.
7. Click **Add** to associate the customer contact with the major customer currently displayed on the Utility Customer panel, or **Cancel** to avoid adding a contact.

Editing Customer Contact Information

To edit customer contact information, complete these steps:

1. Search for an account that has customer contacts associated with it.
2. Click the **Edit** button below the Customer Contacts table. The Add/Edit Contact dialog opens.
3. Edit the **Name**, **Title**, and **Instructions** associated with the customer contact. The OK button becomes enabled.
4. Click **OK** to save the edited customer contact information to the database or **Cancel** to avoid saving the information.

Removing Customer Contact Information

To remove customer contact information, complete these steps:

1. Search for an account that has customer contacts associated with it.
2. Click on one of the existing contacts in the **Customer Contacts** table. The **Remove** button becomes enabled.
3. Click the **Remove** button below the Customer Contacts table. The Remove Contact dialog opens.
4. Click **Yes** to remove the contact's association with this account, or **No** to avoid removing the contact association.

Adding Customer Contact Phone Information

To add customer contact phone information, complete these steps:

1. Add an account or search for an account.
2. If the account does not have any associated contacts, add a customer contact.
3. Click on one of the existing contacts in the **Customer Contacts** table. The **Add** button below the Customer Contact Phones table becomes enabled.
4. Click the **Add** button below the Customer Contact Phones table. The Add/Edit Customer Contact Phone dialog opens.
5. Select the type of phone and call time from the drop menu **Type** and **Call Time** drop menus.
6. Enter a phone number in the **Number** field. If applicable, a phone extension can be entered in the text field to the right of the Number field.
7. Enter a non-negative value in the Sequence field. This number is used to indicate the priority of this phone entry relative to all other phone entries associated with the selected customer contact. The **OK** button becomes enabled.
8. Click **OK** to save the customer contact phone information to the database, or **Cancel** to avoid saving the phone information.

Editing Customer Contact Phone Information

To edit customer contact phone information, complete these steps:

1. Search for an account that has customer contacts associated with it.
2. Click on one of the existing contacts in the **Customer Contacts** table. The **Edit** button below the Customer Contact Phones table becomes enabled.

3. Click the **Edit** button below the Customer Contact Phones table. The Add/Edit Customer Contact Phone dialog opens.
4. Modify the selection the type of phone and call time from the drop menu **Type** and **Call Time** drop menus.
5. Edit a phone number in the **Number** field. Edit the phone extension in the text field to the right of the Number field.
6. Edit value in the **Sequence** field.
7. Click **OK** to save the customer contact phone information to the database, or **Cancel** to avoid saving the phone information.

Removing Customer Contact Phone Information

To remove customer contact phone information, complete these steps:

1. Search for an account that has customer contacts associated with it.
2. Click on one of the existing contacts in the **Customer Contacts** table.
3. Click on one of the contact phone entries in the **Customer Contact Phones** table. The **Remove** button below the Customer Contact Phones table becomes enabled.
4. Click the **Remove** button below the Customer Contact Phones table. The Remove Phone dialog opens.
5. Click **Yes** to remove the contact's selected phone entry, or **No** to avoid removing the entry.

Using the Attributes Manager

The Attributes Manager tab is used to add, edit, or remove attribute information associated with specific devices. Attribute Information can be displayed on notifications trigger by the associated device. An attribute consists of a Device ID, Attribute ID, a name and a value. Inactive attributes cannot be violated, and therefore will never trigger a notification.

The Attributes Manager tab allows you to perform the following tasks:

- **Adding Attributes**
- **Editing a Attribute**
- **Removing a Attribute**

For a description of the fields and buttons on this tab, see the following topic.

Attributes Manager Tab

The Attributes Manager tab displays the following fields and buttons:

- The **Attributes** panel lists all attributes known to Service Alert. Note that the table row colors correspond to whether a attribute is active (white) or inactive (bluish gray). For convenience, the rows in the table can be sorted in ascending or descending order by clicking on any column header.
- The **Device ID** column contains the device to which the attribute applies.
- The **Attribute ID** column contains the system assigned internal id for the attribute.
- The **Attribute Name** column contains a descriptive name given to the attribute.
- The **Attribute Value** column contains a value given to the attribute.
- The **Add** button displays the Device Search dialog, allowing you to search for a device to associate with the attribute.
- The **Edit** button allows you to edit the currently selected attribute.
- The **Remove** button removes the currently selected attribute from the Service Alert.
- The **Attribute Information** panel is where the details for an attribute are entered and/or edited.
- The **Device ID** field displays the alias of the device to which the attribute applies.
- The **Attribute ID** field displays the system assigned internal id for the attribute.
- The **Attribute Name** field displays the descriptive name given to the attribute. This value can be modified be when in add/edit mode.
- The **Attribute Value** field displays the value given to the attribute. This value can be modified be when in add/edit mode.
- The **Active** checkbox allows you to enable/disable the attribute.
- The **Save** button saves the attribute information.
- The **Cancel** button cancels an add/edit attribute operation.

Adding Attributes

An attribute consists of a name and a value associated to a device or customer. The attribute information can be displayed on notifications trigger by the associated device.

1. Click the **Attribute Manager** tab on the Service Alert Administration Tool.
2. Click the **Add** button beneath the Attributes table to bring up the Device Search dialog.

3. Enter into the **Search Text** field your search criteria. You may use an asterisk (“*”) as a wildcard.
4. Click the **Search** button. The search results are displayed in the table.
5. Select the desired device from the table, and then click the **OK** button. The Device Search dialog disappears, and the Device ID field is populated with the name of the selected device.
6. Enter a descriptive name for the attribute into the **Attribute Name** field.
7. Enter a value for the attribute into the **Attribute Value** field.
8. Select/deselect the **Active** checkbox as desired.
9. Click the **Save** button to save the attribute.

Editing a Attribute

To edit an attribute, complete these steps:

1. Click the **Attribute Manager** tab on the Service Alert Administration Tool.
2. Click on one of the existing attributes in the **Attributes** table. The **Edit** button becomes enabled.
3. Click on the **Edit** button. The appropriate fields will become enabled.
4. Edit each field as desired.
5. Click **Save** to save the edited information, or click **Cancel** to avoid saving the edited information.

Removing a Attribute

To remove an attribute, complete these steps:

1. Click the **Attribute Manager** tab on the Service Alert Administration Tool.
2. Click on one of the existing attributes in the **Attributes** table. The **Remove** button becomes enabled.
3. Click the **Remove** button. The Remove Attribute dialog opens.
4. Click **Yes** to remove the attribute or **No** to avoid removing the attribute.

Service Alert Notification Examples

Oracle Utilities Network Management System Service Alert sends the following types of notifications:

- **Unplanned Outage Notification** – based on the number of customers affected
- **Major Customers Affected by Unplanned Outage** – based on the number of “major” customers affected.
- **Unplanned Outage Affecting a Specific Customer** – based on an account number.
- **Outage Restoration Notification for a Specific Customer** – based on an account number.
- **Frequency of Outages on a Device Notification** – based on the number of outages experiences in a specified time frame on a given single device or on a given type of device in a given control zone.
- **Frequency of Outages on a Device (Historical) Notification** – based on the number of outages experiences in a specified time frame on a given single device or on a given type of device in a given control zone.
- **Frequency of Service Interruptions Notification** – based on the number of service interruptions experienced in a specified time frame in a given control zone.

All notifications can be sent via email, pager, or to a printer. A separate XSL style sheet is needed for email, pager, and printer output. All printer-bound notifications are formatted in a similar manner to the email notification for the same notification type.

Unplanned Outage Notification

The following figure shows an example of an Unplanned Outage Notification email message. It is formatted using the UnplannedOutageEmail.xsl file.

Unplanned Outage Notification

A Probable Device Outage (PDO) has been detected on device **disconnect_oh_5012-1** in the following location.

Company: PRODUCT
Region: METRO
Branch: JO CO
Substation: JO CO SUB 50
Feeder: JO CO 5031

The following summary information was provided for this event.

Event Number: 23512
Outage Type: Probable Device Outage (PDO)
Number of Calls Received: 5
Total Number of Customers Affected: 1112
Emergency Customers Affected: 55
Key Customers Affected: 41
Medical Customers Affected: 40

Violated Parameter(s)

ID	Name	Threshold Value (Number of customers affected)	Parameter Device Alias	Parameter Control Zone	Disabled During Storm	Associated Group
4	Johnson County - outage with > 500 customers out	500		PRODUCT/METRO/JO CO	N	Test Group 2

Group(s) Notified

Test Group 2

Individual(s) Notified

ID	Name	Type	Address
5	Jones, Bill	E-Mail	bill_jones@work.com
5	Jones, Bill	Pager	5554441234@acme_paging.com

Below is an example of an Unplanned Outage Notification pager message. It is formatted using the UnplannedOutagePager.xml file.

```
Unplanned outage: Job#[23512], Device[disconnect_oh_5012-1],
circuit[N/A] (12-14-2004 16:13:29)
```

Major Customers Affected by Unplanned Outage Notification

Below is an example of a Major Customers Affected by Unplanned Outage Notification email message. It is formatted using the CritCustOutageEmail.xml file.

Major Customers Affected By Unplanned Outage Notification

A Real Device Outage (RDO) has been detected on device **disconnect_oh_18224** in the following location.

Company: PRODUCT
Region: METRO
Branch: Southland
Substation: Southland SUB 41
Feeder: Southland 4154

The following summary information was provided for this event.

Event Number: 23516
Outage Type: Real Device Outage (RDO)
Number of Calls Received: 0
Total Number of Customers Affected: 337
Emergency Customers Affected: 1
Key Customers Affected: 1
Medical Customers Affected: 1

Major Customer(s) Affected

Account Number	Name	Address	Meter ID	EMR	KEY	MED	Contacts
3550862660	CITY OF OLATHE	12360 S ARAPAHO DR	2224858331153	N	Y	N	N/A
9561398129	DAMIAN, ELVIS	12505 S COTTONWOOD DR	4224860420221	N	N	Y	N/A
3533946615	REBER, ANCIL	12605 S ARAPAHO DR	4224889427348	Y	N	N	N/A

Violated Parameter(s)

ID	Name	Threshold Value (Number of customers affected)	Parameter Device Alias	Parameter Control Zone	Disabled During Storm	Associated Group
5	Southland - 1 major customer out	1		PRODUCT/METRO/Southland	N	Test Group 2

Group(s) Notified

Test Group 2

Individual(s) Notified

ID	Name	Type	Address
5	Jones, Bill	E-Mail	bill_jones@work.com
5	Jones, Bill	Pager	5554441234@acme_paging.com

Below is an example of a Major Customers Affected by Unplanned Outage Notification pager message. It is formatted using the CritCustOutagePager.xml file.

Major Customer outage: Job#[23516], Device[disconnect_oh_18224], circuit[N/A] (12-14-2004 16:16:15)

Unplanned Outage Affecting a Specific Customer Notification

Below is an example of an Unplanned Outage Affecting a Specific Customer Notification email message. It is formatted using the SpecificCustOutageEmail.xml file.

Specific Customer(s) Affected By Unplanned Outage Notification

A possible primary outage has been detected on device **disconnect_oh_018928** in the following location.

Company: PRODUCT
 Region: METRO
 Branch: Southland
 Substation: Southland SUB 82
 Feeder: Southland 8221

The following summary information was provided for this event.

Event Number: 23507
 Outage Type: Real Device Outage (4)
 Number of Calls Received: 0
 Total Number of Customers Affected: 1052
 Emergency Customers Affected: 97
 Key Customers Affected: 64
 Medical Customers Affected: 54

Customer(s) Affected

Account Number	Name	Address	EMR	MED	KEY	Contacts
2450987313	SPRINT NORTH SUPPLY	600 NEW CENTURY PKWY	N	N	Y	N/A

Violated Parameter(s)

ID	Name	Account Number	Disabled During Storm	Associated Group
6	Sprint North Supply (account #2450987313) - power out	2450987313	N	Test Group 3

Group(s) Notified
 Test Group 3

Individual(s) Notified

ID	Name	Type	Address
5	Jones, Bill	E-Mail	bill_jones@work.net
5	Jones, Bill	Pager	5554441234@acme_paging.com

Below is an example of an Unplanned Outage Affecting a Specific Customer Notification pager message. It is formatted using the SpecificCustOutagePager.xml file.

```
Unpl outage spec cust: Job#[23507], Device[disconnect_oh_018928],
Account[2450987313] (12-14-2004 15:01:43)
```


Outage Restoration Notification for a Specific Customer

Below is an example of an Outage Restoration Notification for a Specific Customer email message. It is formatted using the OutageRestorationEmail.xml file.

Outage Restoration Notification

A Real Device Outage (RDO) has been restored on device **disconnect_oh_018928** in the following location.

Company: PRODUCT
Region: METRO
Branch: Southland
Substation: Southland SUB 82
Feeder: Southland 8221

The following summary information was provided for this event

Event Number: 23507
Outage Type: Real Device Outage (RDO)
First Incident Time: 12/14/04 15:01:08
Restoration Time: 12/14/04 15:02:33
Number of Calls Received: 0
Total Number of Customers Affected: 1052
Emergency Customers Affected: 97
Key Customers Affected: 64
Medical Customers Affected: 54

Customer(s) Affected

Account Number	Name	Address	Area Code	Phone Number	Meter ID	EMR	KEY	MED	Contacts
2450987313	SPRINT NORTH SUPPLY	600 NEW CENTURY PKWY	555	7223771	3978741453, 8152362885, 8410610186	N	N	Y	N/A

Violated Parameter(s)

ID	Name	Account Number	Disabled During Storm	Associated Group
7	Sprint North Supply (account #2450987313) - power restored	2450987313	N	Test Group 3

Group(s) Notified
Test Group 3

Individual(s) Notified

ID	Name	Type	Address
5	Jones, Bill	E-Mail	bill_jones@work.com
5	Jones, Bill	Pager	5554441234@acme_paging.com

Below is an example of an Outage Restoration Notification for a Specific Customer pager message. It is formatted using the OutageRestorationPager.xml file.

```
Restore Time[12/14/04 15:02:33], Job#[23507],
Device[disconnect_oh_018928], Account[2450987313] (12-14-2004
15:03:03)
```

(Real-time) Frequency of Outages on a Device Notification

Below is an example of a Frequency of Outages on a Device Notification email message. It is formatted using the FreqOutagesDeviceEmail.xml file.

Frequency of Outages on a Device Notification (Real-time)

An outage, surpassing a parameter value, has been detected on device **disconnect_oh_6023** in the following location.

Company: PRODUCT
 Region: METRO
 Branch: JO CO
 Substation: JO CO SUB 50
 Feeder: JO CO 5062

Violated Parameter(s)

ID	Name	Threshold Value (Number of service interruptions)	Parameter Time Interval	Parameter Begin Date	Parameter Device	Parameter Device Class	Parameter Control Zone	Associated Group
5	param2	4	2 day(s)			disconnect_oh (126)	PRODUCT/METRO	group2

Group(s) Notified
 group2

Individual(s) Notified

ID	Name	Type	Address
2	Andrei Berezn	E-Mail	anita.bath@ces.com

Below is an example of a Frequency of Outages on a Device Notification pager message. It is formatted using the FreqOutagesDevicePager.xml file.

Freq Outages on Device (Real-time) Violation: Param ID = 5 (03-06-2006 17:54:26)

(Historical) Frequency of Outages on a Device Notification

Below is an example of a Frequency of Outages on a Device (Historical) Notification email message. It is formatted using the FreqOutagesDeviceHistEmail.xml file.

Frequency of Outages on a Device (Historical) Notification								
Violated Parameter(s)								
ID	Name	Threshold Value (Number of service interruptions)	Parameter Time Interval	Parameter Begin Date	Parameter Device	Parameter Device Class	Parameter Control Zone	Associated Group
8	Sample Freq of Outages on Device	66		01/01/04 00:00:00 - present	BR_R-4132			TestGroup1

Group(s) Notified
TestGroup1

Individual(s) Notified

ID	Name	Type	Address
8	Me	E-Mail	april_dornbrook@splwg.com

Below is an example of a Frequency of Outages on a Device (Historical) Notification pager message. It is formatted using the FreqOutagesDeviceHistPager.xml file.

Freq Outages on Device (Historical) Violation: Param ID = 8 (03-03-2006 15:08:37)

Frequency of Service Interruptions Notification

Below is an example of a Frequency of Service Interruptions Notification email message. It is formatted using the FreqServiceInterruptionEmail.xml file.

Frequency of Service Interruptions Notification						
Violated Parameter(s)						
ID	Name	Threshold Value (Number of service interruptions)	Parameter Time Interval	Parameter Begin Date	Parameter Control Zone	Associated Group
7	Sample Freq or Service Interruptions	45		02/10/06 00:00:00 - present	PRODUCT/METRO	TestGroup1
Group(s) Notified						
TestGroup1						
Individual(s) Notified						
ID	Name	Type	Address			
8	Me	E-Mail	april_dornbrook@splwg.com			

Below is an example of a Frequency of Service Interruptions Notification pager message. It is formatted using the FreqServiceInterruptionPager.xml file.

Freq Service Interruptions Violation: Param ID = 7 (03-03-2006 15:01:51)

Chapter 12

Management Reporting

The management reporting modules were designed specifically to meet the challenges of measuring, monitoring, and reporting performance of electric distribution operations. Considerable design and implementation guidance from the user community was incorporated into these modules, resulting in powerful, easy-to-use measuring, monitoring, and reporting tools.

A set of standard Trouble reports are available in either Business Objects, Oracle Discoverer, or Oracle BI Publisher. These Trouble reports reflect the information that executives and regulatory agencies typically require from a utility's operations systems.

This chapter also describes the Oracle Utilities Business Intelligence graphical portals and zones, which operators can use to view key performance indicators and other pertinent information relating to the operation of the distribution network.

This chapter includes the following topics:

- **Overview of Management Reporting**
- **Using Business Objects**
- **Using Oracle Discoverer**
- **Using Oracle BI Publisher**
- **Trouble Reporting Reports**

Overview of Management Reporting

Oracle Utilities Business Intelligence (OUBI) is the base Oracle Utilities Network Management System reporting module, a specially tuned data warehouse with Extraction, Transformation, and Load (ETL) capabilities for capturing information common to all of the Oracle Utilities applications.

The Oracle Utilities Network Management System Trouble Reporting module provides multiple Business Intelligence (BI) reporting tools (Business Objects, Oracle Discoverer, and Oracle BI Publisher) to display trouble information from OUBI. These reports are a starter kit of historical trouble information and performance measures based upon reliability indices, used with widely accepted third party Business Intelligence tools, as well as support for related ad hoc analysis and reporting.

The reporting tools are used as a means for generating reports and performing analysis on the information. As a result, you can easily interact with a variety of data sources by using a simple graphical interface, thus avoiding the technical complexity of relational databases.

Using Business Objects

This section covers Business Objects. For information about Oracle Discoverer, please refer to the **Defining Reports** on page 12-4.

This section includes the following topics:

- **Defining Reports**
- **Running a Report**
- **Sorting a Report**

Defining Reports

To generate a standard report in Business Objects, follow these steps:

1. Start up Business Objects Desktop Intelligence. The New Report Wizard opens.
 2. Select the **Generate a standard** report radio button.
 3. Click the **Begin** button to begin creating a new report. The Specify Data Access window appears, which displays the database options.
 4. Select the **Universe** radio button to use Business Objects universe from which to choose the data to display in a report.
 5. Click the **Next** button to move on to the next screen in the wizard. The Select a Universe window appears, requesting that you select a universe. The available universes are the NRT Universe, Service Alert Reporting, Storm Reporting, Switching Reporting, and Trouble Reporting.
 6. Select a universe from the Available Universes list. You have the option of setting a default universe by toggling on the **Set as My Default Universe** radio button. The field at the bottom of the window offers Help on the universe.
 7. Click the **Finish** button. The Query Panel opens for the universe you selected. To build a query, you choose objects for the results and conditions, apply sorts, and then run the query. The object model has a number of classes for this, all of which are accessed via the Queries object. The Class folders contain the objects for creating a report. Classes are described as a logical grouping of objects, and an object folder is grouped into the classes. Please see Business Objects documentation for more detailed information about Business Objects functionality.
 8. In the Query Panel, insert an object into the **Result Objects** field (top), by double-clicking it or dragging the object from the Classes and Objects field.
 9. To apply a condition into the **Conditions** field (bottom):
 - Drag one or more fields from the Classes and Objects field into the Conditions field to create a new condition.
- OR
- Select the Predefined Conditions radio button (button on the right, above the Options... button on the bottom-left portion of the window). The Classes and Objects field is replaced with the Predefined Conditions field.
 - Drag a predefined condition into the Conditions field.
 - Select the Classes and Objects radio button (button on the left, above the Options... button on the bottom-left portion of the window) to return to the Classes and Objects field.
10. To edit the content of a report, open the report and select the Edit Data Provider option from the Data menu. When the Query Panel opens, follow the steps listed above.

11. Press the **Run** button. The query for the report you have built is executed, and then a window containing the ad hoc report results appears.

Once you've defined a new report, you can run the report to see updated information. You can also sort this data for more efficient analysis.

Running a Report

To run a previously defined report in Business Objects, complete these steps:

1. Select **Open** from the File menu. The Open dialog appears.
2. Double-click on the name of the report in the appropriate directory to access the report.
3. Select the **Refresh Data** option from the Data menu. The Parameters dialog displays.
4. Enter the parameter values for the report.
5. Click the **OK** button. The refreshed report displays.

Sorting a Report

To sort the content in a report, complete these steps:

1. Select the column containing the data you want to sort.
2. Select the **Sorts** option from the Insert menu.
3. Select the **Ascending**, **Descending**, or **Custom** sub-menu option. The data will then sort accordingly.

Viewing Existing Sorts

Existing sorts may take priority over the sort you want to use. If it looks like your data is not sorting, check if a sort has already been used for the data. To see what sorts are currently being applied to the data, complete these steps:

1. Select the entire report.
2. Select the **Sorts** option from the Format menu. The Sorts dialog displays.
3. Turn the sort off by selecting the sort in the Current Sorts field and clicking the **Remove...** button. The Remove a Sort dialog displays to confirm that you want to remove the sort.
4. Click the **Yes** button. The Sort dialog displays again.
5. Click the **OK** or **Apply** button on the Sort dialog. The report displays with the data sorted.

Using Oracle Discoverer

This section covers Oracle Discoverer. For information about Business Objects, please refer to the **Defining Reports** on page 12-2.

This section includes the following topics:

- **Defining Reports**
- **Running Reports**
- **Editing and Drilling Down in Reports with Oracle Discoverer**

Defining Reports

To define a new report with Oracle Discoverer, complete the following steps:

1. Start up Oracle Discoverer. The Connect to Oracle Discoverer dialog appears.
2. Enter the RDBMS username in the **Username** field.
3. Enter the RDBMS password in the **Password** field.
4. Enter the Oracle instance name in the **Connect** field.
5. Press the **Connect** button. The Workbook Wizard opens.
6. Complete the Workbook Wizard: Step 1 Dialog:
 - Click the **Create a new workbook** button to define a report. The 'How do you want to display the results?' section now appears on the dialog.
 - Click one of the following four buttons: **Table**, **Crosstab**, **Page-detail Table**, or **Page-detail Crosstab**.
Note: Please refer to the Oracle Discoverer documentation for information about these buttons.
 - Click the **Next** button.
7. Complete the Workbook Wizard: Step 2 dialog to select the content for your report:
 - Select specific information from the Available list.
 - Click the button with the **arrow** pointing to the right. The selected item moves to the Selected field. Repeat this process until you have all of the desired information.
 - Click the **Next** button.
8. Complete the Workbook Wizard: Step 3 dialog appears to arrange how the items are displayed in your report.
 - Click on the column item and drag it to the desired location.
 - Click the **Next** button.
9. Complete the Workbook Wizard: Step 4 dialog to limit the amount of data in your report by applying a filter. For additional information on Conditions, please refer to the Oracle Discoverer documentation.
 - To create a new condition, click the **New...** button. The New Condition dialog displays.
 - Enter a name for the condition in the **Name** field, or select the **Generate name automatically** checkbox to let Oracle Discoverer name it.
 - Enter a description of the condition in the **Description** field.
 - Select the type of condition in the **Condition** drop-down menu.
 - Select the value(s) in the **Value(s)** drop-down menu.

- Optionally, you can view, edit, and delete existing conditions.
 - Click the **OK** button. The Workbook Wizard: Step 4 dialog displays again.
 - Click the **Next** button.
10. Complete Workbook Wizard: Step 5 dialog to define a sort to arrange the data in your report in a particular order.
 - Select your sort order from the **Add** drop-down menu. The selected sort criteria displays in the field above.
 - In the **Direction** column, select how the data should be sorted, such as ascending or descending order.
 - Click the **Next** button.
 11. Complete the Workbook Wizard: Step 6 dialog to view, edit, delete, and create new calculations for individual items in your report. Please refer to the Oracle Discoverer documentation for more information about calculations.
 - To create a new calculation, click the **New...** button. The Edit Calculation dialog displays.
 - Select the corresponding radio button to show **Items** or **Functions** in the field below.
 - Select the item or function to be used in the calculation.
 - Click the **Paste** button. The item or function will display in the Calculation field.
 - Use the buttons below the Calculation field to define the mathematical operation to be performed on the function or item. Mathematical operations include multiplication, addition, and division.
 - Repeat the previous 3 steps until you have completed defining the new calculation.
 - Enter the name of the calculation in the **Name** field.
 - Click the **OK** button. The Workbook Wizard: Step 6 dialog displays again.
 12. Click the **Finish** button. The report displays.

Running Reports

To run a report with Oracle Discoverer, complete these steps:

1. Start up Oracle Discoverer. The Connect to Oracle Discoverer dialog appears.
2. Enter the RDBMS username in the **Username** field.
3. Enter the RDBMS password in the **Password** field.
4. Enter the Oracle instance name in the **Connect** field.
5. Press the **Connect** button. The Workbook Wizard opens.
6. Click the **Open an existing workbook** button. The 'Where is the workbook you want to open?' section now appears on the dialog.
7. Click one of the following four buttons: **My Computer**, **Database**, **Scheduling Manager**, **Recently Used List**. Please refer to the Oracle Discoverer documentation for information about these buttons.
8. Click the **Next** button. The Open dialog appears. The Open dialog is used to access the particular report you want to see.
9. Select the folder in the Look in field. The files within the selected folder display in the field below.

10. Select the report by double-clicking it. Whether or not the Workbook in Other Database Account dialog displays depends on your system configuration.
11. If the dialog does display, select the **Open the workbook in the current database account** radio button. This option accesses the workbook with your username and the Oracle instance you're connected to.
12. Click the **OK** button. The Oracle Discoverer window below displays.
13. Click the **Yes** button to run the query. The Parameter Wizard opens. The Parameter Wizard is used to define the beginning and ending date for the data in your report. The Description field displays a description of the parameters when you click in its field. To enter the parameters for a report, follow these steps.
 - Enter the start date in the **Enter Start date** field.
 - Enter the end date in the **Enter End date** field.
 - Click the **Finish** button. The report opens.

Editing and Drilling Down in Reports with Oracle Discoverer

Oracle Discoverer gives you the capability to change some aspects within the reports. For example, you can edit the column headings in a report. To change the column headings, follow these steps.

Editing Column Headings

To edit column headings:

1. Right-click in the column heading you want to change. A menu displays.
2. Select the **Item Properties...** menu option. The Item Properties dialog displays.
3. In the **Heading** field, enter the desired name of the column heading.
4. Click the **OK** button.
5. Select **Save** from the File menu to save the new column headings.

Please refer to the Oracle Discoverer documentation for more information on Oracle Discoverer editing features.

Drilling Down or Up in Reports

“Drilling down” refers to viewing more detailed information within a report, and “drilling up” refers to viewing more general information. To drill down or up, complete these steps:

1. Select **Drill...** from the Sheet menu. The Drill dialog displays.
2. Select the **Drill Up/Down** radio button. The **Where do you want to drill from?** field auto-fills with the currently selected column name.
3. Select the column or level of detail you want to drill down to in the **Where do you want to drill to?** field.
4. Click the **OK** button.

Please refer to the Oracle Discoverer documentation for more information about drilling features.

Using Oracle BI Publisher

This section covers Oracle BI Publisher. For information about Oracle Discoverer or Business Objects, please refer to **Using Oracle Discoverer on page 12-4** or **Using Business Objects on page 12-2**.

This section includes the following topics:

- **Defining Reports**
- **Running a Report**

Defining Reports

To generate a standard report in Oracle BI Publisher, follow these steps:

1. Make sure the Oracle BI Publisher Server has been started. If not yet started, go to the Oracle BI Publisher site and login.
2. Click the **Reports** tab.

Note: Before you create a new report, you may want to create a new folder to contain the reports to be created. Click the **Create a new folder link** to create a new folder.

3. Click the **Create a new report** link.
4. Specify the report name. A new report icon with the specified name appears on the webpage.
5. Click the **Edit** link of the newly created report.
6. Add a **Description** of the report and define a **Default Data Source**.

Note: Users with Administrator role access can add Data Source values. Make sure that the Oracle BI Publisher administrator has already set up the correct Data Sources.

Setting up the Data Model

7. Click the **Data Model** link on the tree structure. A drop-down opens, displaying all the data sets that have been created.
8. Click the **New** icon to create a new Data Set to be used for the report.
9. Provide the following information:
 - **Name** – Select a value from the drop-down.
 - **Type** – Select the mode type, such as SQL Query, Data Template, Web Service, or XML Feed. Oracle Utilities Network Management reports are defined as Data Templates.
 - Depending on the Type selected, more attributes need to be set up to define where the data will come from. For example, a Data Template data set includes the SQL query used to retrieve the columns and also the output XML structure.

Defining the List of Values

10. Click the **List of Values** link to define a List of Values. This is only necessary if you have a predefined set of values that need to be supplied to a report.

Defining Report Parameters

11. Click the **Parameters** link to define report parameters.
12. Click the **New** icon to create a new report parameter.
13. Provide the following information:

- **Identifier** – This is the name of the parameter. Parameters are referenced in the SQL Query statements, Data Templates etc. through this Identifier.
- **Data Type** – A parameter can only be a String, Integer, Boolean, Date or Float data type.
- **Default Value** - The default value for this parameter.
- **Parameter Type** – A parameter can be any of the following:
 - **Text** – Use this if you need a text box to input the parameter values.
 - **Menu** – Use this if there is pre-defined list of values that can be supplied to the report. A drop-down menu will be available to input values.
 - **Date** – Use this if the parameter is a date. A calendar will be available to input values. This ensures that only valid dates can be entered.
 - **Hidden** – Use this if the user does not need to see the actual value of the parameter.
- **Display Label** - The label to display for this parameter.
- Other attributes may need to be setup depending on the Parameter Type selected.

Defining Layouts

14. Click the **Layouts** link to define the templates that can be used on the report.
15. Click the **New** icon to create a new layout.
16. Provide the following information:
 - **Name** - Enter a name for the layout.
 - **Template** - Select a template from the drop-down list of available template files for this report.

Note: To add a new template, click the Layouts link and upload templates from the directory folder using the Browse and Upload buttons.
 - **Template Type** - The example reports provided have corresponding RTF templates. However, there are other template types that available (e.g., PDF, Excel, XML, etc.).
 - **Output Format** - The output format to use.

Save

17. Click **Save** to commit your changes.

Once you've defined a new report, you can run the report to see the output.

Running a Report

To run a previously defined report in Oracle BI Publisher, complete these steps:

1. Click the Reports tab. Go to the reports folder of the report you want to run.
2. Click the **View** link to run the report. The output is always based on the following:
 - **Parameters** – There is a section on the page where the user can input parameter values. It is always populated with the default values (if defined).
 - **Template** – There is a drop-down list of the available templates for the report. The report is always presented in the template currently selected by the user.

Note: You can click the **View** button again at any time to rerun the report again.

- When the page has completely loaded in the web browser, click the **Export** button to save the output. Depending on the selected template, a related application will be launched (e.g., MS Word will be launched for an RTF template).

Trouble Reporting Reports

The Oracle Utilities Network Management System – Trouble Reporting module gathers pertinent information about completed outages from the Oracle Utilities Business Intelligence Data Warehouse and calculates performance measures of the distribution system. The information gathered consists of historical data from various areas such as causes, devices, outage times, call details, crew details, and customer details. In addition to reports of trouble-related information, Trouble Reporting includes reports of performance measures based on reliability indices.

This section describes the following reports:

- **Outage Summary**
- **Critical Customers Outages**
- **Daily Trouble Report**
- **Device Outage History**
- **Sustained Outage Summary**
- **Recurring Device Outages**
- **Reliability Indices Reports**

Outage Summary

The Outage Summary reflects outage causes while displaying the number of customer interruptions and customer minutes of duration. You can organize it by company or region. Each row displays a cause, while the columns display the report categories.

The Outage Summary displays the following columns:

- The **Company** column contains the name of the company that serves the customer.
- The **Outage Cause** column contains the primary cause of the outage as determined from the drop-down selections in the Oracle Utilities Network Management System – Trouble Management or Oracle Utilities Network Management System – Web Trouble Event Details window. This is useful for filtering, sorting, and analyzing outage causes. The logic used in determining the primary cause is the same as what is used for the **Daily Trouble Report**. The **Outages** column contains the total number of outages during the specified period for the cause in the specified area.
- The **Cust Out** column contains the total number of customers experiencing outages during the specified period for the cause in the specified area.
- The **Customer Minutes Interrupted** column contains the sum of the customers affected multiplied by the outage duration for each outage during the specified period for the cause in the specified area.

Critical Customers Outages

The Critical Customers Outages report displays the duration (in minutes) of the outage for the critical customer. It contains the following columns:

- The **Company** column contains the name of the company that serves the customer.
- The **Region** column contains the name of the region that serves the customer.
- The **Branch** column contains the name of the branch that serves the customer.

- The **Substation** column contains the name of the substation that serves the customer.
- The **Feeder** column contains the name of the feeder that serves the customer.
- The **Per Name** column contains the name of the customer who experienced an outage during the specified period for the specified area.
- The **Customer Minutes Interrupted** column contains the sum of each outage duration (in minutes) during the specified period for the customer.
- The **Medical** column indicates whether the customer is a medical customer.
- The **Key** column indicates whether the customer is a key customer.
- The **Critical** column indicates whether the customer is an emergency customer.

Daily Trouble Report

The Daily Trouble Report displays events on a daily basis. It identifies the crew, hours worked, resolution and primary cause. Each column is organized by the report categories.

This report contains the following columns:

- The **Region** column contains the name of the region where the outage is located.
- The **Branch** column contains the name of the branch where the outage is located.
- The **Substation** column contains the name of the substation where the outage is located.
- The **Feeder** column contains the name of the feeder where the outage is located.
- The **Exclude?** column indicates whether the outage is excluded from the reliability indices calculations (Y = excluded; N = not excluded).
- The **Event #** column contains the system identification number for the outage.
- The **Location of First Call** column contains the address of the first call received for the outage.
- The **Outage Trouble Code** column contains the clues associated with the outage.
- The **Device Name** column contains the name of the interrupting device associated with the outage.
- The **Outage Began Date** column contains the date and time the outage began.
- The **Outage Restored Date** column contains the date and time the outage was restored.
- The **Outage Duration (Minutes)** column contains the duration of the outage (in minutes).
- The **Cust Out** column contains the number of customers affected by the outage.
- The **Remedy** column contains the action take to resolve the outage, as entered in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window.
- The **Event Note** column contains the operations event note associated with the outage.
- The **Crew Contact** column contains the name of the crew leader for the crew associated with the outage, if any.
- The **Crew Dur** column contains the duration between the time the crew accepted the assignment and the time the crew arrived at the outage location (in minutes).
- The **Cause of Outage** column contains the primary cause of the outage as determined from the drop-down selections in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window. This is useful for filtering, sorting, and analyzing outage causes.

The logic used in determining the primary cause is shown in the following table:

Weather	Environment	Vegetation	Foreign Interference	Defective Equipment	Scheduled	Utility Error	Other	Use as Cause of Outage
any	any	any	any	any	selected	any	any	Scheduled
any	any	any	any	any	unselected	selected	any	Utility Error
any	any	any	any	any	unselected	unselected	selected	Other
any	any	any	selected	any	unselected	unselected	unselected	Foreign Interference
any	any	selected	unselected	any	unselected	unselected	unselected	Vegetation
any	any	unselected	unselected	selected	unselected	unselected	unselected	Defective Equipment
any	selected	unselected	unselected	unselected	unselected	unselected	unselected	Environment
selected	unselected	unselected	unselected	unselected	unselected	unselected	unselected	Weather
unselected	unselected	unselected	unselected	unselected	unselected	unselected	unselected	none

- The **Scheduled** column contains the value selected from the Scheduled drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating whether the outage was scheduled or not.
- The **Utility Error** column contains the value selected from the Utility Error drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any utility error associated with the outage.
- The **Other** column contains the value selected from the Other drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any other characteristics associated with the outage.
- The **Foreign Interference** column contains the value selected from the Foreign Interference drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any foreign interference associated with the outage.
- The **Vegetation** column contains the value selected from the Vegetation drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any vegetation conditions associated with the outage.
- The **Defective Equipment** column contains the value selected from the Defective Equipment drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any defective equipment associated with the outage.
- The **Environment** column contains the value selected from the Environment drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any environmental conditions associated with the outage.
- The **Weather** column contains the value selected from the Weather drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any weather conditions associated with the outage.

Device Outage History

The Device Outage History displays the history of outages for a selected device during a selected period. A summarization of the customer interruptions, customer minutes interrupted and number of events for each distinct interrupting device and each distinct interrupting device type is also displayed.

This report contains the following columns:

- The **Device Name** column contains the name of the interrupting device.
- The **Exclude?** column indicates whether the outage is excluded from the reliability indices calculations (Y = excluded; N = not excluded).
- The **Location of First Call** column contains the address of the first call received for the outage.
- The **Outage Began Date** column contains the date and time the outage began.
- The **Outage Restored Date** column contains the date and time the outage was restored.
- The **Customer Interruptions** column contains the total number of customers affected by the outage.
- The **Customer Minutes Interrupted** column contains the sum of the customers affected by the outage multiplied by the outage duration.
- The **Event #** column contains the system identification number for the outage.
- The **Remedy** column contains the action taken to resolve the outage, as entered in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window.
- The **Event Note** column contains the operations event note associated with the outage.
- The **Cause of Outage** column contains the primary cause of the outage as determined from the drop-down selections in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window. This is useful for filtering, sorting, and analyzing outage causes. The logic used in determining the primary cause is the same as what is used for the **Daily Trouble Report** on page 12-10.
- The **Scheduled** column contains the value selected from the Scheduled drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating whether the outage was scheduled or not.
- The **Utility Error** column contains the value selected from the Utility Error drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any utility error associated with the outage.
- The **Other** column contains the value selected from the Other drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any other characteristics associated with the outage.
- The **Foreign Interference** column contains the value selected from the Foreign Interference drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any foreign interference associated with the outage.
- The **Vegetation** column contains the value selected from the Vegetation drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any vegetation conditions associated with the outage.
- The **Defective Equipment** column contains the value selected from the Defective Equipment drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any defective equipment associated with the outage.

- The **Environment** column contains the value selected from the Environment drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any environmental conditions associated with the outage.
- The **Weather** column contains the value selected from the Weather drop-down in the Oracle Utilities Network Management System Trouble Management or Web Trouble Event Details window, indicating any weather conditions associated with the outage.

Sustained Outage Summary

The Sustained Outage Summary displays the total sustained outages and the customers interrupted for a specified period, organized by region.

- This report displays the following columns:
- The **Company** column contains the name of the company where the outages are located.
- The **Region** column contains the name of the region where the outages are located.
- The **Branch** column contains the name of the branch where the outages are located.
- The **Substation** column contains the name of the substation where the outages are located.
- The **Feeder** column contains the name of the feeder where the outages are located.
- The **Outages** column contains the total number of outages in the specified area during the specified period.
- The **Cust Out** column contains the total number of customers experiencing outages during the specified period in the specified area.
- The **Customer Minutes Interrupted** column contains the sum of the customers affected multiplied by the outage duration for each outage during the specified period in the specified area.

Recurring Device Outages

The Recurring Device Outages report identifies interrupting devices that have been associated with a specified number or more sustained and momentary outages. This report displays all device outages for the period requested and is organized by the report categories. A summarization of the information for all of the devices on each distinct feeder is also displayed.

This report displays the following columns:

- The **Company** column contains the name of the company where the outages are located.
- The **Region** column contains the name of the region where the outages are located.
- The **Branch** column contains the name of the branch where the outages are located.
- The **Substation** column contains the name of the substation where the outages are located.
- The **Feeder** column contains the name of the feeder where the outages are located.
- The **Device Type** column contains the device type of the interrupting device on which the outages are located.
- The **Total Outages** column contains the total number of outages on the device during the specified period.
- The **Total Duration** column contains the total duration of outages on the device experiencing outages during the specified period.
- The **Customer Minutes Interrupted** column contains the sum of the customers affected multiplied by the outage duration for each outage on the device during the specified period.

Reliability Indices Reports

The reliability indices (SAIDI, SAIFI, CAIDI, etc.) are calculated values that provide a measure of the reliability of the distribution system. These reports contain three main categories of reports: Sustained Interruptions, Momentary Interruptions, and Sustained and Momentary Interruptions. In each report, each column is organized by report categories.

For more information about reliability indices, refer to the IEEE Std 1366-2003.

Feeder Reports

There are two types of sustained interruptions reports:

- Customers Experiencing Multiple Interruptions (CEMI)
- Average Service Availability Index (ASAI), System Average Interruption Frequency Index (SAIFI), System Average Interruption Duration Index (SAIDI), Customer Average Interruption Duration Index (CAIDI), Customer Average Interruption Frequency Index (CAIFI)

Index Report

The Index report displays the ASAI, SAIFI, SAIDI, CAIDI, CAIFI, MAIFI, MAIFIe, ACI, MSAIFI, CEMI and CEMSMI calculations for a specified period by feeder. (See descriptions of each calculation in the following paragraphs.)

The Index Report displays the following columns:

- The **Company** column contains the name of the company where the outages are located.
- The **Region** column contains the name of the region where the outages are located.
- The **Branch** column contains the name of the branch where the outages are located.
- The **Substation** column contains the name of the substation where the outages are located.
- The **Feeder** column contains the name of the feeder where the outages are located.
- The **ASAI** column contains the Average Service Availability Index value for the feeder. This is the fraction of time that a customer has received power during the specified period.
- The **SAIFI** column contains the System Average Interruption Frequency Index value for the feeder. This indicates how often the average customer experienced a sustained interruption during the specified period.
- The **SAIDI** column contains the System Average Interruption Duration Index value for the feeder. This indicates the total duration of interruption, in minutes, for the average customer during the specified period.
- The **CAIDI** column contains the Customer Average Interruption Duration Index value for the feeder. This represents the average time required to restore service to those customers experiencing sustained interruptions during the specified period.
- The **CAIFI** column contains the Customer Average Interruption Frequency Index value for the feeder. This gives the average frequency of sustained interruptions for those customers experiencing sustained interruptions during the specified period for the specified area. The customer is counted once regardless of the number of times interrupted for this calculation.
- The **MAIFI** column contains the Momentary Average Interruption Frequency Index value for the feeder. MAIFI indicates how often the average customer experienced a momentary interruption during the specified period.
- The **MAIFIe** column contains the Momentary Average Interruption Event Frequency Index value for the feeder. This indicates how often the average customer experienced a momentary interruption event during the specified period. It does not include momentary interruptions immediately preceding a lockout.

- The **ACI** column contains the Average Number of Customers per Interruption value for the feeder. This indicates the average number of customers interrupted for each interruption (sustained or momentary) during the specified period for the specified area.
- The **MSAIFI** column contains the Momentary and Sustained Average Interruption Frequency Index value for the feeder. This indicates how often the average customer experienced a momentary and sustained interruption during the specified period.
- The **CEMI** column contains the Customers Experiencing Multiple Interruptions value for the feeder. This indicates the ratio of individual customers experiencing more than 3 sustained interruptions to the total number of customers served.
- The **CEMSMI** column contains the Customers Experiencing Multiple Sustained and Momentary Interruption Events value for the feeder. This is the ratio of individual customers experiencing more than 3 of both sustained and momentary interruption events to the total customers served. Its purpose is to help identify customer issues that cannot be seen using averages.

Indices by City

There is also a report that displays all of the Indices calculations for a specified period by city, state and country rather than by feeder.

This report displays the following columns:

- The **City** column contains the name of the city where the outages are located.
- The **CEMI** column contains the Customers Experiencing Multiple Interruptions value for the city.
- The **ASAI** column contains the Average Service Availability Index value for the city.
- The **SAIFI** column contains the System Average Interruption Frequency Index value for the city.
- The **SAIDI** column contains the System Average Interruption Duration Index value for the city.
- The **CAIDI** column contains the Customer Average Interruption Duration Index value for the city.
- The **CAIFI** column contains the Customer Average Interruption Frequency Index value for the city.
- The **MAIFI** column contains the Momentary Average Interruption Frequency Index value for the city.
- The **MAIFIe** column contains the Momentary Average Interruption Event Frequency Index value for the city.
- The **ACI** column contains the Average Number of Customers per Interruption value for the city.
- The **MSAIFI** column contains the Momentary and Sustained Average Interruption Frequency Index value for the city.
- The **CEMI** column contains the Customers Experiencing Multiple Interruptions value for the city.
- The **CEMSMI** column contains the Customers Experiencing Multiple Sustained and Momentary Interruption Events value for the city.

Using the Oracle Utilities Business Intelligence Graphical Portals and Zones

Oracle Utilities Business Intelligence provides a robust tool for remote, near-real-time monitoring of critical distribution operations processes and decision support for day-to-day operations and major events. Presentation, navigation, and control of information are managed in a way that makes sense to the business user. Access buttons permit navigation to different portals containing information zones about events, crews, calls, devices, and customers. User-driven data slicing and drill-down is provided for most information zones. Other access buttons provide a mechanism for the user to drill down to different levels of control zone hierarchy or select geographical/regional display of the data.

General installation, configuration, and use of Oracle Utilities Business Intelligence are covered in the Oracle Utilities Business Intelligence documentation. As an addendum to that guide, we are documenting here the sample Oracle Utilities Network Management System Business Intelligence portals and zones which are provided. Users can configure new zones and edit zones as described in the Oracle Utilities Business Intelligence documentation.

Business Intelligence Login Screen

Access the Oracle Utilities Business Intelligence login window by entering the appropriate URL web address. The Oracle Utilities Business Intelligence intro screen opens.

To log in to Business Intelligence, complete these steps:

1. Enter your user name in the User Id field.
2. Enter your password name in the Password field.
3. Click the **Login** button. After you log in, the default window opens.

Navigating in Business Intelligence

A menu bar appears on the left-hand side of the window. Click the menu bar to open the menu.

Move the mouse pointer over the NMS Analytics menu item to display the sample Oracle Utilities Network Management System portals that are available.

Each of the items in the sub-menu is a **portal** containing information related to that topic. Each portal contains one or more **zones** that present specific data for that topic. Different zones may display the same data, but the data may appear in a different format.

The remainder of this document describes each of the available portals and the zones contained in each portal. Available portals are:

- **OMS Executive Overview Portal**
- **Current Outages By Operating Region Portal**
- **Customer Restoration Portal**
- **Outage Analysis Portal**
- **Outages By Political Boundary Portal**
- **Feeder Performance Portal**
- **Sustained Reliability Limits Portal**
- **Monthly Reliability Limit Portal**
- **Current Feeder Lockouts Portal**
- **Current Feeder Lockouts Portal**
- **Momentary Reliability Limit Portal**

- **Wire Down Event Portal**
- **Feeder Delivered Load Portal**
- **Historical Storms Portal**

OMS Executive Overview Portal

The Executive Overview Portal provides the following zones:

- **Critical Customer Overview Zone**
- **Current Customers Out Zone**
- **Current City Outage Summary Zone**
- **Current OMS Overview Zone**
- **Recent Call Volume Zone**

Critical Customer Overview Zone

This zone lists each type of critical customer configured in the model, along with a counter and a red/yellow/green stoplight indicator for the number currently out of service.

Current Customers Out Zone

This zone displays a pie chart of current outages by control zone branch (the third highest grouping in the control zone hierarchy).

Current City Outage Summary Zone

This zone shows a pie chart of current outages by city.

Current OMS Overview Zone

This zone shows a red/yellow/green stoplight and a counter of the total number of customers out of service, the number of events, and the current SAIDI minutes.

Recent Call Volume Zone

This zone shows a graph of the recent hourly call volume.

Current Outages By Operating Region Portal

The Current Outage by Operating Portal provides the following zones:

- **Call List Zone**
- **Completed Event List Zone**
- **Customer List Zone**
- **Customer Summary Zone**
- **Event List Zone**
- **Event Summary Zone**
- **Outage Summary Zone**

Call List Zone

This zone shows a list of all callers, phone numbers, and call dates/times for a selected event.

Completed Event List Zone

This zone shows a list of completed events, including:

- event number
- event state
- control zone branch
- substation
- feeder
- duration
- number of customers affected
- outage device

Customer List Zone

This zone displays a list of customers affected for a selected event.

Customer Summary Zone

This zone displays a pie chart of current events by control zone branch (the third highest grouping in the control zone hierarchy).

Event List Zone

This zone shows a list of current events, including:

- event number
- event state
- control zone branch
- substation
- feeder
- number of customers affected
- duration
- outage device

Event Summary Zone

This zone displays a pie chart of current customers out by control zone branch (the third highest grouping in the control zone hierarchy).

Outage Summary Zone

This zone displays a list of outage summaries by control zone, including:

- control zone company
- control zone region
- control zone branch
- number of current customers interrupted
- number of current events
- number of current calls

Customer Restoration Portal

The Customer Restoration Portal provides the following zones:

- **Estimated Restoration Zone**
- **Historical Call List Zone**
- **Historical Customer List Zone**
- **Historical Event List Zone**
- **Storm Progress and Estimated Restoration Zone**
- **Summation of Customers Restored and Still Out Zone**

Estimated Restoration Zone

This zone shows a graph of hourly estimated restoration performance.

Historical Call List Zone

This zone shows a list of calls for a selected event.

Historical Customer List Zone

This zone shows a list of customers affected by a selected event.

Historical Event List Zone

This zone shows a list of events for a selected calendar month, including:

- event state
- control zone branch
- substation
- feeder
- outage device type
- event number
- duration
- number of affected customers
- CMI
- user-defined fields

Storm Progress and Estimated Restoration Zone

This zone displays an hourly graph of total customers out and interrupted.

Summation of Customers Restored and Still Out Zone

This zone shows an hourly graph of customers restored vs. customers still out.

Outage Analysis Portal

The Outage Analysis Portal provides the following zones:

- **Average Device Restoration Zone**
- **CMI Summary by Outage Cause**
- **Customers by Device Type**
- **Customers out over 8 hours Zone**
- **Outages by Device Type Zone**

Average Device Restoration Zone

This zone shows a pie chart of average restoration times by outage device type.

CMI Summary by Outage Cause

This zone shows a pie chart of CMI by outage cause.

Customers by Device Type

This zone shows a pie chart of customers out by outage device type.

Customers out over 8 hours Zone

This zone shows a graph of customer outage durations by hour.

Outages by Device Type Zone

This zone is a pie chart of the number of outages by device type.

Outages By Political Boundary Portal

The Outage by Political Boundary Portal provides the following zones:

- **City Estimated Restoration Performance Zone**
- **Current City Outage Summary**

City Estimated Restoration Performance Zone

This zone displays a graph of hourly outage restoration performance by city.

Current City Outage Summary

This zone shows a pie chart of current outages by city.

Feeder Performance Portal

The Feeder Performance Portal provides the following zones:

- **Feeder Performance Zone**
- **Worst Performing Feeder Pie Chart Zone**
- **Worst Performing Feeder Pie Chart Zone**

Feeder Performance Zone

This zone lists each feeder, including:

- SAIDI
- Company

- Region
- Branch
- Substation
- feeder name

Worst Performing Feeder Pie Chart Zone

This zone displays a pie chart of the worst performing feeders.

Worst Performing Feeders Zone

This zone lists the 10 worst performing feeders, including:

- feeder name
- SAIDI minutes
- percentage of the total SAIDI minutes
- rank

Sustained Reliability Limits Portal

The Sustained Reliability Portal provides the following zones:

- **ASAI Zone**
- **Accumulating SAIDI Minutes Zone**
- **Accumulating SAIFI Outages Zone**
- **CAIDI Zone**
- **SAIDI Zone**
- **SAIFI Zone**

ASAI Zone

This zone displays a green/yellow/red stoplight indicator with the ASAI calculation and the CMI for the month.

Accumulating SAIDI Minutes Zone

This zone displays a graph of the SAIDI, SAIDI limit, YTD SAIDI, and YTD SAIDI limit by month.

Accumulating SAIFI Outages Zone

This zone displays a graph of the SAIFI, SAIFI limit, YTD SAIFI and YTD SAIFI limit by month.

CAIDI Zone

This zone displays a graph of the CAIDI by month.

SAIDI Zone

This zone displays a green/yellow/red stoplight, along with the SAIDI minutes and SAIDI limit for the year.

SAIDI stands for system average interruption duration index. This index is commonly referred to as Customer Minutes of Interruption or Customer Hours, and is designed to provide information about the average time the customers are interrupted. In words, the definition is:

$$\text{SAIDI} = \frac{\sum \text{Customer Interruption Durations}}{\text{Total Number of Customers Served}} \quad (\text{A BIC } 3)$$

To calculate the index, use the following equation:

$$\text{SAIDI} = \frac{\sum r_i N_i}{N_T} \quad (\text{A BIC } 4)$$

SAIFI Zone

This zone displays a green/yellow/red stoplight, along with the SAIFI outages and SAIFI limit for the year.

SAIFI stands for system average interruption frequency index (sustained interruptions). The system average interruption frequency index is designed to give information about the average frequency of sustained interruptions per customer over a predefined area. In words, the definition is:

$$\text{SAIFI} = \frac{\text{Total Number of Customer Interruptions}}{\text{Total Number of Customers Served}}$$

The index is calculated using following equation:

$$\text{SAIFI} = \frac{\sum N_i}{N_T}$$

Monthly Reliability Limit Portal

The Monthly Reliability Portal provides the following zones:

- **Monthly ASAI Zone**
- **Monthly CAIDI Zone**
- **Monthly SAIDI Zone**
- **Monthly SAIFI Zone**

Monthly ASAI Zone

This zone displays a green/yellow/red stoplight, along with the ASAI and ASAI limit for the month.

Monthly CAIDI Zone

This zone displays a green/yellow/red stoplight, along with the CAIDI and CAIDI limit for the month.

Monthly SAIDI Zone

This zone displays a green/yellow/red stoplight, along with the SAIDI and SAIDI limit for the month.

Monthly SAIFI Zone

This zone displays a green/yellow/red stoplight, along with the SAIFI outages and SAIFI limit for the month.

Current Feeder Lockouts Portal

The Current Feeder Lockouts Portal provides the following zones:

- **Current Feeder Lockout by Region Zone**
- **Current Feeder Lockout by Region Pie Chart Zone**

Current Feeder Lockout by Region Zone

This zone displays a list of feeder lockouts, including:

- company
- region
- branch, substation
- feeder name
- event state
- duration
- user-defined measure
- begin date/time

Current Feeder Lockout by Region Pie Chart Zone

This zone displays a pie chart of the number of feeder lockouts by region.

Momentary Reliability Limit Portal

This portal provides the following zones:

- **MAIFI Zone**
- **MAIFIE Zone**

MAIFI Zone

This zone shows a graph of the MAIFI by month.

MAIFIE Zone

This zone shows a graph of the MAIFIE by month.

Wire Down Event Portal

The Wire Down Event Portal provides the following zones:

- Active Wire Down Call List Zone
- Current Events with Wires Down Calls List Zone
- Events with Wire Down Calls Zone

Active Wire Down Call List Zone

This zone shows the wire down calls for a selected event.

Current Events with Wires Down Calls List Zone

This zone shows a list of current events with wires down, including:

- event state
- branch
- substation
- feeder
- device type
- event number
- duration
- number of customers
- CMI
- user-defined field

Events with Wire Down Calls Zone

This zone displays a graph of events with wire down calls by hour.

Feeder Delivered Load Portal

The Feeder Delivered Load Portal provides the following zones.

- Smallest Feeder Capacity Margin
- Greatest Feeder Peak Delivered Load
- Feeder Load Detail
- Feeder Delivered Load

Smallest Feeder Capacity Margin Zone

When you expand the Smallest Feeder Capacity Margin zone, the following columns are displayed:

- Calculated Capacity Margin
- Feeder Name
- 3 Phase Amp (maximum 3 Phase AMPERE load)
- Breaker Limit

Greatest Feeder Peak Delivered Load Zone

This zone displays the top 20 Feeders with corresponding Peak Load KVA.

Feeder Load Detail Zone

When you expand the Feeder Load Detail zone., the maximum values for KVA, KW, KVAR, AMP, Feeder Voltage are displayed.

Feeder Delivered Load Zone

When you expand the Feeder Delivered Load zone, the average KVA, KW, KVAR, and AMP for each hour are plotted in the zone.

Historical Storms Portal

The Historical Storms Portal provides the following zones:

- Historical Storms Summary
- Historical Storm – Outages By Type
- Historical Storm – Outages By Operating Region
- Storm Outages List

Historical Storms Summary Zone

This zone displays the list of historical storms. Other zones in this portal display information for the storm selected in this zone. Following columns are displayed:

- Storm Name
- Start Date
- End Date
- Storm Type
- Storm Level
- # of Outages

Historical Storm – Outages by Operating Region

This zone displays a count of outages that are part of the selected storm, sliced by geographic region.

Historical Storm - Outages By Type

This zone displays a count of outages that are part of the selected storm, sliced by outage type.

Storm Outages List

This zone displays a list of outages that are part of the selected storm. Following columns are displayed:

- Event Number
- Branch
- Substation
- Feeder
- Start Date
- Start Time
- Est. Restore Date
- Est. Restore Time
- Actual Restore Date
- Actual Restore Time

Chapter 13

SCADA Extensions

This chapter covers Oracle Utilities Network Management System – SCADA Extensions, including the following topics:

- **Overview**
- **SCADA Measurements**
- **Using SCADA Features**
- **Using the SCADA Summary**
- **Understanding SCADA Information in the Viewer**
- **Using the SCADA Alarms List**
- **Using SCADA Control Tool Features**
- **Switching Management SCADA Integration**

Overview

SCADA Extensions offers extended functions that enhance the capabilities of the Work Agenda, Viewer, Control Tool, and Oracle Utilities Network Management System – Switching Management applications. It also provides SCADA Summary, a window to display information about mapped SCADA measurements. These extended functions incorporate real-time data from a Supervisory Control and Data Acquisition (SCADA) system.

Oracle Utilities Network Management System SCADA Extensions is required in order to display any SCADA data in Oracle Utilities Network Management System, whether it is through the Oracle Utilities Network Management System – SCADA ICCP Block 1, 2, and 5 Adapter interface or a custom interface. The interface itself is a separate component from the Oracle Utilities Network Management System and Oracle Utilities Network Management System SCADA Extensions.

There are two basic types of SCADA interfaces employed. A one-way interface provides Oracle Utilities Network Management System with real time values for SCADA digital and analog measurements as well as quality codes, tags, and alarms. A two-way interface also allows the remote control of SCADA devices from within Oracle Utilities Network Management System.

SCADA Measurements

There are three possible types of SCADA measurements that Oracle Utilities Network Management System SCADA Extensions can display:

- **Analog** - Numeric measurements of the distribution system operating conditions at SCADA devices, such as amps, kVAR, and volts.

- **Status** - Binary values, such as OPEN/CLOSE and ON/OFF. Status values related to switches are mapped into the topological status of switchable devices that affect the energization of the distribution model. Other status values, such as reclose, enabled, loop scheme indication, lightning mode, and fault indicators, are displayed as text pairs of symbols.
- **Digital** - Whole-integer value measurements indicating the state of the device such as tap positions or counters. The Oracle Utilities Network Management System SCADA ICCP Block 1, 2, and 5 Adapter does not currently support digital whole-integer measurements. However, these values can be available if converted through a custom adapter into engineering values.

Quality Codes

Quality codes provide information about the quality of the measurement coming from the SCADA system. Examples may include held, suspect, not valid, telemetered, calculated, entered, estimated, abnormal, “off scan”, “SCADA error”, and “tag on”. Additionally there are quality codes that may be applied to a SCADA measurement from the Oracle Utilities Network Management System applications. These include alarm inhibited and manually overridden.

Quality codes that may be configured to be supplied by the Oracle Utilities Network Management System SCADA ICCP Block 1, 2, and 5 Adapter include held, suspect, not valid, telemetered, calculated, entered, estimated, and abnormal.

Using SCADA Features

There are six primary locations where SCADA information can be accessed in Oracle Utilities Network Management System:

- SCADA device operations that result in customers out appear as real outage events on the trouble related views of the Work Agenda in the same manner as outages that were generated by call information except that they are automatically confirmed and appear immediately as real outages. These operations are also included on the Device Operations List on the Work Agenda.
- The SCADA Summary provides the current values and qualities of all mapped SCADA measurements in Oracle Utilities Network Management System, including both analog and digital measurements. You can filter, sort, modify, and comment on the measurements in the SCADA Summary.
- The Viewer displays dynamically updated SCADA information at or near the corresponding device on the electrical map. The data may be displayed via text annotation or, in the case of status and digital values, symbol changes. SCADA information that may be displayed on the Viewer includes switch status and other status values, digital values, and analog values, all with quality codes.
- The SCADA Alarms list is an extension of the Work Agenda window and may display various alarm messages that are sent from the SCADA system. You can modify, acknowledge, and comment on measurements on the SCADA Alarms list.
- Any SCADA status values that result in a switch being in its off-nominal state will cause the device to appear in the Abnormal Device Summary.
- Systems with a two-way interface let you perform remote operations (e.g., open/close and tagging) on SCADA devices through an enhanced version of the Control Tool.

Using the SCADA Summary

The SCADA Summary provides the current values and qualities of all mapped SCADA measurements in Oracle Utilities Network Management System. Each row of this summary represents one measurement. There may be multiple unique measurements on one SCADA

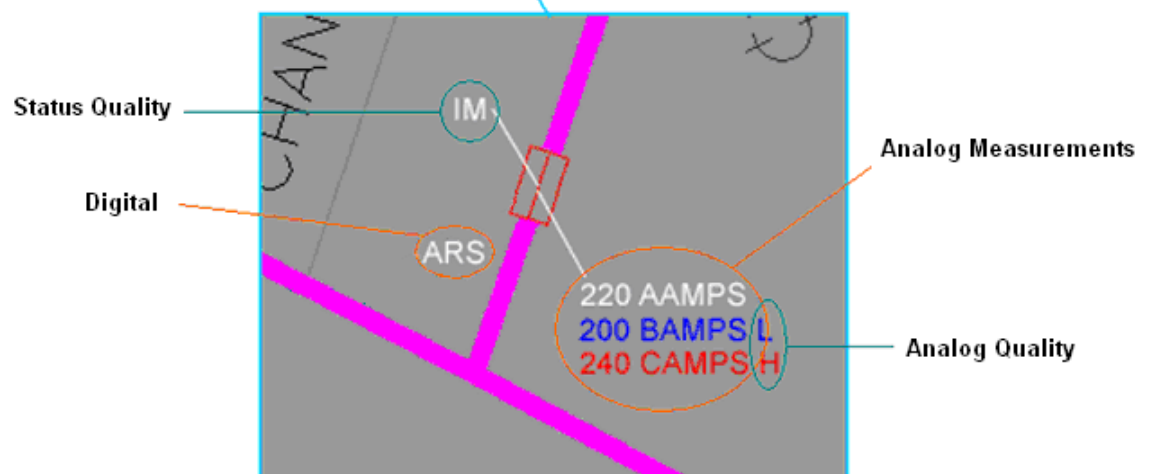
device. SCADA information includes digital and analog measurement values, along with the quality codes and any user comments for each measurement. You can use the summary to view measurement information, manually replace current SCADA values, and inhibit updates.

For information about using the SCADA Summary in the Operator's Workspace, see **Using the SCADA Summary** on page 1-59.

For information about using the SCADA Summary in the Web Workspace, see **SCADA Summary** on page 6-54.

Understanding SCADA Information in the Viewer

Oracle Utilities Network Management System SCADA Extensions provides SCADA information in the Viewer in several different ways.



The following table describes how SCADA information may appear in the Viewer window.

Data	Description	Example
Switch Status	Switch status information (i.e., open or closed) received from SCADA is dynamically updated in the Viewer. Status symbology is no different than that for typical devices, except that it is based on data received automatically from a SCADA measurement rather than user input.	The green, circled device in the previous figure is the symbol for a device open for this device type.
Digital Measurements	Digital measurements (e.g., tap position, auto reclose suppression, ground fault) received from SCADA are dynamically updated. These measurements are displayed as a letter code or symbol next to the SCADA device. There can be several digital measurement indicators listed.	In the previous figure, the SCADA measurement is indicated as being in auto reclose suppression (ARS).
Analog Measurements	Analog measurements received from SCADA are dynamically updated. These measurements are displayed in the Viewer next to the associated SCADA device. Several unique measurements can be listed. When a new measurement is received, it replaces the current measurement.	In the previous figure, three analog measurements are received for A phase, B phase, and C phase - 220 amps, 200 amps, and 240 amps, respectively.
Quality Codes	Quality codes can be attached to the status, digital, and analog measurements. Quality codes provide additional information about the quality of the measurement coming from the SCADA device (e.g., out of scan, inhibited, manual override). A quality code is displayed as a letter code, and more than one can be listed. Quality codes attached to a measurement will display at the end of the measurement. Those attached to a status measurement will display attached to the device itself by a leader line.	In the previous figure, quality codes are attached to the device status ("I" for inhibited and "M" for manually entered, which means manually overridden) and analog measurements ("H" and "L" for high and low limit violations).

Enabling/Disabling SCADA Measurements in the Viewer

You can enable or disable SCADA measurements in the Viewer using the Hide / Display dialog.

To access this dialog in the Web Workspace Viewer, see **Hiding and Displaying Viewer Objects** on page 6-26.

To access this dialog in the Operator's Workspace Viewer, see **Hiding and Displaying Viewer Objects** on page 1-31.

Remote SCADA Operation Warnings

When you perform a remote SCADA device operation in a two-way system, Oracle Utilities Network Management System SCADA Extensions will run certain checks. There are three warnings that you might receive as a result of these checks.

Note: The Oracle Utilities Network Management System SCADA ICCP Block 1, 2, and 5 Adapter controls are limited to switch status direct operate request.

The following table describes the possible remote SCADA operations warnings.

Warning	Description
SCADA Confirmation	When you open or close a SCADA-controlled device, the Look Ahead window opens providing information about the potential results of the operation (see Using the Look Ahead Window on page 1-50). After you view all the required information and choose to proceed, another message box opens, reminding you that a remote operation will take place and asking you to confirm the SCADA-controlled operation.
SCADA Control Action Time-Out	Once you have confirmed that you want to perform a SCADA-controlled device operation, Oracle Utilities Network Management System SCADA Extensions starts a timer. This timer monitors the response to the operation, expecting a "change-of-state" of the device (e.g., open to close). If a change-of-state is not detected from the device before a time-out occurs, Oracle Utilities Network Management System SCADA Extensions generates an alarm displayed in the SCADA Alarms List.
SCADA Error	If errors are detected between Oracle Utilities Network Management System and the SCADA interface, a message box opens informing you of the failed operation. You should report these errors to the system administrator or support personnel.

Note: If you click **Cancel** in the Look Ahead window, Oracle Utilities Network Management System SCADA Extensions will not initiate the remote SCADA operation.

Using the SCADA Alarms List

Note: This section describes the SCADA Alarms List available from the Operator's Workspace Work Agenda. For information on viewing SCADA alarms in the Web Workspace, see **SCADA Alarms List** on page 6-58.

If your system is configured with Oracle Utilities Network Management System SCADA Extensions, the Operator's Workspace Work Agenda will also include a SCADA Alarms list. The SCADA Alarms list displays information about all current alarms and is dynamically updated as alarms are reported. Alarms may include events such as status change, limit violations, and physical problems with the SCADA device. These alarms are associated with a specific device. Through the Oracle Utilities Network Management System SCADA ICCP Block 1, 2, and 5 Adapter, only status change events will appear in the SCADA Alarms list.

This section includes the following topics:

- **Displaying the SCADA Alarms List**
- **Viewing a SCADA Alarm in the Viewer**
- **Acknowledging SCADA Alarms**
- **Silencing SCADA Alarms**
- **Removing SCADA Alarms from the List**
- **Turning Audio Notification On and Off**
- **Preventing a Device from Reporting SCADA Alarms**
- **Canceling an Inhibit**

Displaying the SCADA Alarms List

To access the SCADA Alarms list, select **SCADA Alarms List** from the File menu of the Work Agenda window.

The SCADA Alarms List displays the following fields and buttons:

- The **Date** column contains the date and time the alarm was generated.
- The **Feeder Zone** column contains the name of the feeder zone of the device associated with the alarm.
- The **Feeder** column contains the feeder on which the device in alarm is located.
- The **Device** column contains the identification of the device associated with the alarm.
- The **Description** column contains a description of the alarm.
- The **Attribute** column contains the type of SCADA measurement (e.g., current, voltage).
- The **Value** column contains the last reported measurement value. The value can be status, digital, or analog. For status measurements, typically a value of "0" indicates open and a value of "1" indicates closed. Any special tags placed on the device would be indicated by a digital value.
- The **Quality** column contains the quality codes for the measurement. This is information about the quality of the measurement coming from the SCADA device (e.g., out of scan, inhibited, manual override). Several can be listed.
- The **Unit** column contains the measurement units, if any.
- The **Phase** column contains the phase of the measurement, described as A, B, C, or a combination of phases.
- The **Nominal** column contains the nominal value of the measurement that is in alarm (only for digital).

- The **Limit** column contains the limit an analog measurement violated to generate the alarm.
- The **Point Name** column contains the source for the measurement, as configured in the ANALOG_MEASUREMENTS.source or DIGITAL_MEASUREMENTS.source column in the Oracle Utilities Network Management System database.
- The **Acknowledge** button stops the audio notification for an alarm and acknowledges it.
- The **Silence** button stops the audio notification for an alarm without acknowledging it. Subsequent new alarms will still cause audio notification.
- The **Inhibit Alarm** button prevents updates from SCADA for the particular measurement.
- The **Cancel Inhibit** button removes the “inhibit” quality code from the selected SCADA measurement. This allows updates from SCADA that may generate alarms.
- The **Switch Plan** button will open the switching plan if an alarm is associated with one. If there is no associated switching plan, it will open the last viewed switching plan (see **Managing Switching Plans** on page 14-1).
- The **Clear** button removes the alarm from the SCADA Alarms List.

The **Exit** button closes the SCADA Alarms List window.

Viewing a SCADA Alarm in the Viewer

To view a SCADA alarm in the Viewer window, complete these steps:

1. In the SCADA Alarms List, select the row of the alarm you want to view.
2. Open a Viewer window. For information on opening a Viewer window, see **Using the Operator’s Workspace Viewer** on page 1-16.
3. Click on the **Object Focus** button (target icon) on the Viewer toolbar. Alarms are indicated in the Viewer in several ways. (See **Understanding SCADA Information in the Viewer** on page 13-3.)

Acknowledging SCADA Alarms

To acknowledge a SCADA alarm, complete these steps:

1. In the SCADA Alarms List, select the row of the alarm you want to acknowledge.
2. Click the **Acknowledge** button. The following occurs:
 - The alarm becomes acknowledged.
 - Its audible alarm is silenced.
 - Your user name appears in the Who Ack field.
 - The current date and time appears in the Date Ack field.

Silencing SCADA Alarms

To silence a SCADA alarm, complete these steps:

1. In the SCADA Alarms List, select the row of the alarm you want to silence.
2. Click the **Silence** button. The following occurs:
 - The audio notification for the alarm becomes silent.
 - The alarm is still not acknowledged.
 - Subsequent new alarms will cause the audio notification to sound.

Removing SCADA Alarms from the List

To remove a SCADA alarm from the list, complete these steps:

- Select the row of the alarm you want to silence.
- Click the **Clear** button. The alarm disappears from the list.

Note. You can remove multiple alarms by selecting multiple rows before you click the **Clear** button. Select multiple rows by clicking a row, holding the mouse button, and dragging the pointer over the additional rows.

Turning Audio Notification On and Off

To turn audio notification on or off, click on the Audio Enabled radio button at the top of the Work Agenda window. The audio for the entire system (all alarms) will toggle on or off.

Preventing a Device from Reporting SCADA Alarms

To prevent a device from reporting SCADA Alarms, complete these steps:

1. Select the row of an alarm that belongs to the device you want to inhibit.
2. Click the **Inhibit Alarm** button.
 - The device will not report SCADA alarms until the inhibit is cancelled.
 - An “I” appears next to the device in the Viewer indicating the device is inhibited.
 - An “I” appears in the Quality columns of the SCADA Alarms List and the SCADA Summary.

Note. Inhibiting alarms does not affect the physical SCADA device; it only prevents Oracle Utilities Network Management System SCADA Extensions from reporting an incoming alarm.

Canceling an Inhibit

To cancel an inhibit, complete these steps:

1. Select the row for the alarm.
2. Click the **Cancel Inhibit** button. The device will no longer be prevented from reporting SCADA alarms.

Using SCADA Control Tool Features

If your system has a one-way SCADA interface, you can only receive information about SCADA measurements. If it has a two-way SCADA interface, however, not only can you receive information, but you can also remotely control SCADA devices. The Oracle Utilities Network Management System SCADA ICCP Block 1, 2, and 5 Adapter remote control is limited to direct operate request of switch status.

Use the Control Tool to perform operations on SCADA devices in the exact same manner as you would on non-SCADA devices (see **Performing Device Operations** on page 1-39). However, the buttons on the Control Tool for opening and closing SCADA devices will read **Open SCADA** and **Close SCADA** (instead of simply **Open** and **Close**).

Switching Management SCADA Integration

If you have a two-way SCADA system, you can operate devices as a step when completing a switching plan. Just like a typical switching plan, you can open or close devices by selecting the switching step and clicking the **Complete** button. (For Switching Management in the Operator's Workspace see **Instructing and Completing Switching Steps** on page 14-31. For Web Switching Management, see **Issuing a Switching Sheet** on page 15-33.) With a two-way SCADA system, however, the actual device will be remotely operated. The Oracle Utilities Network Management System SCADA ICCP Block 1, 2, and 5 Adapter controls are limited to switch status.

If any errors occur, Oracle Utilities Network Management System SCADA Extensions generates an alarm displayed in the SCADA Alarms List.

Chapter 14

Switching Management

This chapter describes the Switching Management functionality. It includes the following topics:

- **Managing Switching Plans**
- **Maintaining Safety Documents**

Managing Switching Plans

Oracle Utilities Network Management System - Switching Management allows you to create and implement switching plans as well as maintain safety documents. Switching plans allow you to track proposed switching actions, analyze the results, and implement the plan. You can prepare switching plans, including device-tagging operations, using the Switch Sheet Editor. You can also copy frequently used switching step sequences using switching templates. In cases of an emergency, you can create a record of the operations performed as you go in an emergency switching plan.

Switching plans, switching templates, and safety documents are organized separately in the Work Agenda window. You can access these records to edit the information and perform the switching operations. See **Maintaining Safety Documents** for more information on safety documents.

This section includes the following topics:

- **Understanding Switching Plans**
- **Using the Switch Sheet Editor**
- **Using Web Request**
- **Planned Switching**
- **Emergency Switching**
- **Event Associations**
- **Working with Switching Templates**
- **Using the Miscellaneous Log**
- **Viewing Switching Lists**

Understanding Switching Plans

Planned switching refers to switching sequences that are prepared ahead of time. Emergency switching refers to switching sequences that are prepared and implemented when overloads or unplanned outages occur. In planned switching, switching steps are created and reviewed in a Viewer in study mode prior to being completed in real-time.

This section includes the following topics:

- **Switching Plan States**
- **Switching Plan Modes**

Switching Plan States

A switching plan passes through different phases during the creation and completion of the plan. These phases are represented by “states” which follow a logical sequence and determine what you can do with a switching plan. The state of the switching plan should not be confused with the state of individual switching steps within the switching plan.

You can view the state of a switching plan in the Status column on the Switching Plan List (in the Work Agenda window) or in the Status field at the top of the Switch Sheet Editor. The following table describes the different switching plan states and their equivalent short form versions, which are displayed within the Status column of the Switching Plan List.

State	Description
New (New)	A user started a new Switching Plan from the Environment Manager's New Switching Plan button, the Switch Sheet Editor File menu, or the Web Request form. The switching plan is in the process of being created but has not yet been requested.
Requested (Req)	This state is achieved after clicking the Submit Request button from the Switch Sheet Editor or from the Web Request form. The name of the individual who requested the switching operation and their phone number are required in order to transition to this state. The Requested By and Phone Number fields in the Request section of the Switch Sheet Editor and Web Request form are used to enter this information. The Date field next to the Requested By field on the Switch Sheet Editor indicates when the initial request was made.
Request Rejected (RRej)	A user clicked the Request Rejected checkbox within the Tracking section of the Switch Sheet Editor. The Request Rejection Reason field displays the reason why the request was rejected. At this point, the switching plan can either be deleted or altered and requested again. The resubmission of the request can either be done from the Switch Sheet Editor or the Web Request form.
Prepared (Pre)	A user clicked the Prepared checkbox within the Tracking section of the Switch Sheet Editor. Although not required, all information for the switching plan can be entered prior to clicking the Prepared checkbox.
Checked (Che)	A user clicked the Checked checkbox within the Tracking section of the Switch Sheet Editor. All information for the switching plan should be entered prior to indicating that the plan was checked.

State	Description
Approved (App)	A user clicked the Approved checkbox within the Tracking section of the Switch Sheet Editor. All information for the switching plan should be entered prior to a user approving the plan.
Check Rejected (CRej)	A user clicked the Check Rejected checkbox within the Tracking section of the Switch Sheet Editor. The Check Rejection Reason field contains the reason why the switching plan was rejected. The Prepared By, Checked By, Approved By fields are cleared, requiring that the switching plan be prepared, checked and approved again.
Scheduled (Sch)	A user clicked the Scheduled checkbox within the Tracking section of the Switch Sheet Editor. All information for the switching plan should be entered prior to scheduling the plan. Required fields are the Start Date and Finish Date (ERT) fields, which you can find on the Request section of the Switch Sheet Editor.
Canceled (Can)	A user clicked the Canceled checkbox within the Tracking section of the Switch Sheet Editor. The Cancel Reason field is required to be filled in and contains the reason why the switching plan was canceled. The Scheduled By fields are cleared, requiring that the switching plan be scheduled again.
Issued (Iss)	A user clicked the Issued checkbox within the Tracking section of the Switch Sheet Editor. All information for the switching plan should be entered prior to a user issuing the plan.
In Progress (Inp)	At least one switching step has been executed in Real Time.
Hold/Pending (Hold)	A user clicked the Hold/Pending checkbox within the Tracking section of the Switch Sheet Editor. This state indicates that a switch plan is on hold. The Hold/Pending By and Date fields are cleared when a switch step is executed in Real Time and the state of the plan goes into "In Progress." The Hold/Pending By and Date fields are cleared when the switching plan is completed as well.
Complete (Comp)	An action was taken for each of the switching steps and a user clicked the Completed checkbox within the Tracking section of the Switch Sheet Editor. This option will only be available in Real Time mode. The Office and Location of Work fields must be filled out before attempting to transition to this state. Once a plan is complete, you cannot edit the plan. This status applies to planned and emergency switching.

Switching Plan Modes

There are two types of modes that apply to switching plans: operating modes and editing modes.

The operating mode establishes whether changes made in the Switch Sheet Editor affect the Real Time or Study plan model. Real Time and Study are the switching plan operating modes. Real Time sets the session to real-time mode, which allows you to make real-time, changes to the state of devices in the system. Study sets the session to study mode, which allows you to make changes without affecting real-time data. You can apply the actions to the steps, but the actions are not applied to the real-time data.

The editing mode establishes which information you can edit and whether it is saved as a switching plan or a template. View Only, Plan Editor, Template Editor and Misc Log are the switching plan editing modes. View Only sets the Switch Sheet Editor window to view-only mode, which allows you to view the switching plan with certain buttons and fields disabled. If another user is already editing a switching plan, the Switch Sheet Editor is automatically set to view-only mode. Plan Editor sets the window to editing mode for the switching plans of type Planned and Emergency. Template Editor sets the window to switching template editing mode. Misc Log sets the window to miscellaneous recording mode.

Using the Switch Sheet Editor

The Switch Sheet Editor allows you to create and edit switching plans.

Opening the Switch Sheet Editor

To access the Switch Sheet Editor, click the **New Switching Plan** button on the Environment Manager or load a switching plan from the Work Agenda Switching Plan List.

A switching plan has six sections:

- **Header Section**
- **Request Section**
- **Contact Section**
- **Tracking Section**
- **Audit Log Section**
- **Steps Section**

The Header section is always visible. The remaining five sections can only be viewed one at a time. You can view specific sections of the Switch Sheet Editor in the following ways:

- Click the tab button under the Header section (e.g., Request) that corresponds to the section you want to view.
- Click the button for the section you want to view from the Switching Plan List in the Work Agenda window.

Switch Sheet Editor Menus

The following table describes the Switch Sheet Editor menu options.

- **File Menu**
 - **New** - allows you to create a template, planned or emergency switching plan.
 - **Copy** - copies the steps from the current plan into a newly created plan. The new plan can be one of the following types: Planned, Emergency or Template. You are asked to select the type of plan on the Sheet Type popup dialog. For Planned and Emergency types, all of the text entry fields are copied except for the date, time and approval fields, which are cleared. For Templates, all text entry fields are cleared except for the Description of Work field.
 - **Save** - saves the changes made to the switching plan.
 - **Save as Template** - saves a copy of the current switching plan as a template that can be used again later. You are asked if you want to formalize the device names in the switching plan steps.
 - **Print** - opens the Print dialog for printing out hard copies of the switching plan.
 - **Delete Job** - deletes the current switching plan. A switch plan can be deleted until it has been approved or scheduled.

- **Exit** - closes the Switch Sheet Editor window.
- *[plan #]* - lists the ten most recently loaded switching plans. Selecting one causes the Switch Sheet Editor to load up that plan. The description of each of the options is built from the switch sheet number, switch sheet type, and the text entered in the Feeders field. Example: “1001 (Planned) FDR_10003”
- **Edit Steps Menu**
 - **Add** - adds a step below the last step.
 - **Insert** - inserts a step above the selected step.
 - **Delete** - deletes the selected step(s).
 - **Move Up** - moves the selected step(s) up one row.
 - **Move Down** - moves the selected step(s) down one row.
 - **Undo** - removes the last change (Delete, Cut or Paste) made to the step(s).
 - **Cut** - marks the selected step(s) within the table as being cut. When not selected, the step will be colored yellow. When cut steps are pasted, they will either be redlined and copied or moved to their newly pasted location.
 - **Copy** - copies the selected step(s).
 - **Paste** - pastes the cut or copied step(s) below the currently selected step. This can be within a different plan from where the steps were cut or copied.
 - **Find Device** - opens a search dialog box that allows you to enter the device you want to search for in the plan steps. You can then choose to replace the found device alias with a new device alias.
 - **Find Text** - opens a search dialog box that allows you to enter the text you want to search for in the plan steps Description column. You can then choose to replace the found text with new text.
- **Actions Menu**
 - **Power Flow Details** - Opens the Power Flow Details window, if Power Flow is installed. For more information, see **Power Flow, Suggested Switching, and Volt/VAr Optimization** on page 16-1.
 - **Power Flow Load Scenario** - Updates the Switch Sheet Steps with the current flow through the device after a close operation or prior to an open action, along with the number of new violations that result from the switching operation for the selected load scenario. This option is only available if Power Flow is installed.
 - **Instruct** - Changes the status of steps from blank to “Instructed” and populates the Instructed By and Instructed Date columns.
 - **Complete** - Changes the status of steps from blank or “Instructed” to “Completed” and populates the Completed Date column.
 - **Abort** - Changes the status of a step from blank or “Instructed” to “Aborted” and populates the Completed Date column without actually performing the switching actions. Use this if a step was never attempted.
 - **Action Failed** - Changes the status of a step from blank or “Instructed” to “Action Failed” without actually performing the step and populates the Completed Date column. Use this if a step was attempted but failed.
 - **Create Gobacks** - Creates a sequence of reversal steps from the selected steps in inverse order. You are asked to either insert the newly created steps or append them to the end of the steps list.

- **Create Gobacks for All** - Creates a sequence of reversal steps from all steps in inverse order. The new steps are added to the end of the steps list.
- **E-Mail Plan...** - Opens an email dialog allowing you to send an HTML version of the switching plan to the list of entered recipients.
- **Reset Study Session** - Allows you to reset the study time Viewer to either a copy of Real Time or what it was when the study session was initiated. It also resets the study-executed steps. Only available in study mode.
- **View Device** - Focuses the Viewer window on the device for the selected step.
- **Save Area** - Saves the coordinates of the VIEW1 Viewer current viewing area with the switching plan. Only one set of coordinates can be saved with a switch plan at any one time.
- **View Area** - Focuses the VIEW1 Viewer on the coordinates that were saved with the switching plan. This button is only enabled after a viewing area has been saved with a switching plan.
- **Tools Menu**
 - **Switching List** - opens the Work Agenda window displaying switching plans in the Switching Plan List.
 - **Template List** - opens the Work Agenda window displaying the switching plan templates in the Switching Templates List.
 - **Create New Safety** - creates a new safety document and associates the safety document with the switching plan. A sub-menu allows you to choose the type of safety document you want to create. Types of safety documents include: Information Note, Warning, Clearance, Hold, Hot Line
 - **Customers Impacted** - generates or loads the saved list of customers impacted by the prerecorded switching plan steps.
 - **Switching Overlaps** - displays any overlaps the switching plan has with other existing switching plans based on the start date, end date, devices and control zones devices are a part of.
- **Mode Menu**
 - **Real Time** - changes to real-time mode, which applies the actions you take to the real-time system.
 - **Study** - changes to study mode, which applies the actions you take to the study system, not the real-time system.
 - **View Only** - changes the window to view only mode. You cannot create or edit switching plans in view only mode. This mode is automatically selected when you try to load a switching plan that is being edited by another user. When this happens, a dialog will be issued indicating that the plan is being placed into the View Only mode.
 - **Plan Editor** - changes to the Switch Sheet Editor, which allows you to create and edit Planned and Emergency switching plans.
 - **Template Editor** - changes to the Switch Template Editor, which allows you to create and edit switching templates.
 - **Misc Log** - changes to the Switch Miscellaneous Log, which is a log that records all real-time actions that have not been recorded in another switching plan.

Header Section

The header section of the Switch Sheet Editor displays general information about the switching plan. The header section displays the following fields and buttons:

- **Plan #** displays a unique number assigned to the switching plan. You can enter a number into this field to open an existing switching plan.
- **Rev** displays the revision number of the switching plan.
- **Type** displays the type of switching plan - Template, Planned or Emergency.
- **Status** displays the state of the switching plan. See **Switching Plan States** on page 14-2.
- **Feeders** displays the list of feeders that are relevant to the switching plan. This is a text entry field and is not auto-populated.
- **Safety Docs** lists the safety documents associated to the switching plan. Each associated safety document number displays in this field. You can double-click on a safety document number to open the Record Safety Dialog. From this dialog, you can open the safety document, disassociate it from the switch plan, or record safety steps into the switching plan.
- **Events** lists the events associated to the switching plan. The event numbers are displayed in this field. The list can have the following types of associations and will be listed in the order of Master, Planned, Forced, Manual and Canceled. See **Event Associations** on page 14-33 for more information.
- The **Revision Status** button is the status button found to the right of the Rev field. You can use this button to increment the revision number of the switch plan. The icon on this button is also used to inform you of when changes are being made to the current revision or whether it is up-to-date. This button cannot be selected or the revision changed in the new, requested and completed states. While in these states, the button's icon will be colored grey.
- The **Add Event** button opens a dialog box that allows you to enter an event number to associate with the switching plan. These events will show up as "Manual" associated events within the Events list.
- The **Rem. Event** button removes the selected event association from the switching plan. This button will only be selectable when "Manual" associated events are selected within the Events list.
- The **Switching Crew List** is used to automate the population of the Instructed To column as steps are instructed and completed. To populate the Instructed To column for an uninstructed step, select the step, then select the crew(s) from the Switching Crew List. As long as event updates are not made to the plan, the crew will remain selected as steps are instructed and completed. As each step is instructed, the Instructed To column for that step will be auto populated. Only when crews are assigned or en route to events associated to the switching plan will they be displayed in this list.
- The **Crew ID** column contains the crew ID of the crew.
- The **Event #** column contains the event number the crew is assigned or en route to.
- The **Contact** column contains the contact name for the crew.
- The **Mobile #** column contains the contact's mobile phone number.
- The **Pager #** column contains the contact's pager number.
- The **ASN/ENR Date** column contains the date and time of when the crew was assigned or placed en route to the event shown in the Event # column.
- The **Status** column indicates whether the crew is assigned or en route to the event shown in the Event # column.
- The **Type** column contains the crew's type (e.g., Trouble).

- The **Refresh Crew List** button refreshes the Switching Crew List. This will also clear the selections made to this list. If crews were selected, then they will have to be reselected.

Just below the Refresh Crew List button of the Header section is a **Hide Crew List/Show Crew List** button. Pressing this button toggles the display of the crew list table in the Header section.

Request Section

The Request section of the Switch Sheet Editor contains information about the person or department requesting the work. Logic is built into these fields (e.g., start date must be before the finish date). The Request section displays the following fields and buttons:

- **Requested By** displays the person requesting the switching order. This field is required prior to submitting the request.
- **Requested Date** displays the date and time of when the user selected the **Submit Request** button for the first time. This date will not be changed if the plan is rejected and re-requested.
- The **Submit Request** button changes the status of the switching plan from New to Requested and populates the Requested Date field.
- **Phone Number** displays the phone number of the person requesting the switching order. This field is required prior to submitting the request.
- The **Charge Number** fields are used to enter charge numbers that can then be used by the switching plan preparer and/or executor.
- **Office** displays the office responsible for the switching plan. Required prior to completing a switching plan.
- **Location of Work** displays the street address or specific location for the switching operation. Required prior to completing a switching plan.
- **Start Date** displays the date and time the switching work is scheduled to begin. This date will be the Start Date given to the master event associated to the switching plan after it has been scheduled. Required when scheduling a switching plan. Enter the time in military time format (e.g., 13:00 = 1 P.M.).
- **Finish Date (ERT)** displays the date and time the switching work is scheduled to end. Required when scheduling a switching plan. This date will be the Est Restore Time given to the master event associated to the switching plan after it has been scheduled. The finish date must be later than the start date, and you must enter the finish time for the date to be valid. Enter the time in military time format (e.g., 13:00 = 1 P.M.).
- The **Update ERT** button is used to update the ERT for the master event associated to the switching plan. This option is available after the plan has been scheduled.
- **Alt. Start Date** displays the alternate date and time the switching work could begin. Enter the time in military time format (e.g., 13:00 = 1 P.M.). The alternate start date must be later than the start date.
- **Alt. Finish Date** displays the alternate date and time the switching work could end. The alternate finish date must be later than the alternate start date. Enter the time in military time format (e.g., 13:00 = 1 P.M.).
- **Substation** displays the substation where the switching operation takes place.
- **Device** displays the device being worked on (not necessarily the device being switched). This device will be given to the master event associated to the switching plan after the plan has been scheduled.
- The **Get Selected** button can be used to populate the Device text field with a device alias selected from the Viewer.
- **Voltage** displays a drop-down menu that lists the nominal device voltage of the device(s) involved in the switching plan.

- **Description of Work** displays a general description about what the switching plan should try to accomplish.
- The **Exit** button closes the Switch Sheet Editor window.

Contact Section

The contact section of the Switch Sheet Editor contains information relating to the crew, a requesting customer and the planned events that the switching plan may create. The Contact section displays the following fields and buttons:

- **Planned Operations Event Note** displays the operations event note related to the planned event(s), which is used to pass information from operations staff to call takers and other people outside of the control room.
- **Event Note Last Updated** displays the date and time the planned operations event note was updated. Use the **Send/Update Event Note** button to update the date and time and send the note to the external system(s) that may be using the operations event note.
- The **Send/Update Event Note** button saves or updates the operations event note for the switching plan. The date and time in the Planned Operations Event Note - Last Updated field is updated with the current date and time. The note is sent to external system(s) such as the customer information and call taking system that may be using the operations event note.
- The **Delete Event Note** button clears the **Planned Operations Event Note** field and updates the Event Note Last Updated field. The note is permanently deleted from the system.
- **Crew Will Switch** is a toggle that allows you to indicate whether the requesting crew will perform the switching activities.
- **Crew Will Restore** is a toggle that allows you to indicate whether the requesting crew will restore the outage associated with the switching activities.
- **Grounds Required** is a toggle that allows you to indicate whether the crew is required to place grounds on the appropriate devices or not.
- **Contact** displays the lead crew contact for this switching order.
- **Phone** displays the telephone number for the lead crew contact.
- **Pager** displays the pager number for the lead crew contact.
- **Fax** displays the fax number for the lead crew contact.
- **Customer Requested** is a toggle that allows you to indicate whether a customer requested the switching sequence. The toggle is for informational purposes. Once selected, the Customer Name and Customer # fields become editable.
- **Customer Name** displays the name of the customer requesting the interruption.
- **Customer #** displays the telephone number of the customer requesting the interruption.
- **Customer Interrupted** is a toggle that allows you to indicate that a customer has been interrupted. This toggle button is automatically set when there are steps that cause customers to be impacted. This is determined when you select the **Customers Impacted** option from the Tools pull-down menu. This toggle button is automatically unselected if the **Customers Impacted** option has been selected and it was determined that no customers will be impacted by the switching plan.
- The **Exit** button closes the Switch Sheet Editor window.

Tracking Section

The tracking section of the Switch Sheet Editor contains information about who approved or rejected the switching plan and the status of the plan. The Tracking section displays the following fields and buttons:

- **Prepared By** displays the user name of who prepared the switching plan. Click the check box to populate the Prepared By field. The current date and time are also recorded in the Prepared Date field. The switching plan transitions to the state of Prepared.
- **Checked By** displays the user name of who checked the switching plan. Click the check box to populate the Checked By field. The current date and time are also recorded in the Checked Date field. The switching plan transitions to the state of Checked.
- **Approved By** displays the user name of who approved the switching plan. Click the check box to populate the Approved By field. The current date and time are also recorded in the Approved Date field. The switching plan transitions to the optional state of Approved.
- **Scheduled By** displays the user name of who scheduled the switching plan. Click the check box to populate the Scheduled By field. The current date and time are also recorded in the Scheduled Date field. The switching plan transitions to the state of Scheduled. At this point, the Master planned switching event is created as well.
- **Issued By** displays the user name of who issued the switching plan. Click the check box to populate the Issued By field. The current date and time are also recorded in the Issued Date field. The switching plan transitions to the state of Issued.
- **Hold/Pending By** displays the user name of who placed a hold on the switching plan. Click the check box to populate the Hold/Pending By field. The current date and time are also recorded in the Hold/Pending Date field. The switching plan transitions to the state of Hold/Pending.
- **Completed By** displays the user name of who determined the switching plan as being complete. Click the check box to populate the Completed By field. The current date and time are also recorded in the Completed Date field. The switching plan transitions to the state of Completed.
- **Request Rejected By** displays the user name of who rejected the requested switching plan. Click the check box to populate the Request Rejected By field. The current date and time are also recorded in the Request Rejected Date field. The switching plan transitions to the state of Request Rejected. Rejecting a requested switching plan requires the plan to be requested again.
- **Request Rejection Reason** displays the description of why the switching plan was rejected.
- **Check Rejected By** displays the user name of who rejected the checked switching plan. Click the check box to populate the Check Rejected By field. The current date and time are also recorded in the Check Rejected Date field. The switching plan transitions to the state of Check Rejected. Rejecting a checked switching plan requires the plan to be prepared and checked again.
- **Check Rejection Reason** displays the description of why the switching plan was rejected.
- **Canceled By** displays the user name of who canceled the Scheduled switching plan. Click the check box to populate the Canceled By field. The current date and time are also recorded in the Canceled Date field. The switching plan transitions to the state of Canceled. The Master event associated to the switching plan transitions to a Canceled state. Canceling a scheduled switching plan requires the plan to be scheduled again.
- **Cancel Reason** displays the description of why the switching plan was canceled. A reason is required before the switching plan can be canceled. This reason is also recorded in the Post-Completion Edit Log for the canceled Master event in the Event Details display.
- The **Exit** button closes the Switch Sheet Editor window.

Audit Log Section

The audit log section contains a list of status changes the plan has gone through since it was created. An entry will be added to the log when the revision of the plan has changed and also when the customer impacted list has been modified and saved to the database. The text “Customers Impacted List saved” will be displayed in the **Comment** column for any entry relating to saving a modified customers impacted list. The list of status and revision changes is in chronological order.

The Audit Log section displays the following fields and buttons:

- The **Date** column contains the Date and Time of when the Status or Revision change was made.
- The **Status** column contains the status of the switching plan after a status or revision change.
- The **Rev** column contains the revision of the switch plan when the status or revision changed.
- The **User ID** column contains the user that initiated the status or revision change.
- The **Comment** column contains the text entered for any of the rejection reason fields on the Tracking section or you can manually enter a value into this column as well.
- The **Exit** button closes the Switch Sheet Editor window.

Steps Section

The steps section of the Switch Sheet Editor contains the steps included in the switching plan. This section allows you to order and review the steps in study mode, as well as determine the status of the step.

The Steps section displays the following fields and buttons:

- The **Step** column contains the sequential number of the step in the switching plan.
- The **Subnum** column contains the step's sub-number. Sub-numbering distinguishes between previously issued steps and newly added steps. This allows you to add more steps to a switching plan (even though the previous version has already been issued to a crew), without changing the numbering on the previously issued steps.
- The **Rev** column contains the revision number of the switching plan when the step was added.
- The **Description** column contains the description of the switching action.
- The **Details** column contains a one-line description of the type of impact the device operation will have on the model. This is auto populated when the step is first recorded into the switch steps list. Either Deenergize a section of the network, Energize a section of the network, Create a loop, Break a loop, Create a parallel on feeders [...], or Break a parallel on feeders [...] will show up in this column for Open and Close device actions.
- The **Status** column contains the state of the switching plan step. Possible states are Instructed, Completed, Aborted, Action Failed or Deleted.
- The **Instructed By** column contains the name of the user who instructed the step.
- The **Instructed Date** column contains the date and time the step was instructed.
- The **Instructed To** column contains the person the step was instructed to (e.g., name of the crew member). If a crew or multiple crews are selected in the Switching Crew List, then those crew IDs will be auto populated into this column when the step is selected.
- The **Completed Date** column contains the date and time the step was completed, aborted or action failed.
- The **Interrupt Current** column contains the current flow through the device after a close operation or prior to an open action. This column is only shown if Power Flow is installed.

- The **Tot. Ovlds** column contains the new overloads caused by the switching operation. This column is only shown if Power Flow is installed.
- The **Additional Comments** column is a text entry field that you can use to supply additional information about the step.
- The **Record** button toggles the record function on and off. When the record function is on, you can record new switching steps for the switching plan from the Control Tool. In order to record switching steps, the Viewer window mode must match that of the switching plan.
- The **Add** button adds a blank step (row) below the last step.
- The **Insert** button inserts a step (row) above the currently selected step.
- The **Delete** button deletes the selected step(s).
- The **Move** button moves the selected step(s) up or down one row. Use the up or down arrows to move the step(s).
- The **Show Address Rows** button toggles the display of an additional row below each step to display the address of the device.
- The **Instruct** button changes the status of the step(s) from blank to “Instructed” and populates the Instructed By and Instructed Date columns. Steps are not required to be Instructed before being Completed, Aborted or Action Failed. It is up to you to decide if the step should be Instructed first.
- The **Complete** button changes the status of the step(s) from blank or “Instructed” to “Completed” and populates the Completed Date column.
- The **Abort** button changes the status of the step from blank or “Instructed” to “Aborted” and populates the Completed Date column without actually performing the switching action. Use this action if a step was never attempted.
- The **Action Failed** button changes the status of the step from blank or “Instructed” to “Action Failed” without actually performing the step and populates the Completed Date column. Use this if a step was attempted but failed.
- The **Exit** button closes the Switch Sheet Editor window.

Using Web Request

The Switching Management - Web Request window is used to create switching requests without having to log into a full Oracle Utilities Network Management System environment. The Web Request window has two main tabs - the Request tab and the Request List tab.

You will initially access the Web Request window from a web browser, which will download the application to your computer. Subsequently, you may start it through a desktop shortcut, from your browser Favorites, or from your computer's Start menu.

This section includes the following topics:

- **Logging On to Web Request**
- **Changing Your Password**
- **Web Request Menus**
- **Using the Request Tab**
- **Using the Request List Tab**
- **Creating A New Request Via the Web Request Form**

Logging On to Web Request

The Login window is the first Web Request window you will see. You must enter a valid user name and password, and then click the **Validate** button. Once your user name and password are validated, the system populates the option menu that allows you to select a user type. You will see different initial windows and options depending upon the user type specified.

To start the Web Request form, complete these steps:

1. Depending on how your system was installed, either:
 - Click the **Web Request** icon found under the appropriate program group in your Windows Start Menu, or
 - Double click the **Web Request** icon on your desktop, or
 - Open a web browser and type the Web Request URL in the browser's Address field.The Web Request Login window displays.
2. In the **User ID** field, enter the user name provided to you by the system administrator.
3. In the **Password** field, enter the password provided to you by the system administrator.
4. Click the **Validate** button. The system verifies your login credentials. If the user name and password are not entered correctly, the system displays a warning dialog box. If the login is validated, the bottom portion of the Web Request Login window sensitizes.
5. Select the appropriate **User Type** from the drop-down menu. This contains the list of user types within your authority.
6. Click the **Login** button. The appropriate Web Request window opens, based upon the User Type selected.

Changing Your Password

You also use the Login dialog box to change your password. To change your password, complete these steps:

1. Depending on how your system was installed, do one of the following:
 - Click the Web Request icon found under the appropriate program group in your Windows Start Menu, or
 - Double click the Web Request icon on your desktop, or
 - Open a web browser and type the Web Request URL in the browser's Address field.The Web Request Login window displays.
2. Enter your user name.
3. Enter your password.
4. Click the **Validate** button. The bottom portion of the Web Request Login window sensitizes.
5. Click on the **Change Password...** button. A Change Password dialog box will appear.
6. Type your old password in the Old Password field.
7. Type your new password in the New Password field.
8. Retype your new password in the Verify Password field to verify the change.
9. Click the OK button. You are returned to the Oracle Utilities Network Management System Web Request Login screen.
10. Click the **Login** button to finish logging in.

Web Request Menus

- **File Menu** - The options in the File menu are available in both the Request tab and the Request List tab. The following table describes the File Menu option.
 - **New Request** - Start a new request and initialize the fields on the Request form.
 - **Print** - Opens the Print Preview dialog, which allows you to print the current contents of the selected tab.
 - **Exit** - Closes the Web Request window.
- **Filter Menu** - The Filter menu has standard options that allow the Request List to be filtered either by the current users login user name or to show all the requests created by all the users. The Filter menu also has the standard Dialog option for creating your own filters. See **Filtering** on page 1-5 for more information.
 - **Dialog** - Opens the Filter Dialog, which is used to add and delete user-defined filters.
 - **Current User** - Filters the Request List to show only list requests created by the User Name you typed in when logging in.
 - **All** - Displays the Request List with no filters (all requests created by all users are included).
- **Actions Menu** - The Actions menu is context sensitive and will change based on which main form is selected. When the Request tab is selected, then actions pertaining to saving, submitting and editing of a request are enabled. If the Request List is selected, then the actions pertain to viewing a selected request and refreshing the list.
 - **Submit Request** - Submits the request and places the request into the Requested state.
 - **Copy** - This option will become enabled when viewing a request in a non-edit mode. When this option is selected, the currently displayed request's values will be copied into a new request.
 - **Edit** - This option will become enabled when viewing a request in a non-edit mode. Selecting this option will place the request into an edit mode.
 - **Cancel Edit** - This option will become enabled when in an edit mode. If for any reason you wish to cancel any changes you have made, then select this option. A dialog will appear asking you to confirm your action.
 - **Save** - This option will become enabled when in an edit mode. You may save a request at any time, even prior to submitting it. Saving a pre-submitted request will place the request into the New state.
- **Actions Menu** - The following table describes the Actions Menu option for the Request List tab.
 - **View** - This option will become enabled when a request is selected within the list. Selecting this option will load the request into a view mode within the Request form.
 - **Refresh** - This option will refresh the Request List with the latest list of requests for the currently active filter.
- **Help Menu** - The option on the Help menu is available at all times.
 - **About Web Request** - Opens a dialog that displays information regarding what version of the application is presently running, as well as version and other information about the Oracle Utilities Network Management System Web Gateway that the application is using.

Using the Request Tab

The Request tab lets you create, submit, and edit switching plan requests.

The Request tab contains the following sections:

- **Header**
- **Request Tab Request Section**
- **Request Tab Contact Section**
- **Request Buttons**

Related Topics:

- **Creating A New Request Via the Web Request Form**

Header

The header section of the Request tab contains the request (Plan) number and the status of the request.

The Header section displays the following fields:

- **Plan** displays the switching plan's request number.
- **Status** displays the status of the request.

Request Tab Request Section

The Request tab also has a sub section with two separate tabs - Request and Contact. The Request section contains information about the person or department requesting the work. Logic is built into these fields (e.g., start date must be before the finish date).

The Request section of the Request tab displays the following fields:

- **Requested By** displays the person requesting the switching order. This field is required prior to submitting the request.
- **Phone Number** displays the phone number of the person requesting the switching order. This field is required prior to submitting the request.
- The **Charge Number** fields are used to enter charge numbers that can then be used by the switching plan preparer and/or executor.
- **Office** displays the office responsible for the switching plan. Required prior to completing a switching plan.
- **Location** displays the street address or specific location for the switching operation.
- **Start Date** displays the date and time the switching work should be scheduled to begin. Use the calendar dialog to enter a date and time. The dialog will be shown when the calendar button is selected.
- **Finish Date** displays the date and time the switching work should be scheduled to end. The finish date must be later than the start date, and you must enter the finish time for the date to be valid. Use the calendar dialog to enter a date and time. The dialog will be shown when the calendar button is selected.
- **Alt. Start Date** displays the alternate date and time the switching work could begin. The alternate start date must be later than the start date. Use the calendar dialog to enter a date and time. The dialog will be shown when the calendar button is selected.
- **Alt. Finish Date** displays the alternate date and time the switching work could end. The alternate finish date must be later than the alternate start date. Use the calendar dialog to enter a date and time. The dialog will be shown when the calendar button is selected.
- **Substation** displays the substation where the switching operation takes place.

- **Feeder** displays the feeder where the switching operation takes place.
- **Device** displays the device being worked on (not necessarily the device being switched).
- **Voltage** displays a drop-down menu that lists the nominal device voltage of the device(s) involved in the switching plan.
- **Description of Work** displays a general description about what the switching plan should try to accomplish.

Request Tab Contact Section

The Contact section of the Request tab contains information relating to the crew and a requesting customer.

The Contact section of the Request tab displays the following fields:

- **Crew Will Switch** is a toggle that allows you to indicate whether the requesting crew will perform the switching activities.
- **Crew Will Restore** is a toggle that allows you to indicate whether the requesting crew will restore the outage associated with the switching activities.
- **Grounds Required** is a toggle that allows you to indicate whether or not the crew is required to place grounds on the appropriate devices.
- **Contact** displays the lead crew contact for this switching order.
- **Phone** displays the telephone number for the lead crew contact.
- **Pager** displays the pager number for the lead crew contact.
- **Fax** displays the fax number for the lead crew contact.
- **Customer Requested** is a toggle that allows you to indicate whether a customer requested the switching sequence. The toggle is for informational purposes.
- **Customer Interrupted** is a toggle that allows you to indicate that a customer has been interrupted.
- **Customer Name** displays the name of the customer requesting the interruption.
- **Customer #** displays the telephone number of the customer requesting the interruption.

Request Buttons

The buttons on the bottom of the Request tab window comprise commonly used functions.

The Request tab displays the following buttons:

- The **Submit Request** button submits the request and sets the status of the request to Requested.
- The **Copy** button, when enabled, allows you to copy the currently loaded request into a new request. This button is only enabled when the currently loaded request is in a non-edit mode.
- The **Edit** button, when enabled, allows you to edit the currently loaded request. This button is only enabled when the currently loaded request is in a non-edit mode.
- The **Cancel Edit** button is used to cancel any changes that were made while the request was in edit mode. Upon selecting this button, a dialog will be issued to you asking you to confirm your action.
- The **Save** button, when enabled, allows you to save your changes to the database. This button is only enabled when the currently loaded request is in edit mode. If the request is saved prior to submitting it, then the request will be saved with a status of New.
- The **Exit** button closes the Web Request window.

Using the Request List Tab

The Request List tab contains a table listing all of the switching requests that are present. See Filter Menu on [page 14-14](#) for the filtering options available on this table.

The Request List tab displays the following fields and buttons:

- The **Status** column contains the status of the switching plan. See **Switching Plan States** on [page 14-2](#) for more information.
- The **Plan #** column contains the unique number associated with the switching plan.
- The **Feeder** column contains the feeder where the switching operation takes place.
- The **Start Date** column contains the date and time the switching plan is scheduled to begin.
- The **Alt Start Date** column contains the date and time the switching plan will begin if the plan cannot be scheduled for the original Start Date.
- The **Office** column contains the name of the office managing the switching work.
- The **Work Location** column contains the name or description of the area where the switching work is being performed.
- The **Substation** column contains the substation where the switching operation takes place.
- The **Device** column contains the device being worked on (not necessarily the device being switched).
- The **Voltage** column contains the highest voltage of the devices involved in the switching plan.
- The **Requested By** column contains the name of the individual or department that requested the switching plan.
- The **Requested Date** column contains the date on which the switching plan was requested.
- The **Cust Interrupt** column indicates whether or not customers will be interrupted by this switching plan.
- The **Customer Name** column contains the customer's name that requested the interruption.
- The **Completion Date** column contains the date and time at which the switching plan was completed.
- The **View** button populates the Request tab of the Web Request window with information from the selected switching request.
- The **Refresh** button refreshes the view to display any new or updated switching requests.
- The **Exit** button closes the Web Request window.

Planned Switching

Planned switching plans are created, studied, and approved prior to the switching operations taking place. Planned switching plans require information that is not needed for emergency switching plans, such as a start and end date.

Planned switching topics include:

- **Creating a New Switching Plan Request**
- **Opening a Switching Plan**
- **Creating Switching Plan Steps**
- **Editing Switching Plans**
- **Finding and Replacing a Device**
- **Reviewing a Switching Plan in Study Mode**
- **Replaying Steps**
- **Viewing the Device Addresses**
- **Viewing Impacted Customers**
- **Emailing Switching Plan Data**
- **Focusing on a Device**
- **Using Viewing Areas**
- **Checking for Overlapping Switching Plans**
- **Power Flow Impacts**
- **Implementing a Switching Plan**
- **Working with Switching Plan Revisions**

Creating a New Switching Plan Request

The following sections describe the ways in which a new switching plan request may be initiated.

Creating A New Request Via the Environment Manager

The request information for the switching operation should be completed before you add, review, and complete the switching steps. To create a new switching plan request, complete these steps:

1. Click the **New Switching Plan** button on the Environment Manager to open the Switch Sheet Editor. If the Switch Sheet Editor is already open, choose New from the File menu. A dialog box opens.
2. In the dialog box, select “Planned,” then click **OK**. The dialog box closes and a unique number appears in the Plan # field on the Switch Sheet Editor. The Request section is displayed.
3. Enter information in the appropriate fields. Required fields (labels are shaded in red) are Requested By and Phone Number.
4. Click on the Contact tab to view the contact section.
5. Enter information in the appropriate fields.
6. Click the Request tab to view the request section.
7. Click the **Submit Request** button.

Note: Someone other than the person who prepares the switching plan usually completes switching plan requests. The requestor may be someone in the

construction/maintenance department, while the preparer is an operations user assigned to look for and prepare new requests.

Creating A New Request Via the Web Request Form

To create a new switching plan request from the Web Request form, complete these steps:

1. Log into the Web Request form. For login help, see **Logging On to Web Request** on page 14-13.
2. Enter information in the appropriate fields. Required fields (labels are shaded in red) are Requested By and Phone Number.
3. Click on the **Contact** tab to view the contact section.
4. Enter information in the appropriate fields.
5. Click the **Request** tab to view the request section.
6. Click the **Submit Request** button.
7. After selecting the **Submit Request** button, a new job request number will be displayed in the Plan: text field on the Request section. The new request will also show up within your Request List after selecting the Refresh button.

Note: Someone other than the person who prepares the switching plan usually completes switching plan requests. The requestor may be someone in the construction/maintenance department, while the preparer is an operations user assigned to look for and prepare new requests.

Opening a Switching Plan

Depending on how a switching plan is being worked, there are a number of ways for you to load a switching plan. The following sections describe the different ways to open a switching plan:

From the Switch Sheet Editor (Plan # field)

- Within the Plan # field found on the Header section of the Switch Sheet Editor, enter in the switching plan number that you wish to load and hit Enter.

From the Switch Sheet Editor (Quick Load List)

- From the File pull-down menu, the last ten loaded switching plans will be listed at the bottom of the pull-down. Selecting any of these will load its associated plan. This list is reset each time you log in.

From the Work Agenda Switching Plan List

- Select a switching plan from the Switching Plan List. The appropriate filter and the **Refresh** button should be selected prior to looking for the switching plan in question.
- Select the **Open Plan Request** button to open the switching plans' Request section or select the **Open Steps** button to open the switching plans' Steps section. The Header section will always be displayed no matter which option is selected.

From the Work Agenda Safety Doc List

- Select a safety document that is associated with a switching plan. You will be able to determine this by an entry in the Plan # column.
- Select the **Open Plan** button to open the switching plans Header and Steps sections.

From the Safety Document

- Load a safety document that is associated to a switching plan. This can be determined by checking to see whether a switching plan number is displayed within the Plan # column of the Work Agenda Safety Doc List.
- From the safety document's Action pull-down, select the **Switching...** button to open the switching plan's Header and Steps sections.

From any of the Work Agenda Jobs Lists

- Select an event from one of the Jobs Lists that has a switching plan associated to it. This can be determined by checking to see whether a switching plan number is displayed within the Plan # column for the selected event.
- Select the **Switching...** button to open the switching plans Header and Steps sections.

From the Event Details

- If the Switching Plan # field on the Event Details display is not blank, then select the **Switching...** button to open the switching plan's Header and Steps sections.

From the Crew List

- If a crew has been placed en route to a Master switching plan event, then select the crew from the list.
- Select the **Switching...** button to open the switching plan's Header and Steps sections.

From the Crew Icons

- If a crew has been placed en route to a Master switching plan event, then select the crews' icon on the display.
- Select the **Switching...** button to open the switching plan's Header and Steps sections.

From the Control Tool

- From a Viewer, double click on a device that is involved in a switching plan. The Control Tool is displayed.
- Select the **Switching Plan(s)...** button. If only one switching plan is actively open on that device, then that plan will be loaded. If the device is involved in multiple active switching plans, then a list of plans and their Description of Work will be displayed. Select the switching plan you wish to load and then select the **OK** button.

From Web Request

- From the Request List form, select the request your wish to load. You may have to select the **Refresh** button before the request will show up within the list.
- Select the **View** button found at the bottom of the display.

Creating Switching Plan Steps

Sometime prior to issuing the switching plan, you can create the sequence of switching steps for the operation. Normally steps added prior to the switching plan having a status of "Prepared." The Switch Sheet Editor and Viewer must be in the same mode to add steps.

Adding Steps to a Switching Plan

To add steps to a switching plan, complete these steps:

1. Open the switching plan you want to add steps to.
2. Click on the **Steps** tab to access the steps section.

3. From the **Mode** menu, verify that you are working in **Study** mode.
4. Add steps to the switching plan in one of the following ways:
 - If you want to add new blank steps, click the **Add** or **Insert** buttons to insert a blank step. The blank step can be used as a comment step that is not related to a specific device. You must enter text in the Description, Details, Instructed To or Additional Comments field. The other fields for the step are populated when you instruct and complete the step. Only one blank step can be present within the switching steps list. Once one of the four step entry fields have been filled out, then another blank step can be added.
 - If you want to use the Viewer window and Control tool to add steps, open a Viewer window and change it to study mode. Then toggle on the Record function on the Switch Sheet Editor. Perform the switching actions using the Viewer and the Control Tool. The switching actions are added to the switching plan.
5. Verify that the switching steps are correct.
6. Save the switching plan by selecting **Save** from the **File** menu.

Creating Go-Back Steps

When you are creating a switching plan in study mode, you can automatically generate a sequence of switching steps to “go-back” to a normal state. Go-back creates a new sequence of steps that reverses the existing sequence.

To create go-back steps for a range of existing steps, complete these steps:

1. Select the step or the range of steps you want to reverse.
2. Do one of the following:
 - Select **Create Gobacks** from the Actions menu. If the Goback Insertion Position dialog box displays, you must indicate whether you want to place the goback step(s) at the end of the list (**Append**) or insert the step(s) below the currently selected step(s) (**Insert**). Click the appropriate button.
 - If you want to create go-back steps for all existing steps, select **Create Gobacks for All** from the Actions menu. The go-back steps are added to the end of the steps list.

Adding Safety Document Transition Steps

You can add the issuance and release of safety documents as steps to a switching plan. In order to add these safety document transition steps, the proper safety document must be created and associated with a switching plan. To add a safety document transition step, complete these steps:

1. From the switching plan’s Steps list, select a step just above where you would like a safety state transition step added.
2. Double click on the desired document in the Safety Docs list found in the Header section of the switching plan. The Record Safety Dialog is displayed.
3. Click the **Record Issue**, **Record Unissue**, **Record Release**, or the **Record Complete** button to add the appropriate safety document step to the steps list.
 - Once the step is added to the steps list, instructing or executing the safety document transition step causes the safety document to display.
 - The Switch Sheet Editor will be locked from further input during the time that the safety document is displayed.
4. If the safety document is filled out properly, then select the appropriate state transition button on the safety document.
 - The safety document transitions to the state you selected.

- The safety document closes.
- The switching step you originally instructed or executed is completed within the steps section of the Switch Sheet Editor.

You can click the **Exit** button from the safety document to cancel the execution of the safety document transition step.

Record Safety Dialog

The following table describes the Record Safety dialog box buttons.

Button	Description
[Type] [Number]	Opens the safety document for viewing and editing.
Record Issue	Adds a step for issuing the selected safety document. The step is added after the currently selected step.
Record Unissue	Adds a step for releasing the selected safety document and allowing the devices associated to the safety document to be changed. The step is added after the currently selected step.
Record Release	Adds a step for releasing the selected safety document. The step is added after the currently selected step.
Record Complete	Adds a step for completing the selected safety document. The step is added after the currently selected step.
Disassociate	Removes the association of the selected safety document from the switching plan, deleting it from that switching plan's Safety Docs list. If the safety document has an active safety step within the steps list, then the document cannot be disassociated from the switching plan. If the user attempts to do this they will be issued an error message.
	Note: This does not delete the safety document itself.
Cancel	Closes the dialog box.

Editing Switching Plans

You can open an existing switching plan from multiple locations. Certain fields on the switching plan are not editable after a plan has transitioned to a certain set of states.

Editing a Switching Plan

To edit a switching plan, complete these steps:

1. See **Opening a Switching Plan** on page 14-19 for options on loading a switching plan for editing.
2. Select the section you wish to edit by clicking on the appropriate tab button.
3. Edit the field(s).
4. Save the switching plan by selecting Save from the File menu.

Editing Switching Steps

You can rearrange, add, and delete switching steps using options in the Edit Steps menu in the Switch Sheet Editor window. To edit switching steps, complete these steps:

1. Open the switching plan.
2. Click on the Steps tab to access the steps section.
3. Edit steps as follows:
 - If you want to edit the description, click the cursor in the Description, Instructed Date, Instructed To, Completed Date, Additional Comments or Address field and change the text. This option is not available after the switching plan has been completed.
 - If you want to insert a step, place your cursor in the row where you want to insert the step and click the **Insert** button.
 - If you want to add a step, click the **Add** button to add a blank step to the end of the steps list.
 - If you want to delete a step, select the row for the step you want to delete and click the **Delete** button. This option is not available after a step has been instructed or completed.
 - If you want to rearrange steps, select the row for the step you want to move and click the up or down arrow button. You can only move steps that have not been instructed or executed.
 - You can also move steps by selecting the Cut option from the Edit Steps pull-down. Cutting steps will mark the steps as being cut. Only after the steps have been pasted will they be redlined and copied or moved to their new location based on the step that is selected when the Paste option is initiated. Pasted steps will be added after the currently selected step position.
 - Switching step cut, copy and paste operations can be made from one plan to another. The ability to cut, copy or paste is governed by the select ability of the options within the Edit Steps pull-down.
4. Verify that the switching steps are correct.
5. Save the switching plan by selecting **Save** from the **File** menu.

Finding and Replacing a Device

The Find or Replace Device dialog box allows you to find and replace all occurrences of a device in the switching steps. This is helpful for finding a device in a switching plan that has many steps or that was created from a formalized switching plan template. Formalized templates provide generic device names that you must replace with actual devices.

You can also use this function if you are reviewing a switching plan and find that the wrong device was entered in a number of places. To find and replace a device, complete these steps:

1. Open the switching plan in the Switch Sheet Editor.
2. Click on the **Steps** tab to access the steps section.
3. Select **Find Device** from the Edit Steps menu. A Find or Replace Device dialog box opens, allowing you to find and replace a device in the steps section.
4. Enter a valid device name in the Find field and click the **Find Next** button. The step row that contains the device is highlighted.
5. If you want to replace the device with another device, do one of the following:
 - Enter the new device name in the Replace field in the dialog box, or
 - Select the Replace field in the dialog box and then select a device from the Viewer.

The Phases column indicates which phases were selected for the current steps operation and allows you to select a new set of phases with the replacement device. When obtaining a device through a Viewer device selection, all the phases will be selected by default.

6. If the device you are replacing is used in a grounding operation, then after populating the Replace field:
 - Select the Grounding Object field and select the secondary device from the Viewer. You may also type in the grounding object device alias name.
 - Click the **Replace** or **Replace All** button.

Reviewing a Switching Plan in Study Mode

You can review the actions of a switching plan in a Viewer window. With the Viewer and Switch Sheet Editor both in study mode, you can complete steps by selecting a step and clicking the **Complete** button at the bottom of the steps section. As the steps are completed, each one takes effect in the Viewer window and the word “Study Completed” appears in the Completed Date/Time column in the steps section. Steps are completed starting with the first step and continuing sequentially; however, it is possible to execute steps out of order if it is deemed reasonable to do so.

The Look Ahead window informs you of the results of the operation, including the creation of parallels and loops, the number of critical customers affected, and related abnormal devices and conditions.

Replaying Steps

You can replay steps in the Viewer window, allowing you to experiment with and make changes to a switching plan. You can then add and delete switching steps and then select one of the two Reset Study Session options from the Actions menu in the Switch Sheet Editor window. After resetting your study session, you will be able to go through the steps again using the **Complete** button.

Viewing the Device Addresses

You can view the physical address of all the devices used to record switching steps. To view the addresses for all the devices in the switching steps section, click the **Show Address Rows** button. A new row displays below each recorded step containing the address of the device in that step. Click the **Hide Address Rows** button to hide the address rows.

Viewing Impacted Customers

If a switching plan is in “Prepared” or further status, then you can generate a list of all customers affected by the switching steps. The steps do not need to be completed to produce the list, but must simply be entered in the steps section.

This section displays the following topics:

- **Displaying the Impacted Customers List**
- **Saving an Impacted Customers List**
- **Removing Customers**
- **Moving Customers**
- **Reloading an Impacted Customers List**

Displaying the Impacted Customers List

Select Customers Impacted from the Tools menu in the Switch Sheet Editor window to view a list of impacted customers. The Customer Impacted List displays the following fields and buttons:

- The **Name** column contains the customer's name.
- The **Address** column contains the customer's address.
- The **City/State** column contains the customer's city and state.
- The **Zip** column contains the customer's zip code.
- The **Account** column contains the customer's account number.
- The **Group** column displays a value associated with a particular step within the Steps list. This column can then be used to filter out a list of customers pertaining to a particular step action.
- The **Cust ID** column displays the customer's ID number.
- The **Serv Loc ID** column displays the customer's service location ID number.
- The **Meter ID** column displays the customer's meter ID number.
- The **Filename** field allows you to enter a filename that will be used to store the list in a txt or xml formatted file.
- The **Publish** button allows you to save the list as a file that can be used in a mail merge application to generate notifications (e.g., letters, post cards, IVR calls) of planned outages.
- The **As** option menu allows you to specify the type of output file that should be published. Options are Text or XML.
- The **Save List** button allows you to save the complete list of customers to the database table IMPACTED_CUSTOMERS. The complete unfiltered list of customers will always be saved to the database table no matter what is actually shown in the list on the display. If a customer has been moved or removed from the list and not just filtered from the list, then they will not be included in the saved list.
- The **Regenerate List** button allows you to regenerate the list, which will bring back removed customers and will also regenerate the list based on switching step changes.
- The **Remove Selected** button allows you to delete the customer from the list of impacted customers. This deletes the selected customers from the list only. Customers are not deleted from the model.
- The **Move Customer** button allows you to move the customer from one device to another. This also removes the customer from the list if the new device is not also impacted by the current switching plan.
- The **Auto Filter** button allows you to filter the list of customers based on the value selected within the list. Only the customers with the selected value in that column will be shown in the list.
- The **Auto Filter Off** button is used to turn auto filtering off.
- The **Exit** button closes the Customers Impacted window.

Customers Impacted List Menu

- **File Menu**
 - **Print** - not implemented.
 - **Exit** - closes the Customers Impacted dialog.
- **Sort Menu**
 - **Ascending** - sorts the selected column in ascending order.

- **Descending** - sorts the selected column in descending order.
- **Dialog** - brings up the sorting dialog.
- **Default** - sorts on Name column in ascending order.
- **File Menu**
 - **Dialog** - brings up the filter dialog.
 - **All** - no filter is applied. All customers are shown.
 - [Dynamic Filters] - for each unique value that appears in the list Group column, there will be an additional filter added to the Filter pull-down.
- **Actions Menu**
 - **Save List** - saves the complete list of customers to the database table IMPACTED_CUSTOMERS. The complete unfiltered list of customers will always be saved to the database table no matter what is actually shown in the list on the display. If a customer has been moved or removed from the list and not just filtered from the list, then they will not be included in the saved list.
 - **Regenerate List** - regenerates the list, which will bring back removed customers and will also regenerate the list based on switching step changes.
 - **Publish** - saves the list as a file that can be used in a mail merge application to generate notifications (e.g., letters, post cards, IVR calls) of planned outages.
 - **Remove Selected** - deletes the customer from the list of impacted customers. This deletes the selected customers from the list only. Customers are not deleted from the model.
 - **Move Customer** - moves the customer from one device to another. This also removes the customer from the list if the new device is not also impacted by the current switching plan.
 - **Auto Filter** - filters the list of customers based on the value selected within the list. Only the customers with the selected value in that column will be shown in the list.
 - **Auto Filter Off** - turn auto filtering off.
 - **Exit** - closes the Customers Impacted window.

Saving an Impacted Customers List

When you generate a list of impacted customers and select **Customers Impacted** from the Actions menu, a table opens displaying the customers' names, addresses, and account numbers. Click the **Publish** button and the desired output type to save the list as a text or xml file with a default or entered name and in a preset location. You can use this output file with third party mail merge software to produce notification mailings. The list of customers currently displayed in the dialog list is saved to the file.

Alternatively, the list can be saved to the database by clicking on the **Save List** button. All customers not moved or removed from the list will be saved to the database. Even if the list is being filtered, all the customers not moved or removed will be saved to the database list.

Removing Customers

You can remove customers from the Impacted Customers list by selecting the customer row and clicking the **Remove Selected** button. You can remove multiple customers at one time by selecting multiple rows. Removing a customer from the list will not remove the customer from the model. The next time the list is generated, the customer will again appear in the list.

Moving Customers

If you realize that a customer has been incorrectly associated with a device, you may need to move a customer from a device that will be impacted to a device that will not be impacted. To move customers from their current device to another device, complete these steps:

1. Select the row of the customer and click the **Move Customer** button. The Move Customer dialog box opens populated with the customer name and their current device.
2. Either type the name of the new device in the New Device field or click on the New Device text entry field and then the new device in the Viewer.
3. Click **OK**. The system verifies that the device is not also an impacted device.
 - If it is an impacted device, a dialog box opens asking if you want to continue the move.
 - If it is not an impacted device, the move automatically takes place and the customer is removed from the impacted customer list.

Note: You can only move one customer at a time.

Reloading an Impacted Customers List

You can reload a previously saved impacted customers list from the database when selecting the Customers Impacted option from the Tools pull-down on the Switch Sheet Editor. You can only reload a list from the database. This option does not apply to reloading a list from a flat file.

A dialog will be shown if a customer impacted list has been previously saved to the database for the switching plan you initiate the request from. The dialog gives you the option to reload the previously saved list or regenerate the list. Normally, you would regenerate the list if you made any switching step changes that might affect the number of customers being impacted.

- From a switching plan that has a previously generated and saved impacted customer list, select the **Customers Impacted** option from the Tools pull-down.
- Select the **Load** button to load the previously saved impacted customers list into the Customers Impacted dialog.
- Select the **Regenerate** button to regenerate the list based on the switching step actions recorded on the Steps pane. The regenerated list will be displayed in the Customers Impacted dialog.
- Select the **Cancel** button to cancel the operation.
- Upon exiting from a regenerated customers impacted list, you will be asked if you want to save the list to the database if you have not explicitly selected the **Save List** button prior to exiting from the Impacted Customers dialog.
- From the Customers Impacted dialog with a regenerated list of customers, select the **Exit** button. When the confirmation dialog appears, do one of the following:
 - Select the **Yes** button to save the newly generated list to the database.
 - Select the **No** button to retain the previously saved list in the database.
 - Select the **Cancel** button to cancel the exit action.

Emailing Switching Plan Data

At any time during the process of editing or viewing a switching plan, the plan's data may be emailed to a single or multiple recipients. To email the data, select the E-Mail Plan... option from the Actions menu of the Switch Sheet Editor. The E-Mail dialog will appear.

The E-Mail dialog displays the following fields and buttons:

- The **To** field contains the list of email addresses that the plan should be sent to.

- The **Cc** field contains the list of additional addresses that the plan should be sent to.
- The **Subject** field contains the subject of the email.
- The email message text field contains additional information that will be sent to the recipients. Even if the email message is blank, the switching plan attachment will be sent to the recipients.
- The **Cancel** button allows you to cancel the email prior to sending it.
- The **Send** button will send the email as long as an address has been specified within the To field and a Subject has been given. If either or both of these are blank, the email will not be sent and an error message will appear within the blank section between the email message body and the button section of the dialog.

Emailing a Switching Plan

After selecting the **E-Mail Plan...** button from the Actions menu of the Switch Sheet Editor, a dialog will be presented to you. Within this dialog a standard set of email fields will be shown. Within the dialog, a value is required to be entered into the To and Subject fields. The switching plan data will not appear within the E-Mail dialog, but will be sent to the recipients as an HTML attachment. When the recipients receive the email, they will have to open the attachment in order to view the switching plan data.

Focusing on a Device

When reviewing a switching plan, you can focus on a device in the Viewer window to better understand the conditions present in the area of the device. To focus the Viewer window on the device in a switching step, select a step in the steps section and then select View Device from the Actions menu in the Switch Sheet Editor window. The Viewer loads the appropriate map and focuses on the device in the switching step. Another option after selecting the step is to select the target button on the Viewer. This will give you the same results as selecting the View Device button from the Switch Sheet Editor.

Using Viewing Areas

While creating a switching plan, you can view a device in a switching step in a Viewer window, save a viewing area, and view a saved area.

Note: These options only work with the VIEW1 Viewer on the first screen.

Saving a Viewing Area

When working with a switching plan, you may often need to return to the same area of the map. In order to save time, you can save areas of the map as a viewing area. To save a viewing area, complete these steps:

- In the Viewer window, navigate to the area of the map that you want to save as a viewing area. If it is also being used, the camera view for a Viewer is also saved.
- In the Switch Sheet Editor window, select Save Area from the Actions menu. The View Area button becomes enabled.

Note: You can only save one viewing area per switching plan.

Loading a Saved Viewing Area

After a viewing area has been created for a switching plan, you can quickly load the viewing area into the Viewer window. To load a saved viewing area, select the View Area option from the Actions menu in the Switch Sheet Editor. The saved viewing area displays in the Viewer.

Checking for Overlapping Switching Plans

You can crosscheck switching plans for overlap of affected devices during the same time period. This allows planners to create a single planned event instead of two separate events to avoid visiting the same location twice or impacting the same customers twice. Planners can identify whether to change the current switching plan in order to avoid affecting the same customers or same area multiple times in a certain time period.

Using the Switching Overlaps Window

Once you have created steps for a planned event and saved the switching plan, you can crosscheck the plan using the Switching Overlaps window. Open the Switching Overlaps window by selecting the Switching Overlaps option from the Switch Sheet Editor Tools menu. The Switching Overlaps window displays information about the overlapping plans including switching plan number, start date, end date, control zone overlaps, and device overlaps.

Note: When an overlap occurs, the system does not prevent you from completing planned switching operations, but it does provide a warning indicating the overlap.

The Switching Overlap window displays the following fields and buttons:

- The header area of the Switching Overlaps window provides (view only) information about the switching plan, including the switch plan number, start date, and end date.
- The **Plan #** column contains the identification number of the overlapping switching plan.
- The **Start Date** column contains the date that the overlapping switching plan begins.
- The **End Date** column contains the date that the overlapping switching plan ends.
- The **Control Zone Overlaps** column indicates whether there is a control zone overlap. Control zone overlaps are overlaps that affect the same control zone but do not affect the same device. This warns the user that there may be overlapping work that could be combined or could not be done at the same time.
- The **Device Overlap** column indicates whether the same device is operated on more than one switching plan.

Buttons

- The **Open Switching Plan** button opens the overlapping switching plan in the Switch Sheet Editor window for the selected switching plan.
- The **Cancel** button closes the Switching Overlaps window.

Viewing an Overlapping Switching Plan

If the Control Zone Overlaps or Device Overlaps columns indicate that an overlap exists, you can quickly view the switching plan that contains the overlaps.

To view an overlapping switching plan, complete these steps:

1. Open the Switching Overlaps window by clicking the **Switching Overlaps** option from the Switch Sheet Editor Tools menu.
2. Select the row for an overlapping plan.
3. Click the **Open Switching Plan** button to open the overlapping switching plan in the Switch Sheet Editor window.

Power Flow Impacts

Systems with Oracle Utilities Network Management System - Power Flow Extensions installed allow you to examine the impact a switching plan will have on the loading and voltage of the distribution system. You can check switching steps with Oracle Utilities Network Management System Power Flow Extensions by selecting the Flow Load Scenario option in the Actions pull down menu and then selecting a load scenario. The system calculates the power flow for the steps and displays the current through the switch (either before or after the switching) as well as the number of new overloads caused by the switching operation in the Interrupt Current and Tot Ovlds columns.

Viewing Power Flow Details

To view further power flow information, click the **Power Flow Details** button. The Power Flow Details window displays information about:

- Interrupting current for A phase, B phase, and C phase
- Number of new voltage violations
- Magnitude of the worst-case voltage violation
- Number of new conductor violations
- Magnitude of the worst-case conductor violation
- Number of new switch violations
- Number of new transformer violations

Specific information is available about violations in the Power Flow Details window. For more information, see **Chapter 16, Power Flow, Suggested Switching, and Volt/VAr Optimization**.

Implementing a Switching Plan

Once you have created, studied, and approved a switching plan, you can then instruct and complete the switching plan. To complete a switching plan, the Switch Sheet Editor must be in real-time mode. Although a Viewer window does not need to be open to complete switching steps, you can view the steps in a Viewer window. The Viewer must be in real-time mode as well.

You can complete steps in study mode, but these “completions” do not affect the real-time data.

For steps involving device operations, you must have authority over the zone where switching operations will take place or the system will not allow you to complete the switching steps.

Scheduling a Planned Event

In order to schedule planned switching, you must have entries within the Start Date and Finish Date (ERT) fields on the Request section of the switching plan. An optional device alias can also be specified within the Device field on this same section. Specifying a device will cause the planned Master event to conform to the regular zone authority rules. If you do not have authority over the zone that device resides in, then you will not see the planned Master event that will be created when the switching plan is scheduled.

To schedule a planned Master event, complete these steps:

1. Fill in future dates and times within the Start Date and Finish Date (ERT) entry fields.
2. If you would like to have the plan associated to a particular device and control zone, then select the device within the Viewer. Make sure the Switch Sheet Editor and the Viewer are in the same mode. If a device is not specified, then the Master event will fall into the FUZZY control zone.
3. From the Tracking section, make sure the Prepared and Checked approvals have been made.

4. Select the Scheduled checkbox.

At this point, a new planned Master event has been created and associated to the switching plan. This new event will show up in the Events list as a Master event.

Selecting the event within the Events list will cause the Work Agenda Jobs List to focus on that event as long as it is found within the currently displayed list (e.g., Work Agenda All List). From the Work Agenda Jobs List, you can bring up the Event Details for that event. The Event Details display is different for planned events than for spontaneous outage events. For instance, you cannot update the ERT for a planned event from Event Details. That has to be done from the associated switching plan.

Updating the ERT

To update the ERT for the planned event from Event Details, complete these steps:

- Select the **Switching...** button followed by the **Exit** button found at the bottom of the display. The associated switching plan will be loaded and the steps displayed.
- Select the Request tab and enter in a new Finish Date (ERT) date and time.
- Select the **Update ERT** button found next to the date and time entry fields. The Est Restore Time (ERT) will be changed for the associated Master event within the Work Agenda Jobs List. The new date will also show up in Event Details the next time it is loaded for that event.

Instructing and Completing Switching Steps

In order to begin instructing a switching plan, it has to be Issued first. The **Instruct** and **Complete** buttons, at the bottom of the Switch Sheet Editor, become enabled in Real Time when the plan reaches the Issued state. Sometime around the time of the switching plan being issued, crews should be assigned to the planned Master event. This will cause the crews to show up on the Switching Crew List within the Header section of the Switch Sheet Editor. The plan is now ready for the crews to execute its steps.

To instruct and complete a step, do the following:

1. Verify that the Switch Sheet Editor and the Viewer are in real-time mode.
2. Verify that the Issued checkbox has been selected within the tracking section of the Switch Sheet Editor window.
3. Select the crew from the Switching Crew List that should receive the first instruction.
4. In the steps section of the Switch Sheet Editor window, select the first step. The Instructed To column for that step will be automatically populated with the selected crew's Contact information.
5. When you give the instruction to the crew performing the operation, click the **Instruct** button.
6. If the step involves a device operation, the Look Ahead window opens. Click **Open** or **Close** in the Look Ahead window to continue with the step. The status of the step changes to "Instructed," the Instructed By and Instructed Date columns are populated and an "Instructed" flag will display on the device in the Viewer.
7. If the step involves issuing a safety document to a crew, then the value in that steps Instructed To field will be copied to the safety document Crew Name field when the step is instructed or completed.
8. After the crew reports that the step is complete, select the step and click the **Complete** button. The Completed Date column is populated, the "Instructed" flag is removed and the device status is updated in the Viewer window. If customers are impacted, then a new planned outage event will be placed upon the device as well. This event will also show up within the Events list on the Switch Sheet Editor.

9. Select the next switching step and repeat this process all the way through to the last step.
10. After all steps are complete, click on the **Tracking** button to access the tracking section.
11. Load each of the associated safety documents and transition them to the Completed state. Switching Management requires that all safety documents be completed prior to allowing the switching plan to be completed.
12. Select the Completed By checkbox. A message box opens asking, “Complete this Switch Job?” Click **Yes** to complete the switching plan. The request to complete the switching plan will fail and an error dialog will be displayed if any associated event has not been restored or if any safety document has not been completed.
13. At this time any planned outage events will be completed along with the planned master event. Any crews assigned or en route to the events will be released as well.

Once all the steps in a switching plan are complete, the plan itself is considered complete. Selecting the Completed By checkbox in the tracking section “locks” the switching plan and no further operations may take place for the switching plan. Selecting the Completed By checkbox should be the very last action you perform in a switching plan.

Working with Switching Plan Revisions

Switching plans use a revision control mechanism in order to keep operators and crews consistent with regards to which switching plan they are viewing. The switching plan as a whole has a revision number that can be incremented manually. The revision will also be incremented automatically when new steps are recorded in the plan after a revision is locked down. A switching plan's revision is locked down when the Revision Status indicator displays **[X]** and after the plan has been issued.

Steps also have revision numbers associated to them. The step revision number is just a copy of the switching plan's revision number when the step was added. Once a plan is issued and the revision is locked down or the revision number is manually incremented, then any steps added after the revision change/lock-down are shaded green.

When you attempt to delete a step when the switching plan revision is locked down or when the step has an older revision number than the switching plan, then the step is shaded red and will not be removed. Green steps can be removed until the switching plan revision has been locked down. This can either be done manually by selecting the Revision Status indicator or by simply executing a step in real time.

If a locked-down step is moved, then the original step is redlined, marked as deleted, and a new duplicate step is created. The new step is then shaded green and takes on the revision number of the switching plan. This step can then be freely moved up or down within the steps list.

Adding steps to an already locked down switching plan automatically causes the revision of the plan to be incremented. The newly added steps are then associated to this new revision number.

Emergency Switching

Emergency Switching includes any unplanned switching operations that occur due to events during storms, equipment failures, or even planned switching actions that fail or are incorrect. Unlike in planned switching, where the switching plan is created and studied before it is issued, in emergency switching the switching plan is created as the operations take place in real time. Essentially, a switching plan is created and implemented simultaneously. Steps are recorded in the steps section of the switching plan as the Control Tool actions are being performed, and each step is considered complete as it is being recorded.

Emergency switching operates just like planned switching except the Switch Sheet Editor and Viewer must be in real-time mode. Whenever switching steps are recorded in a switching plan using the real-time Control Tool, the operation is considered emergency switching. The switching plan provides a record of the switching operation.

The request section of the a switching plan is not required when performing emergency switching, since the switching plan is created at that moment and not in response to a standing request.

Recording Emergency Switching Operations

To record emergency switching operations, complete these steps:

1. Click the **New Switching Plan** button on the Environment Manager. A dialog box opens.
2. Select Emergency, then click **OK**.
 - A new switching plan is created.
 - The steps section displays.
 - The Record function turns on.
3. If the VIEW1 Viewer is displayed, then it will transition to the same mode that the Switch Sheet Editor is in. In this case it will go into the Real Time mode.
4. You can now create and complete switching steps by selecting devices in the Viewer window and using the Control Tool. As each step is instructed and completed, the Instructed and Completed Date/Time field is populated with the date and time value shown on the Control Tool. Any crew ID selected and date/time specified from the Control Tool will also be used to populate the Instructed To and Instructed/Completed Date fields of the switching step when it is recorded. Any outages created by completing steps from the Control Tool or from Switching Management will be classified as Real Outages and not Planned Outages.

You can also access emergency switching using the **Switching...** button at the bottom of the Event Details window. When you click this button, a new switching plan opens automatically displaying the event number in the Events list.

Event Associations

Event associations are used to associate events to switching plans. Associated events are displayed in the Events list, which is found in the Header section of the Switch Sheet Editor. Event associations do not occur when the event causing the action is recorded into the Miscellaneous Log. Events can be associated to switching plans in two ways:

- Hard associations are automatic associations that are normally made as you perform actions within the Switch Sheet Editor or perform actions from the Control Tool that are recorded into the switching plan. An event can only have one hard association to a switching plan. Hard associations cannot be broken once the association has been established.
- Soft associations are associations that are normally added manually through the Event Association dialog. An event can be softly associated to an unlimited number of switching plans. This type of association can be manually removed at any time.

Hard associations can also be further classified by type. There are four types of hard association relation types:

- **Master** is the relationship type made between a Planned switching plan and its active master switching job. There can only be one Master event associated to any single switching plan.
- **Canceled** is the relationship type made between a Planned switching plan and a canceled master switching job. There can be any number of Canceled event associations to a single switching plan. These Canceled events were originally classified as Master events for the plan.
- **Planned** is the relationship type made between a Planned switching plan and a planned outage. A planned outage is an outage that was generated from a planned switching plan after the completion of an action recorded in the Steps section of the plan.
- **Forced** is the relationship type made between an Emergency switching plan and an unplanned outage or non-outage event. A Forced relationship will be made when recording

Real Time actions into an Emergency switching plan. The relationship can also be made when creating an Emergency plan for an event from the Work Agenda Jobs List or the Event Details display.

Soft associations only have one classification type:

- **Manual** is the relationship type made between a switching plan and a manually associated event. Manual associations are also made between plans if an outage is hard-associated to one plan and the outage is restored with another switching plan. The plan that recorded the restoration step will have the event automatically associated to it with a classification type of Manual. Grouped events can also cause switching plans to be manually associated.

Grouping Event Associations

When resolving outages in the network, it is common for events to be grouped together. When events are grouped, the associations will adhere to the following set of rules:

- If an event with no hard association consumes an event with no hard association, then the resulting event will have no hard association and its manual associations will be a combined list of both events' manual associations.
- If an event with a hard association consumes an event with no hard association, then the resulting event will have the surviving event's hard association and a combined list of both events' manual associations.
- If an event with no hard association consumes an event with a hard association, then the resulting event will have the consumed event's hard association and a combined list of both events' manual associations.
- If an event with a hard association consumes an event with a hard association, then the resulting event will have the surviving event's hard association and the consumed event's hard association will be listed as a manual association along with the combined list of both events' manual associations.
- If an event consumes another event with an association to the same switching plan, then the above rules will apply, but the plan will only be listed once in the event's association list. An event can only have one association to a specific switching plan.

Working with Switching Templates

Switching templates help you create switching plans when working with frequently performed switching sequences. You create switching templates in the Template Editor mode of the switching management display. Although templates look like standard switching plans, they are used for creating and saving "pre-built" step sequences.

Opening the Switching Templates List

The Switching Template list in the Work Agenda window contains a list of available switching templates. You can access the Switching Templates list in the following two ways:

- In the Work Agenda window, select **Switching Templates List** from the **File** menu.
- In the Switch Sheet Editor window, select **Template List** from the **Tools** menu.

Creating a Switching Template

Switching Templates can be created from the Switch Sheet Editor by following one of these sets of steps:

Option 1:

1. Load or create a switching plan within the Switch Sheet Editor.

2. Click on the **Save as Template** option from the File menu. A dialog opens asking you if you want to formalize the devices or not.
3. Click **OK** to save the sequence of steps with generic device names (e.g., OPEN device_0). This allows you to apply the exact steps to another relevant set of devices.
4. When you choose to formalize devices, you must use the Find/Replace Device dialog box to replace the generic device name with an actual device name. You cannot just edit the Description column of the switching step and type in a new device alias.
5. Click **No** to save the sequence of steps with the actual device names (e.g., OPEN TO_JO-12459).

Option 2:

1. Load or create a switching plan within the Switch Sheet Editor.
2. Select the **Copy** option from the **File** menu.
3. From the **Sheet Type** popup dialog, select **Template**.

Option 3:

- From the Switch Sheet Editor, select **New** and then **Template** from the File menu.

After a switching template has been created, you can turn the Record function on in Study mode and record any additional steps into the template.

Editing a Switching Template

You can edit templates in the Switch Template Editor, which is much like the Switch Sheet Editor, but only the Request and Steps sections are available for selection. Also, only the Description of Work field is editable on the Request section. Only switching templates may be loaded and altered within Study mode. It is not possible to record or execute steps from a template in Real Time.

To edit a switching template, complete these steps:

1. In the Work Agenda window, select **Switching Templates List** from the File menu.
2. Select the template from the list and click the **Open Steps** button.
3. Edit information in the switching template as necessary.
4. Save the switching template by selecting **Save** from the **File** menu.

Copying Steps from a Template

A template is used to copy switching steps contained in a template to a standard switching plan. The steps section is the only section that will be copied. To copy steps from a template into a switching plan, complete these steps:

- From the Work Agenda Switching Templates list,
 1. Open the **Switching Templates List** in the Work Agenda window.
 2. Create a new switching plan of the Planned type or load an existing switching plan.
 3. Highlight the row for the desired template within the Switching Templates List.
 4. Click the **Append Steps** button on Switching Templates List. The template steps are copied into the switching plan and are appended to the end of the list.

Note: You can repeat this process to insert steps from multiple templates into the same switching plan.
- Or, from the Template Editor,
 1. If a template is open in the Switch Template Editor, choose **Copy** from the **File** menu. The Sheet Type popup dialog opens.

2. Select the type of switching plan you wish the steps to be copied into. A new switching plan is created with a new plan number and the same steps.

Using the Miscellaneous Log

The Miscellaneous Log automatically records all real-time switching actions that are not recorded in another switching plan. The miscellaneous log does not need to be open for steps to be recorded; the system automatically detects when a step is performed that is not going to be recorded in any other switching plan. You can use the switching log as an alternative to emergency switching by recording switching steps without having to separate steps into different plans.

The system creates the log when you log in, and automatically saves the log when you log out. A log is created for each login session with a log number, date and time, and the user name for the user who is logged in.

Accessing the Miscellaneous Log

You can access Miscellaneous Logs in two ways:

- In the Work Agenda window, select the Misc List option from the File menu. From the Actions menu, select the Refresh option. Then select a miscellaneous log and click the **Open Misc Log** button.
- In the Switch Sheet Editor window, select Misc Log from the Mode menu. Enter the number of an existing log in the No field on the Miscellaneous Log window.

Miscellaneous switching logs have some of the same switching step features as the standard Switch Sheet Editor. You can edit, issue, and complete steps just as you would in a regular switching plan. It is also possible to cut steps from the Miscellaneous Log and paste them into another switching plan. This can be done through the standard Cut, Copy and Paste options found under the Edit Steps menu.

Viewing Switching Lists

The Work Agenda window allows you to view lists that contain switching information. The lists allow you to view various information including miscellaneous logs, switching plans, switching templates, and safety documents.

The lists that are important to performing switching operations include the following:

- **Switching Plan List**
- **Switching Templates List**
- **Misc List**

Switching Plan List

The Switching Plan List in the Work Agenda window displays a set of switching plans based on the selected filter and sort criteria. The Switching Plan List displays the following fields and buttons:

- The **Status** column contains the status of the switching plan. See **Switching Plan States** on page 14-2 for more information.
- The **Type** column contains the type of switching plan: Planned (Plan) or Emergency (Emer).
- The **Plan #** column contains the unique number associated with the switching plan.
- The **Feeder** column contains the feeder where the switching operation takes place.
- The **Start Date** column contains the date and time the switching plan is scheduled to begin.

- The **Alt Start Date** column contains the date and time the switching plan can begin if the plan cannot be scheduled for the original Start Date.
- The **Office** column contains the name of the office managing the switching work.
- The **Work Location** column contains the name or description of the area where the switching work is being performed.
- The **Substation** column contains the substation where the switching operation takes place.
- The **Device** column contains the device being worked on (not necessarily the device being switched).
- The **Voltage** column contains the highest voltage of the devices involved in the switching plan.
- The **Requested By** column contains the name of the individual or department that requested the switching plan.
- The **Requested Date** column contains the date on which the switching plan was requested.
- The **Associated Events** column contains the event numbers associated with the switching plan.
- The **Cust Interrupt** column indicates whether or not customers will be interrupted by this switching plan.
- The **Customer Name** column contains the customer's name that requested the interruption.
- The **Completion Date** column contains the date and time at which the switching plan was completed.
- The **Steps** column contains the number of steps the switching plan contains.
- The **Open Plan Request** button opens the selected switching plan into the Switch Sheet Editor and displays the Request section.
- The **Open Steps** button opens the selected switching plan into the Switch Sheet Editor and displays the Steps section.
- The **Refresh** button refreshes the view to display any new or updated switching plans. This button turns red when you make any state changes to any of the switching plans listed in this list. This button will not turn red when other users make changes. This is only relevant to your current session.
- The **Exit** button closes the Switching Plan List.

Filtering the Switching Plan List

The following table describes the Filter menu options of the Switching Plan List.

Option	Description
Default	Displays switching plans that are the Plan (Planned) type and have a status of Inp (In Progress), Sch (Scheduled) or Iss (Issued).
In Progress	Displays switching plans that have an Inp (In Progress) status.
Completed	Displays switching plans that have a Comp (Completed) status.
New Work	Displays switching plans that are of the Plan (Planned) type and have a status of New, Req (Requested), Pre (Prepared), Che (Checked), App (Approved), or Sch (Scheduled).

Option	Description
Active	Displays switching plans that have a status of New, Inp (In Progress), Pre (Prepared), Sch (Scheduled), Req (Requested), Iss (Issued), App (Approved), Che (Checked), CRej (Check Rejected), or Hold.
All	Displays switching plans that have a status of New, Inp (In Progress), Pre (Prepared), Sch (Scheduled), Req (Requested), Iss (Issued), App (Approved), Che (Checked), RRej (Request Rejected), CRej (Check Rejected), Completed, or Hold.

Switching Templates List

The Switching Templates List in the Work Agenda window displays a list of existing switching templates. Switching templates are created using the Switch Template Editor. You can use the Switching Templates List to locate a switching template and incorporate the steps from the template into a new switching plan. This list is not initially populated when it is displayed for the first time. The Refresh button will need to be selected to initially populate the list.

The Switching Templates List displays the following fields and buttons:

- The **Template #** column contains the unique number associated with the switching plan template.
- The **Steps** column contains the number of steps the switching plan template contains.
- The **Description** column contains the description of the switching plan template that was entered into the Description of Work field on the Switch Template Editor.
- The **Open Steps** button opens the Switch Template Editor, which allows you to view and edit the switching plan template.
- The **Append Steps** button appends the steps of the selected switching template into an open switching plan. This button appends the steps to the end of the steps list in the Switch Sheet Editor.
- The **Refresh** button is used to initially populate the list and can be subsequently used to refresh the view to display any new templates.
- The **Exit** button exits the Switching Templates List.

Misc List

The Misc List displays a list of all of the miscellaneous switching logs recorded in the system. Access this list by selecting Misc List from the File menu on the Work Agenda window. By default only logs with one or more steps will be listed. All the logs can be displayed by selecting the All option from the Filter menu. This list is not initially populated when it is displayed for the first time. The Refresh button will need to be selected to initially populate the list.

The Misc List displays the following fields and buttons:

- The **Log #** column displays the number of the miscellaneous switching log.
- The **Operator** column displays the user name of the person who created the miscellaneous switching log.
- The **Start Date** displays the date and time the miscellaneous switching log was created.
- The **Steps** column contains the number of steps the miscellaneous log contains.
- The **Open Misc Log** button opens the Switch Miscellaneous Log window, which displays the log.

- The **Refresh** button is used to initially populate the list and can be subsequently used to refresh the view to display any new miscellaneous switching logs.
- The **Exit** button exits the Misc List.

Maintaining Safety Documents

Safety Documents in the Oracle Utilities Network Management System are an electronic representation of the paper safety documents used for switching operations. Safety documents provide information about a particular operation and record the issuance and release of tags on devices. For switching operations, safety flags are first physically placed on devices, and then the safety document is issued. This effectively gives the crew permission to begin work. When the work is completed, the safety document is released, warning the crew that they must stay clear. Once the safety document is released, safety flags may be removed from the devices and the switches may then be closed.

Safety documents are a component of Oracle Utilities Network Management System - Switching Management. You can associate safety documents to switching plans and you can print a hard copy of a safety document for your records.

This section includes the following topics:

- **Understanding Safety Documents**
- **Creating and Editing Safety Documents**
- **Associating Safety Documents with Switching Plans**
- **Searching for Safety Documents**
- **Viewing the Safety Document List**

Understanding Safety Documents

A utility often has pre-defined safety documents established in their safety policy. While utilities often have specific names for these safety documents, Oracle Utilities Network Management System Switching Management has five types of safety documents that a utility can use to represent their established safety documents. This section describes five common safety document types:

- **Clearance** - indicates that clearance for work on a device or in an area has been obtained from the proper authority.
- **Hold** - indicates that the tagged device(s) should not be operated (e.g., if the device is open, it should remain open).
- **Hot Line** - indicates that hot line work is being performed, and if the tagged device(s) is opened, it should not be closed again until the safety document is released.
- **Information Note** - provides some pertinent information about the tagged device(s).
- **Warning Tag** - is like an Information Note and provides some pertinent information about the tagged device(s).

While safety document names and features may vary, understanding these five types will help you understand the general use of most safety documents. Crews typically “own” safety documents and must authorize their release when they are finished working in an area or on a device.

Clearance Safety Documents

Clearance safety documents indicate that clearance for work has been obtained from the proper authority. The proper authority might be a control center supervisor or a regional dispatcher. Clearance documents imply that the device or area that requires work has been made safe to work on or in.

Hold Safety Documents

Hold safety documents are used when the device is to be “held open” or “held closed” in order to complete work in an area of the distribution system. The purpose of the Hold safety document is

to protect crew members and prevent injury to human life. Hold safety documents are placed and removed by individuals who have authority over a specific area or operation and serve to restrict the operation of a device.

Hot Line Safety Documents

Hot Line safety documents indicate that a crew is performing hot line work in the area (e.g., live wires). When Hot Line safety documents are present, device operations in the area should be performed with caution.

Information Note Safety Documents

Information Note safety documents are for informational purposes only. These safety documents do not restrict operation of the device, but provide information that a crew member or utility employee should be aware of when working on the device(s).

Warning Tag Safety Documents

Like Information Note safety documents, Warning Tags are for informational purposes only. These safety documents do not restrict operation of the device(s) and provide information that a crew member or utility employee should be aware of when working on the tagged device(s).

Creating and Editing Safety Documents

The Safety Document window allows you to create and edit safety documents. This window also allows you to associate safety documents with switching plans. The menu options, fields, and buttons are the same for all safety documents except for the Information Note and Warning Tag Safety Documents. These documents do not have the Ground Locations or Feeder fields.

This section includes the following topics:

- **Preparing New Safety Documents**
- **Opening an Existing Safety Document**
- **Editing the Device List**
- **Copying Safety Documents**
- **Saving Safety Documents**
- **Issuing Safety Documents**
- **Releasing Safety Documents**
- **Associating Safety Documents with Switching Plans**
- **Disassociating a Safety Document**
- **Searching for Safety Documents**
- **Viewing the Safety Document List**

Preparing New Safety Documents

You can prepare new safety documents in two ways:

- In an open safety document, select **New** from the File menu. The Create New Document dialog box opens. To open a blank safety document, double click the document type or single click the document type and click **OK**.
- In the Switch Sheet Editor window, select **Create New Safety** from the Tools menu. A submenu appears allowing you to select the document type. When you create a new safety document from a switching plan, the device list will be automatically populated with a list of devices that were used to build the switching steps in the switching plan. Typically, not all

devices are required in the safety document, but it is easy to delete the unneeded devices. All fields remain editable.

- See **Safety Document Window** on page 14-42 for field descriptions.

Opening an Existing Safety Document

You can open existing safety documents from multiple windows.

- **From the Safety Document window:**
 - Select **Open** from the File menu. A dialog box opens listing the safety document types.
 - In the Document Types list, select a document type.
 - In the Existing Document Number field, enter the number of an existing safety document.
 - Click **OK**.
- **From the Work Agenda window:**
 - Select Safety Doc List from the File menu.
 - From the list, select the safety document that you wish to open and click the **Open** button. It may be necessary to select the **Refresh** button in order to see the latest list of safety documents.
- **From the Switch Sheet Editor:**
 - If a safety document is associated with the switching plan, double-click on the safety document number in the header section.
 - From the Record Safety dialog, select the top button, which will have the safety document type and number on it.
- **From the Control Tool:**
 - For active safety documents, double click on a device within the Viewer window.
 - From the Control Tool, select the **Safety Document(s)...** button.
 - If multiple safety documents are currently active on this device, then a list will be displayed. You then have the option to select which safety document you want to load. If only a single safety document is active on this device, then the safety document will display.

See the next section for more information about the Safety Documents window.

Safety Document Window

The Safety Document window displays the following fields and buttons:

- The **[Safety Document Type] #** field indicates the type of safety document and lists the safety document number. This field is color-coded based on the safety document type.
- **Devices** and **Phases** display the device(s) and their phases that the safety document is associated with. A safety document must include at least one device or have an entry in the Other Equipment field.
- **Other Equipment** is a text field that allows you to enter any additional equipment (not included in the model) that the safety document applies to. An entry in this field or the Devices field is required.
- **Description** is a text field that allows you to enter notes for the safety document.
- **Ground Locations** is a text field that allows you to enter a list of grounding locations.
- **Feeder** is a text field that allows you to enter in a feeder name.

- **Name** displays the name of the crew that is responsible for the safety document. This field is required when issuing a safety document. This field is also auto-populated from Switching Management when a safety state transition switching step is initiated. The value within the switching step's Instructed To field will be populated into this field.
- **Phone** displays the telephone number for the crew responsible for the safety document.
- **ID** displays the Identification name or number for the crew.
- **Pager** displays the pager number for the crew.
- **Audit Log** lists the date and time of each state change. It also lists the user name for the person that caused the state change and which crew was being issued or released during the change.

Buttons

- The **Record On/Off** button ([X], [X]) allows you to toggle the record function on and off. When the record function is on, you can select devices in the Viewer to add to the safety document device list.
- The **Add Device** button opens a dialog box, which allows you to manually enter a device to add to the device list for the safety document. Only modeled devices may be entered and added to the device list.
- The **Delete Device** button deletes the selected device(s) from the device list.
- The **Change Phases** button opens a dialog box, which allows you to change the phases recorded with the device alias.
- The **Issue** button issues the safety document. A safety document symbol displays next to the device(s) in the Viewer window.
- The **Unissue** button undoes the Issuing of the safety document. This action will be logged and should be used as a means of altering the device list within the safety document. This allows the area the safety document encompasses to be altered after the document has been issued.
- The **Release** button releases the safety document. The safety document symbol is removed from the device(s) in the Viewer window.
- The **Complete** button completes the safety document and locks the document from further editing.
- The **Copy** button creates a new safety document and copies the contents of the currently opened safety document into the newly created document. The Audit Log is not copied.
- The **Delete** button sets the state of the document to Deleted. This option is only available prior to the document being issued for the first time.
- The **Exit** button closes the Safety Document window.

Safety Document Window Menus

The following table describes the menus of the Safety Document window.

- **File Menu**
 - **New** - Opens the Create New Document dialog box, allowing you to select which type of safety document you would like to create.
 - **Open** - Opens an existing safety document. A dialog box opens, allowing you to select the type of safety document and enter the safety document number.
 - **Save** - Saves the safety document.
 - **Copy** - Creates a new safety document and copies the contents of the currently opened safety document into the newly created document. The Audit Log is not copied.

- **Find...** - Opens a Find Safety Document dialog. The dialog can be used to search for safety documents based on their type and/or number.
- **Print** - Opens the Print dialog box, allowing you to print a snapshot or a PostScript version of the safety document to a printer.
- **Exit** - Closes the Safety Document window.
- **Action Menu**
 - **Record** - Toggles the record function on, which allows you to select devices in the Viewer to add to the safety document device list.
 - **Issue** - Issues the safety document. A safety document symbol appears next to the device(s) in the Viewer.
 - **Unissue** - Undoes the Issuing of the safety document. This action will be logged and should be used as a means of altering the device list within the safety document. This allows the area the safety document encompasses to be altered after the document has been issued.
 - **Release** - Releases the safety document and removes the safety document symbols from the device(s) in the Viewer.
 - **Complete** - Completes the safety document and locks the document from further editing.
 - **Delete** - Sets the state of the document to Deleted. This option is only available prior to the document being issued for the first time.
 - **Associate** - Associates the safety document with a switching plan.
 - **Disassociate** - Disassociates the safety document from the switching plan.
 - **Switching...** - Selecting this button will load the associated switching plan.
- **Mode:**
 - **Real Time** - Changes to real-time mode, which applies the safety document symbols to the devices in Real Time.
 - **Study** - Changes to study mode, which applies the safety document symbols to the devices in Study mode.
 - **View Only** - Changes the window to view only mode. You cannot edit a safety document while it is in the view only mode. This option will be auto selected when the Safety Document is locked and being edited by another user. A dialog will be issued to you indicating that another user is editing the document. If the Safety Document is loaded from a view only switching plan, then this option will be auto-selected again.

Editing the Device List

You can add or delete devices from the safety document device list in two ways:

- Click the **Add Device** button on the safety document and enter the appropriate device identification. To delete a device from the device list, select the device and click the **Delete Device** button.
- With “Record” toggled on in the safety document, select a device in the Viewer window. If the Viewer and Safety Document are both in the same mode (real-time or study), the device is added to the device list. Clicking the device again, from the Viewer, deletes it from the device list.

You can alter the devices’ recorded phases as well.

- Click the **Change Phases** button on the safety document. A dialog will be presented to you allowing you to select a new set of phases. Only valid phases for the device shown will be selectable.

Copying Safety Documents

You can copy safety documents by clicking the **Copy** button on the safety document itself, or by selecting the safety document in the Work Agenda Safety Documents list and clicking the **Copy** button. Copying creates a new safety document of the same type and same device list, with a new document number. All of the text fields are copied as well, except for the Audit Log, which is cleared.

Saving Safety Documents

You can save a safety document by choosing Save from the File menu. When you close a document after making changes, the system prompts you to save. Certain fields, such as the Devices list or the Other Equipment field, are required in order to save.

Issuing Safety Documents

To issue a safety document, the document must be open and all required fields must be completed. Each device affected by the safety document requires a Safety Flag (SF) placed upon it prior to the safety document being issued. A Safety Flag is a flag that is placed upon the device from the Control Tool. Click the **Place Safety Flag** button from the **Control Tool Tag / Flag** option menu.

Alternatively, safety documents are issued when switching steps that involve safety documents are instructed or completed. Once a safety document is issued, you cannot complete, delete, or reissue the safety document. The Description and Ground Locations text fields remain editable. The only button options available are Unissue and Release. A symbol appears on all devices in the Viewer that are specified in the safety document to indicate that the safety document has been issued. For example, the Clearances symbol (below) appears next to the device to indicate that the device, listed on a Clearance safety document, has been issued.

Releasing Safety Documents

To release a safety document, the document must already be issued. You can release a safety document by clicking the **Release** button in the open safety document. The symbol for the safety document disappears from the device and the Safety Flag is placed back onto the device. Alternatively, safety documents are released when switching steps that involve releasing safety documents are instructed or completed.

The Description and Ground Locations text fields remain editable, and now the Crew Info fields have become editable again. At this point the Safety Document can either be reissued to a different crew or it can be completed.

Associating Safety Documents with Switching Plans

Safety documents can be associated with switching plans. You can enter the issuance or release of a safety document as steps in the steps section of the switching plan. All safety documents associated with a switching plan are listed in the header on the Switch Sheet Editor. You can open a safety document by double-clicking on the safety document number.

Safety documents can be associated to only one switching plan at a time. A safety document cannot be disassociated or its association changed if it has any actively recorded switching steps.

There are three ways to associate a safety document with a switching plan:

- Any time you create a safety document from the Switch Sheet Editor, the newly created safety document is automatically associated to the currently opened switch plan.

- In the Safety Documents list in the Work Agenda window, click the **Associate** button. A dialog box opens, allowing you to associate the safety document with a switching plan.
- From the safety document, you can select the Associate option from the Action menu. A dialog box opens, allowing you to associate the safety document with a switching plan.

Disassociating a Safety Document

There are two ways to disassociate a safety document from a switching plan:

- From the switching plan, double-click the safety document name in the header panel on the Switch Sheet Editor. Click the **Disassociate** button in the Record Safety dialog box to remove the safety document from the list and remove its association with the switching plan.
- From the safety document, you can select the Disassociate option from the Action menu.

Searching for Safety Documents

Since safety documents are associated to physical tags in the field, it is sometimes necessary to look up a safety document number called in by a crew member. The Find Safety Document dialog can help with this task.

Searching for a Document Number

You can initiate the Find Safety Document dialog from either the Safety Document List or from any of the five safety document types.

- Initiating find from Safety Document List
 - Select the **Find...** option from the Actions menu.
- Initiating find from Safety Document display.
 - Select the **Find...** option from the File menu.

Once the Find Safety Document dialog is displayed, you have the option of entering a value within the Document Type and/or the Document # field. Once your search criteria have been specified, select the **Search** button.

The results of the search are displayed in the list found just below the search criteria fields. The number of documents found is also be specified. From the list, find your specific document and select it. After it has been selected, select the Load button to load the document into the Safety Document display.

Use the **Clear** button to clear the list or select Cancel to cancel the search.

Viewing the Safety Document List

A Safety Document List is available in the Work Agenda window. To access the list, click the Safety Doc List button on the Environment Manager. (This button is only available for certain user types.) You can perform a number of actions for a safety document in the Safety Documents List, such as opening or releasing a safety document.

The Safety Document List contains the following information:

- The **Color Enable / Disable** toggle button turns coloring of the rows on and off within the list. The color coincides with the Safety Document type. Coloring within this list is not state driven.
- The **Type** column contains the type of safety document.
- The **Doc #** column contains the unique number associated with the safety document.
- The **Status** column contains the current state of the safety document (e.g., Issued).

- The **Plan #** column contains the number of the switching plan that the safety document is associated with. A value of '0' indicates no association.
- The **Issued By** column contains the user name of the user that issued the safety document.
- The **Issued Date** column contains the date and time the safety document was issued.
- The **Crew Name** column contains the name of the crew member responsible for the safety document.
- The **Crew ID** column contains the unique identification name or number for the crew.
- The **Crew Phone** column contains the telephone number for the crew.
- The **Crew Pager** column contains the pager number for the crew.
- The **Released By** column contains the user name of the user that released the safety document.
- The **Released Date** column contains the date and time the safety document was released.
- The **Completed By** column contains the user name of the user that completed the safety document.
- The **Completed Date** column contains the date and time the safety document was completed.
- The **Open** button opens the selected safety document.
- The **Release** button releases the selected safety document.
- The **Copy** button creates a new safety document and copies the contents of the currently selected safety document into the newly created document and displays the newly created safety document.
- The **Print** button opens the Print dialog box, allowing you to print a snapshot or a PostScript version of the safety document to a printer.
- The **Associate** button opens a dialog box, which allows you to enter the number of the switching plan to associate the safety document with. If the safety document is already associated with a switching plan, the switching plan number displays in the dialog box.
- The **Open Plan** button opens the Switch Sheet Editor for the switching plan associated with the safety document, if any.
- The **Refresh** button refreshes the list of safety documents. The Safety Doc List is not dynamically updated, so it is necessary to click the **Refresh** button to view the latest list of safety documents.
- The **Exit** button closes the Safety Doc List.

Filtering the Safety Document List

Use the Filter menu options to control which documents are displayed in the list. The options are:

- **Issued** displays safety documents that are in the issued state.
- **Released** displays safety documents that are in the released state.
- **Completed** displays safety documents that are in the completed state.
- **Deleted** displays safety documents that are in the deleted state.
- **Planned** displays safety documents that are in the initial, unissued and released states.
- **Active** displays safety documents that are in the initial, issued, unissued and released states.
- **All** displays safety documents that are in the initial, issued, unissued, released and completed states.

Chapter 15

Web Switching Management

This chapter describes the Oracle Utilities Network Management System Web Switching Management application. It includes the following topics:

- **Overview**
- **Starting Web Switching Management**
- **Planned Switching**
- **Emergency Switching**
- **Event Associations**
- **Working with Safety Documents**
- **Using the Miscellaneous Log**
- **Viewing Global Overlaps**
- **Outage Correction**

Overview

Oracle Utilities Network Management System Web Switching Management allows you to create and implement switching sheets and safety documents. Switching sheets allow you to track proposed switching actions, analyze the results, and implement the plan. You can record switching actions, such as device-tagging operations, from the Control Tool into a switching sheet as steps. For planned switching, you can play back steps repeatedly in Study mode, then complete them once in Real-Time Mode. For emergency switching, you can create a record of operations as you perform them. You can also copy frequently used switching step sequences using switching templates.

Web Switching Management also allows you to create and load safety documents. At least one safety tag step must be present in a switching sheet before a safety document can be created. Safety documents must be associated to switching steps. Web Switching Management ensures that all of the associated safety documents have been released before allowing a switching plan to be completed.

Switching Sheet Types

Web Switching Management supports three basic types of switching sheets.

- **Planned** - Used for switching sequences that are prepared ahead of time. In scheduled or planned switching, you can create, study, and approve switching steps in a Viewer in Study Mode prior to completing them in real-time. Planned switching sheets require information that is not needed for emergency switching sheets, such as a start and end date.

- **Emergency** - Used for switching sequences that are prepared and implemented in real-time when overloads or unplanned outages occur.
- **Template** - Used to record and store frequently performed switching step sequences that can be copied into a switching plan. A template is not used to perform actions, but rather to create and save “pre-built” step sequences. You can create a template from scratch or by copying an existing Planned or Emergency switching plan.

Note: Outage Correction sheets are not included here, as they are used with the outage correction functionality, which are described later in this chapter. Additional or alternative sheet types can be created by the customer.

Switching Sheet States

A switching sheet passes through different phases during the creation and completion of the sheet. These phases are represented by “states” that follow a logical sequence and determine what you can do with a switching sheet at any time. Each sheet type has a unique set of state transitions. For example, planned switching sheets have more state transitions than emergency sheets.

Normal Progression of Planned Sheet	Normal Progression of Emergency Sheet
1. New	1. New
2. Requested	2. EmergInProgress
3. Prepared	3. Completed
4. Checked	
5. Approved (optional)	
6. Scheduled	
7. Issued	
8. In Progress	
9. Completed	

See **Changing the Switching Sheet State** on page 15-16 for a complete description of each possible state and instructions for changing the sheet state.

Note: The state of the switching plan should not be confused with the state of individual switching steps within the switching plan, which may also progress through a series of states. See **Switching Sheet Step States** on page 15-25.

Operating Modes

Web Switching Management supports two operating modes:

- **Real-Time Mode** - Allows you to make real-time changes to the state of devices in the system. When you create an emergency switching sheet, the system automatically enables Real-Time Mode. For planned sheets, you can switch to this mode when the sheet is ready to be worked.
- **Study Mode** - Allows you to make changes without affecting real-time data. You can apply the actions to the steps, but the actions are not applied to the real-time data. This mode is valid for all types of sheets. Study Mode is the only valid mode for switching sheet templates.

Starting Web Switching Management

You can run Web Switching Management in two ways:

- **Web Switching with Operator's Workspace** – To use this method, you must log into both Operator's Workspace and Web Switching using the same user ID.
- **Web Workspace with Web Switching** – This method integrates both products into one environment so that only one login is required.

The system supports the capability for some users on a site to use the Web Switching with Operator's Workspace environment and others to use the Web Workspace with Web Switching environment. However, a single user cannot be logged in to the both environments under the same user ID.

Note: Check with your system administrator to verify that your system has been configured to support Web Switching and to obtain any special login instructions.

Logging in to Web Switching with Operator's Workspace

When using Web Switching with Operator's Workspace, you must log in to both environments, but it does not matter which one you start first. For instructions on logging in to Operator's Workspace, see **Logging In** on page 1-7.

To log in to Web Switching so as to connect to your Operator's Workspace, follow these steps:

1. Depending on how your system was installed, do one of the following:
 - Click the **Web Switching** icon found under the appropriate program group in your Windows Start Menu.
 - Double-click the **Web Switching** icon on your desktop.
 - Open a web browser and type the Web Switching URL in the browser's Address field. Select the **Web Switching** option.

The Web Switching Login window displays.

2. Enter the user name you used to log into the Operator's Workspace application.
3. Enter the password.
4. Click the **Validate** button. The bottom portion of the Web Switching Login window sensitizes.
5. Select the appropriate User Type from the drop-down menu.
6. Click the **Login** button. Once you have successfully logged on, the Switching Management window is displayed, and the Welcome tab is active.

Logging in to Web Workspace with Web Switching

To log in to Web Workspace with Web Switching, follow these steps:

1. Depending on how your system was installed, do one of the following:
 - Click the **Web Workspace with Web Switching** icon found under the appropriate program group in your Windows Start Menu.
 - Double-click the **Web Workspace with Web Switching** icon on your desktop.
 - Open a web browser and type the Web Workspace with Web Switching URL in the browser's Address field. Select the **Web Workspace with Web Switching** option.

The Web Switching Login window displays.

2. Enter your user ID.

3. Enter the password.
4. Click the **Validate** button. The bottom portion of the Web Switching Login window sensitizes.
5. Select the appropriate User Type from the drop-down menu.
6. Click the **Login** button. Once you have successfully logged on, the Web Workspace with Switching Management window displays the Work Agenda, Authority, and Web Switching tools. (Web Switching is available through the Welcome tab. Environment Manager (Eman) options are available from the toolbar.)

Understanding the Switching Management Window

This section provides an overview of the Switching Management window. It includes the following topics:

- **Menu Options and Toolbar Buttons**
- **Switching Management Tabs**
- **Status Bar**

Related Topics:

- **Planned Switching**
- **Emergency Switching**
- **Working with Safety Documents**

Menu Options and Toolbar Buttons

When using Web Switching without Web Workspace (considered ‘stand-alone mode’), the Switching Management menu and toolbar provide access to available Web Switching actions only. The main toolbar is displayed at the top of the Switching Management window.

When using Web Switching with Web Workspace, the menu and toolbar options provide access to both Web Workspace and Web Switching actions.

The main menu and toolbar options are described in the following table.

Note: Some tabs, such as the Steps and External Documents tabs, contain toolbars as well. Those toolbars are discussed in the appropriate sections later in this document.

To perform this action...	Select this menu option	Or click this button
Create a planned, emergency, or template switching sheet	File > New...	
Open an existing switching sheet or safety document	File > Open...	
Save the changes made to the current switching sheet that currently has focus	File > Save Sheet	
Note: Switching sheets are automatically saved when the sheet state changes or when steps are recorded, instructed, completed, or added		

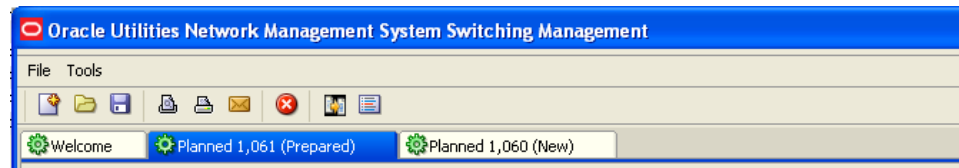
To perform this action...	Select this menu option	Or click this button
Preview printing of the switching sheet	File > Print Preview...	
Print the switching sheet.	File > Print...	
Send the switching sheet in an email	File > Email...	
Exit Switching Management (standalone mode only)	File > Exit	
Logout of Web Workspace with Web Switching (Web Workspace with Web Switching only)	File > Logout	
Place Web Switching into View Only mode	View > View Only	
View all events	Tools > Work Agenda > All	
View all unassigned events	Tools > Work Agenda > To Do	
View all events in progress by a crew	Tools > Work Agenda > In Progress	
View all incomplete events	Tools > Work Agenda > Incomplete	
View all complete events	Tools > Work Agenda > Completed	
Start Viewer 1	Tools > Viewers > Viewer 1...	
Start Viewer 2	Tools > Viewers > Viewer 2...	
Switch Viewers to phase based coloring	Tools > Viewers > View Phases	
Switch Viewers to feeder based coloring	Tools > Viewers > View Feeders	
Open the note list summary	Tools > Summaries > Note Summary...	
Open the tag list summary	Tools > Summaries > Tag Summary...	
Open a list of SCADA measurements	Tools > Summaries > SCADA Summary...	
Open a list of devices in abnormal states	Tools > Alarms and Devices Lists > Abnormal Devices List...	
Open a list of device operations	Tools > Alarms and Devices Lists > Device Operations List...	

To perform this action...	Select this menu option	Or click this button
Open a list of SCADA alarms	Tools > Alarms and Devices Lists > SCADA Alarms List...	
Open a list of System alarms	Tools > Alarms and Devices Lists > System Alarms List...	
Open the control zone authority window	Tools > Authority...	
Open the icon view of crews	Tools > Crew Actions...	
Open the crew administration window	Tools > Crew Admin...	
Open a list of crews	Tools > Crew List...	
Open a window to create a new event	Tools > Crew Event...	
Save current user preferences	Tools > User Preferences...	
Open the user log	Tools > User Log...	
Open a window to manage the list of documents associated with devices	Tools > Manage Documents...	
Activate the Global Overlaps Tool	Tools > Switching Overlaps	
Load the Miscellaneous Log	Tools > Miscellaneous Log	

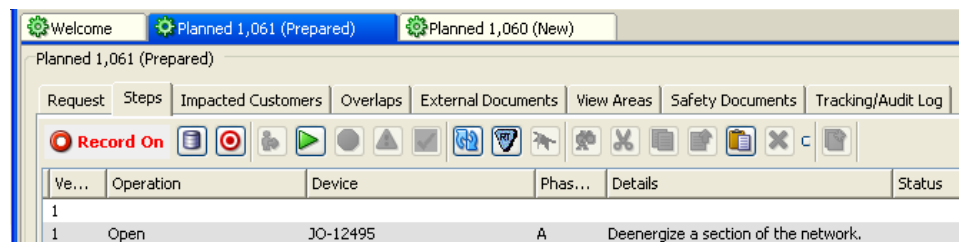
Switching Management Tabs

When you start Web Switching Management, the Welcome tab appears. Each time you create or open a new switching sheet, the sheet is displayed in a separate tab. The label on the tab displays the type of sheet (Planned, Emergency, or Template), the sheet ID, the status of the sheet (in parentheses), and the value of the Feeder field on the Request tab. The active tab displays in blue. Click a tab to make it the active tab.

Note: When using Web Switching with Web Workspace, you can double-click on the tabs to maximize the Web Switching frame. Double-click again to restore to the original size.



Each switching sheet tab displays a row of tabs that you can use to view and edit all of the information associated with the sheet.



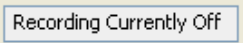
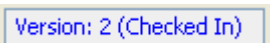
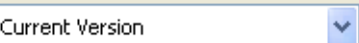
The following table describes the tabs displayed for each switching sheet.

Tab	Description
Request	Use this to view and enter information about the user who requested the switching sheet, including phone number and contact, the sheet's owner, charge number, start and finish dates, feeder and voltage information. See Completing the Request Tab on page 15-14.
Steps	Use this to view, add, and edit switching steps. See Adding and Editing Steps on page 15-19.
Impacted Customers	Use this to view, print, and maintain the list of impacted customers. See Viewing Impacted Customers on page 15-38.
Overlaps	Use this to identify any overlap of date/time, control zone, or affected devices within a specific time period. See Checking for Overlaps on page 15-41.
External Documents	Use this to attach external documents to the switching sheet. See Adding External Documents to a Switching Sheet on page 15-48.
View Areas	Use this to save and reload viewing areas from a Viewer window. See Saving and Loading View Areas on page 15-43.
Safety Documents	Use this to view, load, and delete safety documents that have been defined for this sheet. See Working with Safety Documents on page 15-53.

Tab	Description
Tracking/Audit Log	Use this to view audit log entries associated with this sheet. See Viewing the Audit Log on page 15-46. You can also use this to view the current sheet state or transition to another state. See Changing the Switching Sheet State on page 15-16.

Status Bar

A status bar appears at the bottom of each switching sheet. The items on the status bar are described in the following tab.

Status Bar Indicator	Description
 	Indicates the current operating mode: Study Mode - Allows you to complete switching operations without affecting the real-time data model. You can apply the actions to the steps, but the actions are not applied to the real-time data. Real-Time Mode - Allows you to apply real-time changes to the state of devices in the data model.
	Indicates whether the switching sheet will result in overlap of affected devices or control zones during the same time period. This icon is dynamically updated to reflect the results of overlap checking. If this indicator is grayed, then there are no overlaps.
	Indicates whether or not switching operations will impact customers. This icon is dynamically updated to reflect the results of generating the impacted customer list. If this indicator is grayed, then no customers are affected by the switching sheet operations.
 	Indicates whether recording is turned on or off. When recording is on, you can add steps by taking actions in the Viewer and Control Tool.
 	Indicates the switching sheet version and whether or not your latest changes have been checked in. See Working with Switching Sheet Versions on page 15-36 for more information.
	Allows you to check in (save) any changes you've made to this sheet. If this button is grayed, then no changes have been made since the last check in. See Working with Switching Sheet Versions on page 15-36 for more information.
	Indicates the version currently displayed and allows you to select a previous version to compare against the current version. See Working with Switching Sheet Versions on page 15-36 for more information.

Status Bar Indicator	Description
	Allows you to lock the switching sheet so that no other user can make changes to it. When the sheet is locked, you are the only user who can edit it. When it is unlocked, you are in view-only mode and the sheet is available for editing by other users. This button toggles the sheet between locked and unlocked state.
 Lock and Unlock	When you open a sheet for editing, the sheet is automatically locked to other users. If you open a sheet that is currently being editing by another user, the mode is automatically set to View Only and you are not allowed to make any changes. You can also lock or unlock all loaded sheets using the File>View Only menu option. A checkmark next to this menu option indicates that all loaded sheets are in view-only mode. You cannot lock a sheet when in view-only mode.

Planned Switching

The sections that follow describe how to create and manage planned switching sheets. Planned switching sheets are used for switching sequences that are prepared ahead of time. In scheduled or planned switching, you can create, study, and approve switching steps in a Viewer in Study Mode prior to completing them in Real-Time Mode.

This section contains the following topics:

- **Creating a Planned Switching Sheet**
- **Opening an Existing Switching Sheet**
- **Completing the Request Tab**
- **Changing the Switching Sheet State**
- **Adding and Editing Steps**
- **Reviewing a Switching Sheet in Study Mode**
- **Replaying Steps**
- **Implementing a Planned Switching Sheet**
- **Working with Switching Sheet Versions**
- **Viewing Impacted Customers**
- **Checking for Overlaps**
- **Saving and Loading View Areas**
- **Emailing Switching Sheet Data**
- **Adding External Documents to a Switching Sheet**
- **Viewing the Audit Log**

For information about emergency switching sheets, see **Emergency Switching** on page 15-50.

Creating a Planned Switching Sheet

You can create a new planned switching sheet directly from the Web Switching Management application. If you are running Web Switching with Operator's Workspace, you can also create a new plan from the Oracle Utilities Network Management System Environment Manager.

- From the Switching Management File pull-down menu, click **New...** The New window is displayed.
- From the Operator's Workspace Environment Manager, click the **New Switching Sheet** button. The New window is displayed.

Note: The Web Switching Management application must have already been started in order to initiate a switching sheet from Environment Manager. (See **Starting Web Switching Management** on page 15-3.)

New Window

Use the New window to create switching sheets. This window contains the following fields and buttons:

- The **Type** column displays the types of switching sheets you can create. Planned, Emergency, and Template are the base types.
- The **Description** column displays a description of the sheet type.

The **Pre-Created Switching Sheets** section displays a list of all existing switching sheets. It displays the following columns:

- **Status** displays the switching sheet state, such as New or Requested.
- **Type** displays the sheet type, such as Planned, Emergency, or Template.
- **Sheet #** is the number of the switching sheet. This number is automatically assigned by the system when the sheet is created.
- **User** is the ID of the user who created the sheet.
- **Feeder** is the feeder associated with the sheet (as displayed on the Request tab).
- **Device** is the device associated with the sheet (as displayed on the Request tab).
- **Substation** is the substation associated with the sheet (as displayed on the Request tab).
- **Completed Date** is the completion date for the sheet.
- **Description** is the description of the sheet (as displayed on the Request tab).
- The **Create** button creates a new switching sheet of the selected type.
- The **Create a Copy** button creates a copy of the switching sheet selected in the **Pre-Created Switching Sheets** list. This button is not enabled unless a switching sheet and a sheet type are selected.

See Also:

- **Creating a Planned Switching Sheet**
- **Filtering the Switching Sheet List**
- **Sorting the Switching Sheet List**
- **Creating a Switching Sheet from a Template**
- **Creating a Switching Sheet from a Template**

Creating a Planned Switching Sheet

Follow these steps to create a planned switching sheet from the New window:

- To create a new switching sheet from scratch, select Planned from the Switching Sheet Types section, and then click **Create**.
- To create a copy of an existing sheet, do the following:
 1. Select the sheet you want to copy from the Pre-Created Switching Sheets list.
 2. Select Planned from the Switching Sheet Types list.
 3. Click **Create a Copy**. (To search for a particular sheet, see **Filtering the Switching Sheet List** on page 15-12.)

Note: You can create a new sheet based on a sheet of a different type. For example, you can create a planned sheet based on an emergency sheet or create a template based on a planned sheet.

Note: Although most fields are copied to the new sheet, some fields (such as Audit Log entries and step completion information) are cleared in the new sheet. If you copy a switching sheet that has one or more safety documents, the safety documents are copied to the new sheet.

Filtering the Switching Sheet List

Use the edit boxes at the top of each column to filter the list. Type all or part of the text you want to filter by. For example, to see only Planned sheets, type “Plan” in the Type edit box. The list is filtered to display only sheets where the Type column contains the characters “Plan.” You can combine filter criteria by typing values in more than one column. As you type in each edit box, the list is filtered immediately based on entries in all boxes.

Sorting the Switching Sheet List

You can resort the list by clicking on a column header. Click once to sort in ascending order; click again to sort in descending order. A ▲ or ▼ icon indicates the current sort column and sort direction (▲ indicates ascending order; ▼ indicates descending order).

Creating a Switching Sheet Template

Switching templates look like standard switching sheets, but they are used for creating and saving “pre-built” step sequences. Once you save the template, you can create a copy of it, and then edit the copy as needed. You can also copy individual steps from a template and paste them into another switching sheet. Templates can save you considerable time and effort when you are working with frequently performed switching sequences.

To create a template:

1. From the Web Switching Management File pull-down menu, click **New...** The New window is displayed.
2. From the Switching Sheet Types section at the top of the window, select Template.
3. Do one of the following:
 - To create a new, blank template, click **Create**.
 - To create a template based on an existing sheet, select the sheet you want to copy from the Pre-Created Switching Sheets list, and then click **Create a Copy**. To search for a particular sheet, see **Filtering the Switching Sheet List** on page 15-12.

Note: Although most fields are copied to the new sheet, some fields (such as Audit Log entries and step completion information) are cleared in the new sheet.

Creating a Switching Sheet from a Template

After a switching template has been created and saved, you can use the template as the basis for another switching sheet.

To create a new planned sheet from a template:

1. From the Web Switching Management **File** pull-down menu, click **New...** The New window is displayed.
2. From the Switching Sheet Types section at the top of the window, select Planned.
3. From the Pre-Created Switching Sheets list, select the template to use.
4. Click **Create a Copy**.
5. Edit the sheet as needed (see the instructions in the remainder of this guide) and save when you are done.

Opening an Existing Switching Sheet

Depending on how a switching sheet is being worked, there are a number of ways for you to load an existing switching sheet.

- **From Web Switching Management**
- **From any of the Work Agenda Jobs Lists**
- **From the Event Details**
- **From the Crew List**
- **From the Crew Actions**
- **From the Control Tool**

From Web Switching Management

To open a switching sheet from the Switching Management window:

1. From the Web Switching Management **File** pull-down menu, click **Open...** The Open window is displayed, and the Web Switching tab is active.

Note: This tab displays the same columns as the **New Window**, with one addition: the Owner column displays the ID of the user who owns the sheet. This tab also supports filtering and sorting. (See **Filtering the List** on page 15-42 and **Sorting the List** on page 15-42.)

2. Select a sheet and click **Open**.

From any of the Work Agenda Jobs Lists

1. Select an event from one of the Events Lists that has a switching sheet associated to it. This can be determined by checking to see whether a switching sheet number is displayed within the Plan # column for the selected event.
2. Select the **Switching...** button from the **Actions** pull-down menu.

If only one switching sheet is actively open on the device, then that sheet is displayed in the Switching Management window. If the device is involved in multiple active switching sheets, the Load or Create Switch Sheet dialog displays a list of switching sheets. Select the sheet number you want to load and click **OK**.

From the Event Details

If the Switching Sheet # field on the Event Details display is not blank, select the **Switching...** button. If only one switching sheet is actively open on the device, then that sheet is displayed in the Switching Management window. If the device is involved in multiple active switching sheets, the Load or Create Switch Sheet dialog displays a list of switching sheets. Select the sheet number you want to load and click **OK**.

From the Crew List

1. If a crew has been placed en route to a Master switching sheet event, then select the crew from the list.
2. Select the **Switching...** button. The Switching Management window displays the switching sheet associated with this event.

From the Crew Actions

1. If a crew has been placed en route to a Master switching sheet event, then select the crew's icon on the display.
2. Select the **Switching...** button. The Switching Management window displays the switching sheet associated with this event.

From the Control Tool

1. From a Viewer, double-click on a device that is involved in a switching sheet. The Control Tool is displayed.
2. Select the **Switching Plan(s)...** button.

If only one switching sheet step is actively open on the device, then that sheet is displayed in the Switching Management window. If the device is involved in multiple active switching sheet steps, then a list of sheet steps and their statuses are displayed. Select the switching sheet step you want to load and then click **OK**.

Open Window

Use the Open window to open an existing switching sheet or safety document.

- To open a switching sheet, select the sheet from the Web Switching tab and click **Open**.
- To an existing safety document, select the document from the Web Safety tab and click **Open**.

Related Topics:

- **Opening an Existing Switching Sheet**
- **Working with Safety Documents**

Completing the Request Tab

Someone other than the person who prepares the switching sheet usually initiates switching sheet requests. The requestor may be someone in the construction/maintenance department, while the preparer is typically an operations user assigned to look for and prepare new requests.

Follow the steps in the previous sections to start a new planned switching sheet. Then use the Request tab to enter basic information about the switching sheet before you begin adding steps. When a new sheet is created, the user ID of the person who created it is automatically displayed in the Requested By field. You should complete as much of the information on this tab as possible.

When you have completed the information on the Request tab (fields described below), update the sheet state to **Requested** on the Tracking/Audit Log tab. See **Changing the Switching Sheet State** on page 15-16 more information.

Note: The switching sheet is automatically saved after a state change, and an entry is added to the audit log.

Request Tab

The Request tab contains the following fields:

- **Owner** displays the current owner of the switching sheet. See **Taking Ownership** on page 15-16 for more information.
- **Requested By** displays the person who requested the switching order. This field is initially populated with the ID of the user who created the switching sheet and can be updated. A value is required prior to submitting the request.
- **Phone Number** displays the phone number of the person requesting the switching order. This field is required prior to submitting the request.
- **Email Address** displays the email address of the requestor.
- **Customer Name** displays the name of the customer requesting the interruption.
- **Phone Number** displays the phone number of the customer requesting the interruption.
- **Email Address** displays the email address of the customer requesting the interruption.

- **Charge Number** allows you to enter charge numbers that can then be executed and/or used by the switching sheet preparer.
- **Office** displays the office responsible for the switching sheet.
- **Location** displays the street address or specific location for the switching operation.
- **Substation** displays the substation where the switching operation takes place.
- **Device** displays the device being worked on (not necessarily the device being switched). This device address is given to the master event associated to the switching sheet after the switching sheet has been scheduled. The following buttons are displayed to the right of the Device field:

- Use the  **Link Device** button to link a device selected from the Viewer to this switching sheet. First, click on the device in the Master Viewer, then click this button. The Device field is populated with the selected device's name.
- Once a device has been linked, you can use the  **Unlink Device** button to clear the device field.

- Use the  **Object Focus** button to locate this device in the Master Viewer.
- **Description of Work** displays a general description about what the switching sheet should try to accomplish.
- **Start Date** displays the date and time the switching work is scheduled to begin. This is required when scheduling a switching sheet. This is the Start Date given to the master event associated to the switching sheet after it has been scheduled. This is also used to generate the Impacted Customers list if no Planned Date is specified for a step. Enter the time in military time format (e.g., 13:00 = 1 P.M.).
- **Alt. Start Date** displays the alternate date and time the switching work could begin. Enter the time in military time format (e.g., 13:00 = 1 P.M.). The alternate start date must be later than the start date.
- **Finish Date** displays the date and time the switching work is scheduled to end. This field is required when scheduling a switching sheet. This date is the Estimated Restore Time (ERT) given to the master event associated to the switching sheet after it has been scheduled. The finish date must be later than the start date, and you must enter the finish time for the date to be valid. Enter the time in military time format (e.g., 13:00 = 1 P.M.).

- Use the  **Update ERT** button to update the ERT for the master event associated to the switching sheet. This option is only available after the sheet has been scheduled. This button is displayed next to both the Finish Date and Alt. Finish Date fields. The button is grayed if no date has been entered yet for the field.
- **Alt. Finish Date** displays the alternate date and time the switching work could end. The alternate finish date must be later than the alternate start date. Enter the time in military time format (e.g., 13:00 = 1 P.M.).
- **Feeder** displays the feeder that is relevant to the switching sheet. This is a text entry field and is not auto-populated.
- **Voltage** displays a drop-down menu that lists the nominal device voltages. This list is configured and is not dynamically generated.
- The **Crew Will Switch** checkbox allows you to indicate whether the requesting crew will perform the switching activities.

- The **Crew Will Restore** checkbox allows you to indicate whether the requesting crew will restore the outage associated with the switching activities.
- The **Grounds Required** checkbox allows you to indicate whether the crew is required to place grounds on the appropriate devices or not.

Taking Ownership

You can take ownership of a switching sheet to indicate that you are currently working the sheet. Once you take ownership, no other user is allowed to execute steps for the sheet or edit restricted fields. Other users can still view, lock, and edit certain fields on the sheet.

To take ownership of a plan, click the  **Take Ownership** button next to the Owner field on the Request tab. Your user ID is displayed in the Owner field.

To relinquish ownership, click the  **Relinquish Ownership** button.

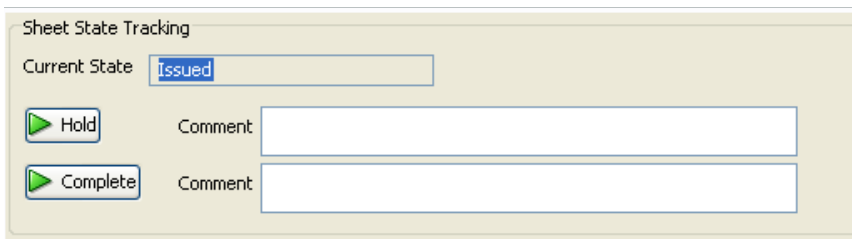
An entry is recorded in the audit log whenever ownership of a sheet changes.

Changing the Switching Sheet State

A switching sheet passes through different phases during the creation and completion of the plan. These phases are represented by “states” that follow a logical sequence and determine what you can do with a switching sheet.

Note: The state of the switching sheet should not be confused with the status of individual switching steps within the switching sheet.

A switching sheet’s current state is displayed on the Tracking/Audit Log tab. This tab also displays a button for each valid state to which the sheet can transition and allows you to enter a comment associated with the state transition.



Sheet State Tracking

Current State:

 Hold Comment:

 Complete Comment:

To change the state of a switching sheet, click the appropriate button.

The audit log list on the Tracking/Audit Log tab shows a history of all state transitions for the sheet, including the ID of the user who updated the state and the timestamp of the change. See **Viewing the Audit Log** on page 15-46 for details.

Switching Sheet States

The following table describes the switching sheet states.

State	Description
New	Indicates that the switching sheet is in the process of being created but has not yet been requested. When you create a switching sheet, its initial state is New.

State	Description
Requested	Indicates that the sheet has been requested. A sheet transitions to this state when a user clicks the Submit Request button on the Tracking/Audit Log tab. This state is valid for planned switching sheets only. From this state, a sheet can progress to either the Rejected or Prepared state.
Rejected	Indicates that the request was rejected. A sheet transitions to this state when a user clicks the Reject button on the Tracking/Audit Log tab. The Reject button is grayed until you select a Reason. This state is valid for planned switching sheets only. From this state, a sheet can be requested again by clicking the Submit Request button on the Tracking/Audit Log tab.
Prepared	Indicates that the sheet has been prepared. A sheet transitions to this state when a user clicks the Prepare button on the Tracking/Audit Log tab. Although not required, all information for the switching sheet should be entered before you transition to this state. This state is valid for planned switching sheets only. From this state, a sheet can transition to the Checked state.
Checked	Indicates that the sheet has been checked. A sheet transitions to this state when a user clicks the Check button on the Tracking/Audit Log tab. All information for the switching sheet should be entered before you check the sheet. This state is valid for planned switching sheets only. From this state, a sheet can be approved, rejected, or scheduled.
Approved	Indicates that the sheet has been approved. A sheet transitions to this state when a user clicks the Approve button on the Tracking/Audit Log tab. All information for the switching sheet should be entered before you approve the sheet. This state is valid for planned switching sheets only. From this state, a sheet can be scheduled.
Check Rejected	Indicates that the sheet was rejected after being checked. A sheet transitions to this state when a user clicks the Reject button on the Tracking/Audit Log tab. The Reject button is grayed until you select a Reason. This state is valid for planned switching sheets only. From this state, the sheet can be prepared again.
Scheduled	Indicates that the sheet has been scheduled. A sheet transitions to this state when a user clicks the Schedule button on the Tracking/Audit Log tab. All information for the switching sheet should be entered prior to scheduling the sheet. This state is valid for planned switching sheets only. From this state, a sheet can be cancelled or issued.
Canceled	Indicates that the sheet was cancelled. A sheet transitions to this state when a user clicks the Cancel button on the Tracking/Audit Log tab. The Cancel button is grayed until you select a Reason. This state is valid for planned switching sheets only. From this state, a sheet can be scheduled again.

State	Description
Issued	Indicates that the sheet has been issued. A sheet transitions to this state when a user clicks the Issue button on the Tracking/Audit Log tab. All information for the switching sheet should be entered before issuing a sheet. This state is valid for planned switching sheets only. From this state, a sheet can transition to the Hold/Pending, In Progress (automatically), or Complete state.
In Progress	Indicates that at least one switching step in a planned switching sheet has been completed in Real-Time Mode. This state is set automatically by the system and is valid for planned switching sheets only. From this state, a sheet can transition to the Hold/Pending or Complete state.
EmergInProgress	Indicates that at least one switching step in an emergency switching sheet has been completed. This state is set automatically by the system and is valid for emergency switching sheets only. From this state, a sheet can transition to the Hold/Pending or Complete state, as long as there are no switching steps in the Instructed state.
Hold/Pending	Indicates that the sheet is on hold. A sheet transitions to this state when a user clicks the Hold/Pending button on the Tracking/Audit Log tab. From this state, a sheet can progress to the In Progress (automatically) or Complete state.
Complete	Indicates that the sheet has been completed in Real-Time Mode. A sheet transitions to this state when a user clicks the Complete button on the Tracking/Audit Log tab. A terminal action (Complete, Delete, Abort or Fail) must have been taken for each of the switching steps before a sheet can be completed. (See Switching Sheet Step States on page 15-25 for information about step states.) Once a plan is complete, you cannot edit the plan. This state applies to both planned and emergency switching sheets.

Adding and Editing Steps

This section describes how to add and edit steps in a switching sheet. It includes the following topics:

- **Steps Tab**
- **Switching Sheet Step States**
- **Adding Recorded Steps to a Switching Sheet**
- **Adding Comment Steps**
- **Copying and Pasting Steps**
- **Creating Go-Back Steps**
- **Working with Blocks**
- **Grouping and Ungrouping Steps**
- **Editing Existing Steps**
- **Finding and Replacing a Device**
- **Focusing on a Device**

Steps Tab

Use the Steps tab to add, edit, record, instruct, and execute steps in a switching sheet.

Steps tab topics include:

- **Steps Tab Fields**
- **Steps Tab Toolbar and Pop-Up Menu**
- **Steps Tab Header - Events and Crews**

Steps Tab Fields

The Steps tab displays the following fields:

- **Step#** displays the number of the step.
 - For a block header row, this column displays the block name.
 - For a step row, this column displays the step number (1 through n).
 - For a sub-step within an aggregate step, such as Open & Tag, this column displays the sub-step number (a-z). Blocks and aggregate steps can be expanded or collapsed by clicking the + or - sign.
 - If you are viewing the differences between this version and another version, this column uses outline numbering (1.1, 1.2, etc.) to identify steps that were added since the previous version. See **Working with Switching Sheet Versions** on page 15-36 for more information.
- **Version** displays the version number of the switching sheet when the step was added. The current version is automatically checked in whenever a sheet transitions to Issued state or when a switching step is instructed or completed in Real-Time Mode. However, the sheet version is not incremented until step changes are made to the current checked-in version. See **Working with Switching Sheet Versions** on page 15-36 for more information.
- **Operation** displays the description of the switching action.
- **Device** displays the device alias referenced in the step.
- **Phases** displays the phase that was selected for the step. When obtaining a device through a Viewer device selection, all the phases are selected by default.

- **Details** displays additional information about the switching sheet step. You can enter free-form text in this field.
- **Status** displays the state of the switching sheet step. Possible states are Instructed, SCADA Pending, Completed, Partially Completed, Aborted, Failed, and Deleted (for red-lined steps only). See **Switching Sheet Step States** on page 15-25 for descriptions of these states.
- **Planned Date** displays the proposed date/time when this step's action will be performed. This is used to generate more accurate and detailed Impacted Customer lists. This date must be within the Start and Finish Dates specified on the Request tab.
- **Executed By** displays the user ID of the person who completed the step in Real-Time Mode. This field is automatically populated by the system.
- **Completed Date** displays the date the step was completed. If this field is blank when a step is completed, failed, or aborted in Real-Time Mode, then the system populates this field automatically. If you enter a date in this field before executing a step, that date is used instead. This allows you to specify when an action actually occurred. (This field is similar to the date field on the Control Tool.) This date cannot be edited after the step is in a terminal state (completed, aborted, or failed).
- **Instructed By** displays the user ID of the person who instructed the step in Real-Time Mode. This field is automatically populated by the system.
- **Instructed To** displays the ID of the crew to which the step was instructed. This field is automatically populated if a crew is selected in the Crew List on the Steps tab header when you instruct a step. This field cannot be edited manually.
- **Instructed Date** displays the date and time the step was instructed. If this field is blank when the step is instructed, then the system populates this field automatically. If you enter a date in this field before instructing a step, that date is used instead. This field cannot be edited after the step is in a terminal state (completed, aborted, or failed).
- **Address** displays the address of the device referenced in this step. This field is automatically populated if you record the step by initiating an action within the Viewer.
- **Comments** displays any additional information associated with this step. You can enter free-form text in this field.

Steps Tab Toolbar and Pop-Up Menu

A toolbar is displayed at the top of the Steps tab. The toolbar displays a button for each action that you can perform. If a button is grayed, then that action is not currently permitted. For example, if you are currently in Study Mode, then the Start Study Session button is grayed. Some toolbar buttons, such as Cut and Paste options, are also available on the pop-up menu that is displayed when you right-click on a step. The pop-up menu contains some options that do not appear on the toolbar.

The following table describes all actions that can be performed on the Steps tab either from the toolbar or pop-up menu.

To perform this action:	Do this:	Comments
Abort the selected steps	Click 	Use this action if a step was never attempted. When you click this button, the status of the step changes to "Aborted." If you are in Real-Time Mode, the Completed Date column is updated with the current date. However, the switching action is not actually performed. This action is only permitted in Real-Time Mode and only for the next actionable step. (You cannot abort step 2 before step 1 has been completed, aborted, or failed.)

To perform this action:	Do this:	Comments
Add a new block header	Choose Add New Block Header from the pop-up menu, then select the block type	Inserts a new block header of the selected type: Isolate, Fault Location, Maintenance, Restore, or Custom. If you choose Custom, you are prompted to enter the block header name. See Adding a New Block Header for more information. This option is disabled if the sheet is not locked or the sheet state is Complete.
Add Safety Document	Click 	Depending on the type of step selected, the Select Safety Type dialog may prompt you to select the type of safety document (if the type cannot be determined automatically). Once a safety document type has been determined or selected, the safety document dialog opens. This option is disabled if the sheet is not locked or the sheet state is Complete. See Working with Safety Documents on page 15-53 .
Clear the clipboard	Choose Clear Clipboard from the pop-up menu	Clears the contents of the clipboard.
Clear the Planned Date field for this step	Choose Clear Planned Date from the pop-up menu	This action is only available if the step has a value in the Planned Date column. Clicking this button removes the date and leaves the Planned Date column blank. This option is disabled if the sheet is not locked or the sheet state is Complete.
Complete the selected steps	Click 	Once the action is complete, the status of the step changes to Completed. If you are in Real-Time Mode, the Completed Date column is also updated with the current date. Note that steps cannot be completed out of order. (You cannot complete step 2 before step 1 has been completed, aborted, or failed.) The Complete button is enabled in Real-Time Mode when the plan reaches the Issued state. Note: To complete a step in Real-Time Mode, you must have authority over the device.
Confirm that all model changes have been verified	Click  or choose Model Verify from the pop-up menu	This action is only available if model changes have occurred that impact one or more devices in the current switching sheet. For example, if a model build has changed a device's alias or a model edit temporarily removed a device, then the affected steps are highlighted and this button is enabled. When this is enabled, you should check each step and take corrective action if necessary, such as deleting or re-recording a step. When you have verified all highlighted steps, click this button to confirm the verification and remove the highlighting.
Copy steps to the clipboard	Click  or choose Copy from the pop-up menu	You can select one or more steps. The selected steps are copied to the clipboard. Use the Paste option to paste the steps.
Copy steps as go-back steps	Click  or choose Copy as Go-Backs from the pop-up menu	You can select one or more steps. Reverse steps are created for each selected step and copied to the clipboard. Use the Paste option to paste the steps.

To perform this action:	Do this:	Comments
Cut steps to the clipboard	Click  or choose Cut from the pop-up menu	You can select one or more steps. The selected steps are marked as being cut and are placed on the clipboard. The steps will only be moved after they have been pasted to their new location. Use the Paste option to paste the steps. This option is disabled if the sheet is not locked or the sheet state is Complete.
Delete steps	Click  or choose Delete from the pop-up menu	Deletes the selected steps from the plan. This button is disabled if the sheet is not locked or if the step has transitioned beyond its initial state (No State).
Find and replace text	Click 	Use this to find and replace all occurrences of a device in the switching steps. See Finding and Replacing a Device on page 15-30.
Focus the Master Viewer on the object referenced in the currently selected step	Click 	By default, the Master Viewer is the VIEW1 Viewer.
Group steps	Choose Group Steps from the pop-up menu	Groups the selected steps and draws a bracket around them in the Steps list. This allows steps to be completed out of order within the grouping. See Grouping Steps on page 15-29. This option is disabled if the sheet is not locked or the sheet state is Complete.
Insert a blank step	Choose Insert Blank Step from the pop-up menu	Inserts a new blank step after the currently selected step. This is useful for adding comment steps. See Adding and Editing Steps on page 15-19 for more information. This option is disabled if the sheet is not locked or the sheet state is Complete.
Instruct the selected steps	Click 	This action is only permitted in Real-Time Mode when the plan reaches Issued state. Note that steps cannot be instructed out of order. (You cannot instruct step 2 before you instruct step 1.) When you select this button, the Instructed By and Instructed Date columns are populated.
Mark the location where steps should be inserted	Choose Place Step Insertion Indicator from the pop-up menu	Designates where newly recorded steps should be added. When you choose this option, a visible marker appears. The next recorded step is inserted after the marker. Each time you add a recorded step, the marker moves down to the newly recorded step, so that steps are added in the order in which they were recorded. This option is disabled if the sheet is not locked or the sheet state is Complete.
Mark the selected steps as failed	Click 	Use this if a step was attempted but failed. When you click this button, the status of the step changes to Action Failed and the Completed Date column is updated with the current date. However, the action is not actually performed against the real-time data model. This action is only permitted in Real-Time Mode and only for the next actionable step. (You cannot fail step 2 before step 1 has been completed, aborted, or failed.)
Move a column in the Steps list	Click the column heading and drag it to the desired position	This allows you to rearrange the order in which columns are displayed. For example, if you want each step's status to display in the first column, click the Status column header and drag it to the left of the Step # column.

To perform this action:	Do this:	Comments
Paste steps from clipboard	Click  or choose Paste from the pop-up menu	Steps are pasted after the currently selected step. The operation pastes the steps that were placed in the clipboard during the last Cut, Copy, or Copy as Go-Backs operation. This option is disabled if the sheet is not locked or the sheet state is Complete.
Remove step insertion indicator	Choose Remove Step Insertion Indicator from the pop-up menu	When you click this option, the indicator is removed and any newly recorded steps are added to the end of the steps list. This action is only available when the step insertion indicator is showing.
Reset study session and clear the status of the steps	Click 	This action is only available in Study Mode. When you click this button, you are prompted to select either Nominal or Real Time. - Choose Real Time to replicate the real-time device states, which might include outages during a storm. - Choose Nominal to reset all devices to their predefined normal state.
Save all device addresses to the database	Click 	If you change one or more device addresses in a switching sheet, this action updates the devices' addresses throughout the switching sheet and also updates the device attribute table so that any new switching sheets referencing these devices will use the new addresses.
Show or hide header	Click  to show or  to hide the header	Shows or hides the Steps tab header, which displays crew and event associations. See Steps Tab Header - Events and Crews on page 15-24.
Switch to Study Mode	Click 	This action is only available when you are in Real-Time Mode. When you click this button, the status bar displays Study Mode in gray and the Master Viewer changes to Study Mode.
Switch to current Real-Time Mode	Click 	This action is only available when you are in Study Mode. When you click this button, the status bar displays Real-Time Mode in red and the Master Viewer changes to Real-Time Mode.
Turn record mode on or off	Click  Record On or  Record Off	Record mode must be on in order to record operations using the Viewer and Control tool.
Ungroup steps	Choose Ungroup Steps from the pop-up menu	Ungroups the selected steps and revises or removes the group bracket. (If you ungroup the third of three steps, the first 2 remain grouped.) See Ungrouping Steps on page 15-29. This option is disabled if the sheet is not locked or the sheet state is Complete.
Unlink from Safety	Click 	Unlinks (removes the association to) a device from a safety document's device list. First, select the step with the device operation you want removed from the safety document, then click this button. See Removing Devices on page 15-57.

Steps Tab Header - Events and Crews

The Steps tab header is displayed above the list of steps. The header shows the crews and events associated with the sheet.

Use the **Show Header** and **Hide Header** buttons on the Steps tab toolbar to display or hide the header.

Events and Crews											
    											
Event	Association	# Out	Status	Device	Crew ID	Event	Contact	Mobile #	Pager #	ASN/ENR Date	Status
2763	Master	0	W-ASN	<xfm_oh.1000398>	OMS Crew 2	2763	Contact 2	5551002	5551003	12/02/2008 13:19	ASN
2764	Planned	56	P-NEW	<disconnect_oh.976537>							

Events List

The **Events List** lists all events associated to the switching sheet. If you created a switching sheet from the Work Agenda Event List, the associated event is automatically displayed in the Events list. Use this list to view, add, and remove event associations and to view more information about the events. (For more information about associating events to switching sheets, see **Event Associations** on page 15-51.)

The Events List displays the following fields and buttons:

- The **Event** column displays the number of the associated event.
- The **Association** column displays the type of association. The list can have the following types of associations and will be listed in the order of Master, Planned, Forced, Manual and Canceled. Manual event associations are event associations that are added using the Add Event Association button on this window.
- The **# Out** column displays the number of customers outaged by this event.
- The **Status** column displays the status of the event, such as NEW, P-NEW (New Planned Event), or W-ASN (Master Switching Event).
- The **Device** column displays the name of the device.
- The  **Add Event Association** button opens a dialog box that allows you to enter an event number to associate with the switching plan. The event number can also be populated by selecting an event in the Work Agenda Event List. These events will show up as “Manual” associated events within the Events list. See **Event Associations** on page 15-51 for more information.
- The  **Remove Event Association** button removes the selected event association from the switching plan. This button is enabled only for Manual associated events. This option is disabled if the sheet is not locked or the sheet state is Complete.
- The  **Event Details...** button displays the Event Details window for the selected event.
- The  **Call...** button displays the Trouble Info window for the selected event.
- The  **Highlight in Work Agenda** button selects the event within the Work Agenda Event List.

- The  **Show in Master Viewer 1** button focuses the Master Viewer on the associated device.

Crews List

The Crews List displays crews that are assigned or en route to events associated to the switching sheet. If you created a switching sheet from the Work Agenda Event List, any crew associations are automatically displayed in the Crews list on the Steps tab header.

The Crews List displays the following information:

- The **Crew ID** column contains the crew ID of the crew.
- The **Event #** column contains the event number the crew is assigned or en route to.
- The **Contact** column contains the contact name for the crew.
- The **Mobile #** column contains the contact's mobile phone number.
- The **Pager #** column contains the contact's pager number.
- The **ASN/ENR Date** column contains the date and time of when the crew was assigned or placed en route to the event shown in the Event # column.
- The **Status** column indicates whether the crew is assigned or en route to the event shown in the Event # column.
- The **Type** column contains the crews' type (e.g., Trouble).
- The  **Crew Info** button displays the Crew Information window for the selected crew. This button is enabled only if a crew is selected from the list. For more information, see **Associating Crews** on page 15-33.
- The  **Update 'Instructed To' in Steps** button updates the Instructed To column for the selected steps with this crew's ID. This option is disabled if the sheet is not locked or the sheet state is Complete.

Switching Sheet Step States

Switching sheet steps go through stages or states, just like switching sheets. Step states are described below:

- **No state** - No action is associated with the step.
- **Instructed** - The step was instructed.
- **Completed** - The step was successfully completed.
- **Partially Completed** - This state applies only to parent aggregate steps and indicates that some but not all child steps were completed.
- **SCADA Pending** - This state applies only to actions that the system identifies as SCADA actions (i.e., actions on telemetry-controlled devices). It indicates that a SCADA action was instructed.

Note: If the system detects that the device was operated as instructed, the step state is then changed from SCADA Pending to Completed. If an error or timeout occurs, the step remains in SCADA Pending state.
- **Deleted** - The step was deleted from the sheet.
- **Aborted** - The step was marked as aborted by the user. (A step transitions to this state when the user selects the **Abort** option on the Steps toolbar.)

- **Failed** - The step was marked as failed by the user. (A step transitions to this state when the user selects the **Fail** option on the Steps toolbar.)

Note that a terminal action (Complete, Delete, Abort or Fail) must have been taken for each of the switching steps before a sheet can be completed.

Adding Recorded Steps to a Switching Sheet

Follow these steps to add recorded steps to a switching sheet using the Viewer and the Control Tool.

Notes:

For information about adding steps to an emergency switching sheet, see **Emergency Switching** on page 15-50.

To record safety state transition steps (steps that are associated to safety documents), see **Adding Safety State Transition Steps** on page 15-55.

1. Create or open a switching sheet (as described earlier) and display the **Steps** tab.
2. Select the step after which you want the recorded steps inserted. Right-click this step, then choose **Place Step Insertion Indicator** from the pop-up menu.
3. If the Viewer is not displayed, open a Viewer by clicking the **Start Viewer** button on the Environment Manager.
4. Verify that Switching Management is in Study Mode.
 - To enable Study Mode, click the **Switch to Study Mode** button on the Steps tab toolbar. The status bar should display “Study Mode.”
5. Verify that Viewer is in Study Mode.
 - To enable Study Mode, select **Study** from the Options menu.
6. Verify that recording is enabled.
 - To turn recording on, click the **Record Off** button on the toolbar. When recording is enabled, the toolbar displays Record On in red.
7. In the Viewer, search for the device on which you want to perform an operation.
8. Double-click the device. The Control Tool opens.
9. Select the action you want to perform. For example, to open a device, click **Operate** and then select **Open** from the list of operations. To place a tag on a device, click **Tag** and then select **Place Tag**.
10. If the step involves a device operation, the Look Ahead window opens. Click **Open** or **Close** in the Look Ahead window to continue.

Note: The Look Ahead window informs you of the results of the operation, including the creation of parallels and loops, the number of critical customers affected, and related abnormal devices and conditions. You may be required to view additional tabs, such as View Conditions, before you can close the Look Ahead window.
11. Click **Cancel** on the Control Tool dialog. The device is updated in the Viewer and a step is added to the steps list. The new step is automatically selected.

Adding Comment Steps

You can add comment steps that are not related to a specific device or operation. To add a comment step, select the step after which you want the comment step inserted. Right-click this step, then choose **Insert Blank Step** from the pop-up menu. In the Details column, type the description of this step.

Note: You may enter text in the Details, Address, and/or Comments fields. You can also specify Date fields for the step. The other fields are populated automatically when you instruct and complete the step.

Copying and Pasting Steps

You can copy or cut steps and then paste them to another location within the step list or into another switching sheet. When you cut steps, they are marked as cut in the steps list and are copied into the clipboard. When you copy steps, they are copied to the clipboard, but the original steps are not marked or removed from the list.

Note: The in-order step execution rules are not enforced when cutting and pasting steps. Switching steps that were previously completed can later be cut and paste into any location within the step list. This also pertains to cutting and pasting steps from one sheet to another.

Follow these steps to use the cut, copy, and paste functions:

1. Select the steps you want to cut or copy.
2. Click the **Copy Steps** or **Cut Steps** button (or right-click the selected steps and choose **Copy** or **Cut** from the pop-up menu).
3. Select the step after which you want the steps inserted and click the **Paste Steps** button (or right-click the step and choose **Paste** from the pop-up menu). Any cut steps are moved, and copied steps are duplicated.

Creating Go-Back Steps

When you are creating a switching sheet in Study Mode, you can automatically generate a sequence of switching steps to “go-back” to a normal state. The Go-back feature creates a new sequence of steps that reverses the existing sequence. For example, assume that Step 1 involves opening a device. If you select this step and choose Copy as Go-backs, the system creates a step to close that device and copies the step to the clipboard. You can then paste the step in the appropriate location in the step list.

To create go-back steps for one or more steps, do the following:

1. Select the step or the range of steps you want to create reverse actions for.
2. Click the **Copy As Go-Backs** button (or choose **Copy as Go-Backs** from the pop-up menu). Go-Back versions of the selected steps are copied to the clipboard.

Note: If you selected one or more steps that are part of an aggregate step, all steps within the aggregate are automatically selected and copied as go-back steps. (An aggregate step is an operation, such as Open and Tag, that comprises two or more sub-steps, numbered a through z.)

3. Select the step after which you want the go-back steps inserted and click the **Paste Steps** toolbar button (or choose **Paste** from the pop-up menu). The steps are pasted after the selected step.

Working with Blocks

Blocks are used to organize steps based on stages of execution. A block is a series of contiguous steps that can include both single (ungrouped) steps and groups of steps. The figure below shows an “Isolate” block that is expanded to display 5 steps, and a “Restore” block that is collapsed so that its steps are hidden.

Step #	Ver...	Operation
[-] ★ Isolate	1	
[+] 1	1	Open and Tag
2	1	Place Tag
[+] 3	1	Open and Tag
4	1	Place Tag
5	1	Open
[+] ★ Restore	1	

Note the following when working with blocks:

- When you create a new sheet, the system creates an empty block named “Default”. When you add steps, they are added to this block by default. You can delete this block and create a new top-level block if you wish.
- The system provides several pre-configured block headers – Isolate, Fault Location, Maintenance, and Restore – or you can create your own custom header. The header is simply the block name that is displayed in the Steps list.
- To expand a block and display its steps, click the + symbol to the left of the block name. To collapse a block and hide its steps, click the - symbol.
- All steps within a block must be completed before a step within another block can be completed.
- Additional rules apply when grouping steps within a block. See **Grouping and Ungrouping Steps** on page 15-28.

Adding a New Block Header

To add a new block header to the steps list:

1. From the Steps tab, right-click the step after which you want to insert a block. A pop-up menu appears.
2. Select **Add New Block Header**, then select a block header type: Isolate, Fault Location, Maintenance, Restore, or Custom.

Note: If you choose Custom, you are prompted to enter the block header name.

A new block header row is added to the steps list.

Grouping and Ungrouping Steps

Normally, each step in a switching sheet must be completed in order -- you cannot complete step 2 until step 1 has been completed. However, you can group two or more steps together so that the steps within the group can be completed in any order. Here are the rules for grouping and ungrouping steps:

- All steps preceding a group must have been completed before you can complete any steps within the group.
- Steps within a group can be completed in any order.
- All steps within a group must be completed before the next step or next group of steps can be completed.
- Step groupings cannot cross over Block boundaries.

- Step groupings can be removed and altered (ungrouping and regrouping) at any time. Note that this may impact which steps can be completed next based on step completion rules.

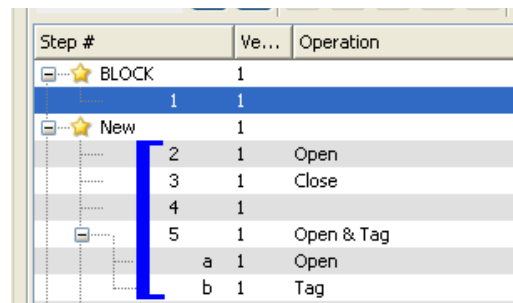
This section includes the following topics:

- Grouping Steps**
- Ungrouping Steps**
- Adding Steps to an Existing Group**
- Grouping Aggregate Steps**

Grouping Steps

To group steps:

- Select two or more contiguous steps. Remember that the grouping cannot cross Block boundaries.
- Right-click and select **Group Steps** from the pop-up menu. A blue bracket appears in the step number column to visually indicate the newly formed grouping, as shown in the following figure:



Step #	Ve...	Operation
BLOCK	1	
1	1	
New	1	
2	1	Open
3	1	Close
4	1	
5	1	Open & Tag
a	1	Open
b	1	Tag

Note: Groups cannot span more than one block. If you attempt to group steps that span two or more blocks, the system will create separate groups within each block.

Ungrouping Steps

You can ungroup some or all steps in a group. To ungroup steps:

- Select one or more steps that are currently part of a group.
- Click the right mouse button and select **Ungroup Steps** from the pop-up menu.

The bracket is removed (if all steps were ungrouped) or redrawn to indicate the steps that remain grouped. If the selected steps were in the middle of a grouping, then two new groups are created, and the middle steps are no longer grouped.

Adding Steps to an Existing Group

You can add one or more steps to an existing group as follows:

- Select the steps you want to add and include at least one step from the existing group.
- Click the right mouse button and select **Group Steps**.

The selected steps that were previously ungrouped are added to the existing group.

Grouping Aggregate Steps

An aggregate step is an operation, such as Open and Tag, that comprises two or more sub-steps (numbered a through x). An aggregate step is treated as a single step when grouping and ungrouping steps:

- If you add any sub-step of an aggregate step to a group, then all sub-steps are added to the group.
- If you ungroup any sub-step, then all sub-steps are removed from the group.

Editing Existing Steps

You can rearrange, add, and delete switching steps using options found on the Steps toolbar or from the Steps pop-up menu.

Note: Some fields on the switching sheet are not editable after a plan has transitioned to a certain set of states.

To edit switching steps, complete these steps:

1. Open the switching sheet and check the status bar to make sure that the switching sheet is locked.
2. Click on the Steps tab.
3. Edit steps as follows:
 - To edit the fields in a step, click in the Details, Planned Date, Instructed Date, Completed Date, Comments or Address field and change the text. This option is not available after the switching sheet has been completed. The Instructed Date and Completed Date fields cannot be updated after the step has reached a terminal state (completed, aborted, or failed).
 - To insert a blank step, place your cursor in the row after which you want to insert the step and select the right-click **Insert Blank Step** option.
 - To insert a recorded step, select the right-click the **Place Step Insertion Indicator** option and then perform the action in the Viewer. Steps are inserted after the step that currently has the indicator. To record steps at the end of the steps list, remove the step insertion indicator first.
 - To delete a step, select the row for the step you want to delete and click the **Delete** button. This button is disabled if the step has transitioned beyond its initial state (No state).
 - To rearrange steps, cut and paste the steps to the desired location.
 - You can cut, copy and paste steps from one plan to another. The ability to cut, copy or paste is governed by the sensitivity of the edit options. (The options are disabled if the edit operation is not allowed.)
4. Save the switching sheet by selecting **Save Sheet** from the File menu.

Finding and Replacing a Device

The Find and Replace Device dialog box allows you to find and replace all occurrences of a device in the switching steps. This is helpful for finding a device in a switching sheet that has many steps. You can also use this function if you are reviewing a switching sheet and find that the wrong device was entered in a number of places.

To find occurrences of a device within the Steps list, complete these steps:

1. Open the switching sheet in the Switching Management Window.
2. Click on the Steps tab.
3. Click the **Find and Replace Device** button on the Steps tab toolbar. The Find and Replace Device dialog box opens.
4. Select a step with a valid device name within the Steps list. The Find field is updated with that step's device alias.

5. Use the **Find Next** button to navigate through the list of steps, highlighting each occurrence of that device.

To replace a device, complete these steps:

1. Open the switching sheet in the Switching Management Window.
2. Click on the Steps tab.
3. Select a step with a device that you wish to replace.
4. Click the **Find and Replace Device** button on the Steps tab toolbar. The Find and Replace Device dialog box opens.
5. Select a device from the Viewer. The Replace With field is populated with that device's alias. The New Phases column indicates the phase options of the newly selected device. By default, the ALL Phases option is selected.
6. If the device you are replacing is used in a grounding operation, click the **Ground Node** option menu and select the secondary device from the list. The selected device is highlighted in the Master Viewer.
7. Click **Replace** or **Replace All**.

Focusing on a Device

When reviewing a switching sheet, you can focus on a device in the Master Viewer window to better understand the conditions present in the area of the device. To focus the Master Viewer window on the device in a switching step, select a step on the Steps tab and then select the **Object Focus** button on the Steps tab toolbar. The Master Viewer loads the appropriate map and focuses on the device.

Reviewing a Switching Sheet in Study Mode

You can review the actions of a switching sheet in a Viewer window. With the Viewer and Web Switching Management both in Study Mode, you can complete steps by selecting a step and clicking the **Complete** button on the Steps tab toolbar.

As the steps are completed, each one takes effect in the Viewer window and the word "Study Completed" appears in the Status column in the steps section. Steps are completed starting with the first step and continuing sequentially, however it is possible to complete steps out of order if the steps are part of a step grouping. (See **Grouping Steps** on page 15-29.)

The Look Ahead window informs you of the results of the operation, including the creation of parallels and loops, the number of critical customers affected, and related abnormal devices and conditions.

Replaying Steps

You can replay steps in the Viewer window, allowing you to experiment with and make changes to a switching sheet. You can then add and delete switching steps and then select one of the two **Reset Study Session** options. After resetting your study session, you will be able to go through the steps again using the **Complete** button.

Implementing a Planned Switching Sheet

Once you have created, studied, and approved a switching sheet, you can implement the plan. Implementing involves the following steps:

- **Scheduling a Planned Master Event**
- **Updating the ERT from Event Details**
- **Issuing a Switching Sheet** (includes associating a crew and printing the sheet)
- **Instructing and Completing Switching Sheet Steps**

Scheduling a Planned Master Event

In order to schedule planned switching, you must have entries within the Start Date and Finish Date (ERT) fields on the Request tab. An optional device alias can also be specified within the Device field on this tab. Specifying a device will cause the planned Master Event to conform to the regular zone authority rules. If you do not have authority over the zone that the device resides in, then you will not see the planned Master Event that will be created when the switching sheet is scheduled.

To schedule a planned Master Event, complete these steps:

1. On the Request tab, fill in future dates and times within the Start Date and Finish Date entry fields.
2. To associate a particular device and control zone, select the device within the Viewer and click the **Link Device** button on the Request tab. If a device is not specified, then the Master Event will fall into the FUZZY control zone.
3. On the Tracking/Audit Log tab, click the button for the **Schedule** state. (If the Schedule button is not displayed, click through the available sheet state buttons until the Schedule button appears.) You can add a comment to each state transition if you wish.

At this point, a new planned Master Event has been created and associated to the switching sheet. This new event appears in the Events list as a Master Event. You can display the Event Details for the event from either the Work Agenda Jobs List or the Events list on the Steps tab.

Note: The Event Details display is different for planned events than for spontaneous outage events. For instance, you cannot update the ERT for a planned event from Event Details. That has to be done from the associated switching sheet.

Updating the ERT from Event Details

To update the ERT for the planned event from Event Details, complete these steps:

1. Select the **Switching...** button at the bottom of the Event Details window. The associated switching sheet is loaded and the steps are displayed.
2. Select the **Request** tab and enter in a new Finish Date (ERT) date and time.
3. Select the **Update ERT** button, which is displayed next to the date and time entry fields. The Estimated Restoration Time (ERT) is changed for the associated Master Event within the Work Agenda Jobs List. The new date is displayed in the Event Details the next time it is loaded for that event.

Issuing a Switching Sheet

Once you have scheduled the plan, you should associate crews to the planned Master Event and then issue the switching sheet to the crew.

Associating Crews

1. On the Tracking/Audit Log tab, verify that the switching sheet is in Scheduled state.
2. Find the Master Event for a planned switching sheet. (Right-click on the Master Event within the Steps tab Events list and click the **Highlight in Work Agenda** toolbar button.)
3. From the **Work Agenda Events List**, select the event. (Even though the event is highlighted, you must click on the event in the Work Agenda Events List in order to assign and dispatch crews to events.)
4. From the **Crew Actions** list, select the crew and then click the appropriate button: **Assign** or **En Route**. The Crew is listed in the Crew List on the Steps tab header, and the selected status is shown.

Pre-Assigning Steps to Crews (Optional)

You can pre-assign steps to crews before issuing the switching sheet. With pre-assigned switching steps, the crew is automatically highlighted in the Crew List as the steps are instructed and/or completed. To pre-assign steps to a crew, select the appropriate steps and then select the crew from the Crew List found on the Steps tab. (To select all the steps, select a single step and then press <Ctrl>-A.) The Instructed To field for the selected steps is updated with the crew's ID.

Note: To clear (deselect) crew step assignments, select all the steps again, then press the <Ctrl> key and click the crew in the Crew List. The Instructed To column is cleared for all steps that have not been instructed, aborted, failed or completed.

The plan is now ready for the crews to work the steps.

Changing the Sheet State to Issued

When the plan is issued to the crew, change the sheet state to **Issued** on the Tracking/Audit Log tab. The sheet can now be printed (see the following section) and handed to the crew or sent via email, depending on how your crew assignments are handled.

Printing the Switching Sheet

To print the switching sheet:

1. Choose **File>Print** from the Switching Management window or click the **Print** button on the main toolbar.
2. Select each section of the switching sheet you want to print:
 - Request
 - Events and Crews
 - Switching Steps
 - Impacted Customer List
 - External Documents
 - Safety Documents
 - Audit Log
3. Select the format for the print-out:
 - PDF
 - HTML
 - RTF
 - XML
4. Click **OK**. The Print dialog appears.
5. Verify that your printer is selected and click **Print**.

Instructing and Completing Switching Sheet Steps

Once you have scheduled and issued a switching sheet, you are ready to instruct and complete the switching sheet steps. Instructing a step indicates that you have provided the step information to the individual performing the switching actions in the field.

Note the following key information about instructing and completing steps:

- Instructing steps is only permitted in Real-Time Mode.
- In order to begin instructing switching sheet steps, the sheet has to first be Issued. The Instruct and Complete buttons become enabled in Real-Time Mode when the plan reaches the Issued state.
- Steps cannot be instructed out of order. (You cannot instruct step 2 before you instruct step 1.)
- Steps are not required to be instructed before being completed. It is up to you to decide if the step should be instructed first.
- To complete a switching sheet, the Switching Management window must be in Real-Time Mode. (You can complete steps in Study Mode, but these actions do not affect the real-time data model.)
- Although a Viewer window does not need to be open to complete switching steps, it is helpful to view the steps in a Viewer window. The Viewer must be in Real-Time Mode as well.
- For steps involving device operations, you must have authority over the zone where switching operations will take place, or the system will not allow you to complete the switching steps.

Instructing and Completing Steps

To instruct and complete steps:

1. Verify that the Switching Management window and the Viewer are in Real-Time Mode.
2. On the Tracking/Audit Log tab, verify that the status of the sheet is Issued.

Instructing the Step

3. Select the step you want to instruct.
4. If a crew was assigned to the switching plan and was not pre-assigned to any steps, then select the crew from the Crew List in the Steps tab header. (See the previous sections for instructions on associating crews to switching sheets and pre-assigning steps.)

Note: Automatic Crew List selection is based on the crew specified in the Instructed To field of the selected step. If the step does not display a crew in this field, then no crew will be selected in the Crews List.

5. When you give the instruction to the crew, click the **Instruct** button on the Steps tab toolbar.
6. If the step involves a device operation, the Look Ahead window opens. Click **Open** or **Close** in the Look Ahead window to continue with the step. (You may be required to view conditions associated with the operation before you can perform the operation.)

The status of the step changes to Instructed. The Instructed To column is populated with the assigned crew's ID, and the Instructed Date column is populated with the current date/time. An Instructed symbol appears on the device in the Viewer.

If the step involves issuing a safety document to a crew, then the value in the step's Instructed To field is copied to the safety document Crew ID field when the step is completed.

Notes on SCADA Actions:

If the step involves actions on a SCADA control and no crew has been selected, a confirmation dialog displays the following text: "Do you wish to send this request to SCADA?" If you click **Yes**, the step is instructed to SCADA, the request is sent to SCADA, and the status of the step is set to SCADA Pending. If you click **No**, the action is cancelled.

If the SCADA interface reports that the device was indeed opened, the step status is then updated to Complete. The switch opens in the Viewer and the instruct condition disappears.

If you select the Complete button before receiving information from SCADA, a confirmation dialog displays the following text: "SCADA telemetry only for selected device. Submit a manual entry?" If you click **Yes**, the status of the steps is set to Completed, and the switch opens with status of M (for MANUAL entry) in the Viewer. If the SCADA interface reports that the device was indeed opened, the MANUAL indicator disappears. If you click **No**, the action is cancelled.

For more information about SCADA, see **SCADA Extensions on page 13-1**.

Completing the Step

7. After the crew reports that the step is complete, select the step and click the **Complete** button.

The Status is updated to Completed. The Completed Date column is populated and the device status is updated in the Viewer window. If customers are impacted, then a new planned outage event is placed upon the device as well. This event will also appear in the Events list on the Steps tab header.

8. If the step is a safety state transition step, then selecting the Complete button will cause the safety document dialog to be displayed. Verify that the information on the safety document is

correct and click the **Execute** button at the bottom of the display to complete the action. (For more information, see **Executing Safety State Transition Steps**.)

Note: All safety documents must be completed before you can complete the switching sheet. Also, in order to complete an Issue safety state transition step, a crew has to be selected within the Crew List on the Steps tab.

9. Repeat steps 3-8 for each switching step you want to instruct and complete.
10. When all steps have been completed, click the **Tracking/Audit Log** tab and set the sheet state to **Complete**. You can add a comment if you wish.

If any associated event has not been restored or if any safety document has not been completed, an error message is displayed indicating that the sheet cannot be completed.

Once the sheet is in Completed state, any planned outage events are completed along with the planned master event. Any crews assigned or en route to the events are released as well.

Note: Once all the steps in a switching sheet are complete, the plan itself is considered complete. Setting the sheet state to Complete “locks” the switching sheet so that no further modifications may take place for this sheet. A Completed sheet cannot be transitioned to any other state.

Working with Switching Sheet Versions

Switching sheets use a version control mechanism in order to keep operators and crews consistent with regards to which switching sheet they are viewing. The switching sheet as a whole has a version number, and steps can also have version numbers.

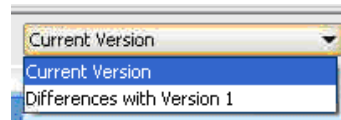
Here’s how version control works:

- When you first start a sheet, the sheet version is 1. A sheet’s version number is displayed in the **Status Bar** at the bottom of the switching sheet.
- Once a sheet has been issued, it is considered Checked In. If you make switching step changes to a sheet after it has been checked in, the system automatically creates a new version and increments the sheet’s version number. This new version is now considered to be in an “Editing” state until it is checked in.
- As you make changes to a switching sheet, you can check those changes in at any time. This creates a saved version of the sheet that you can refer back to later. It also makes the checked-in version available to other users who view the sheet. The Check In button is displayed in the **Status Bar** at the bottom of the switching sheet. When you click the Check In button, the current version is checked in, but the version number is not incremented until you make any changes (thus creating another new version).
- Steps also have version numbers. The step version number is the version number of the sheet when the step was added. A step’s version number is displayed on the Steps tab to the right of the step number.

Step #	Version	Operation
 BLOCK	1	
1	1	Open
2	2	Place Safety Flag
3	1	Open

- If you add steps to a checked-in switching sheet, the sheet version is automatically incremented and the newly added steps are associated to this new sheet version number. This allows you to easily distinguish between steps that were previously issued to a crew and newly added steps.

- To see the differences between the current version and a previous version, open the version drop-down on the status bar, then select the version to compare against.



When you select a version, the Step # column uses outline numbering (1.1, 1.2) to identify steps that were added since the previous version.

Step #	Version	Operation
☐...★ BLOCK	1	
1	1	Open
2	1	Place Safety Flag
3	1	Open
3.1	2	Open
3.2	2	Place Safety Flag

- If you delete a step when the switching sheet version is checked-in or when an earlier version of the step exists, then the step is removed from the current version. If you view a previous version in which the step existed, the deleted step is shaded red.

Step #	Version	Operation
☐...★ BLOCK	1	
1	1	Open
2	1	Place Safety Flag
3	1	Open
3.1	2	Open
3.2	2	Place Safety Flag

- You cannot make changes to a switching sheet after it has been completed. Once a sheet is completed, it is locked and cannot be edited any further.

Viewing Impacted Customers

The Impacted Customers tab displays a list of all customers affected by the switching step operations. It also shows the total number of interrupted, isolated, and restored customers.

The following rules apply to the Impacted Customer list:

- The list can only be generated after a switching sheet has transitioned to Prepared status (or further).
- Whenever the system determines that a plan will impact customers, the Impacted Customers indicator is displayed on the status bar. If the sheet is later changed and customers are no longer impacted, then the indicator is removed.
- If a customer will be impacted multiple times during a sheet's execution, the customer is listed multiple times in the list.

This section includes the following topics:

- **Using the Impacted Customers Tab**
- **Color Coding**
- **Generating the List**
- **Deleting and Restoring Customers from the List**
- **Moving Customers**

Using the Impacted Customers Tab

The Impacted Customers tab displays a list of impacted customers in a hierarchical, or tree, format -- just like Windows Explorer. The top level of the hierarchy is date/time. Within date/time, the list displays each supply node. Within each supply node is a list of customers. You can expand or collapse any level of the hierarchy by clicking the + or - icon.

Request Steps Impacted Customers Overlaps External Documents View Areas			
			# Interrupted 9
Name	Restore Time	Account Number	#
12/22/08 16:44			
JO-9020			
● PHILLIPPI, KIRI	12/25/08 16:44	7648143955	
● KLANDERUD, ANTHOY	12/25/08 16:44	3157076544	
● HAGERMAN, LAKEDRA	12/25/08 16:44	165336040	
● WORLDS, ABDULNASSER	12/25/08 16:44	530019277	
● PHILLIPPI, KIRI	12/23/08 16:57	7648143955	
● KLANDERUD, ANTHOY	12/23/08 16:57	3157076544	
● HAGERMAN, LAKEDRA	12/23/08 16:57	165336040	
● WORLDS, ABDULNASSER	12/23/08 16:57	530019277	
JO-12495			

The Impacted Customer list displays the following fields and buttons:

- **# Interrupted** displays the number of customers who will be interrupted by the operations performed in this switching sheet.
- **# Isolated** displays the number of customers who will be isolated by the operations performed in this switching sheet.
- **# Restored** displays number of customers who will be restored by the operations performed in this switching sheet.
- **Name** displays the customer's name.
- **Restore Time** displays the restoration time for this customer, based on the Planned Date for the device or, if no Planned Date was specified, the Finish Date of the switching sheet. Isolated customers will not display a Restore Time.

- **Account Number** displays the customer's account number.
- **Critical** displays whether the customer is a critical customer or not.
- **#** displays the customer's street number.
- **Street** displays the name of the street.
- **City** displays the customer's street address.
- **Phone** displays the customer's phone number.
- **Result** displays the result of the impact, such as Restored or Interrupted.

Buttons

- The  **Rebuild the Impacted Customer List** button regenerates the list based on the most current information in the switching sheet. Each time you rebuild the list, it is saved to the database. The application uses your Study model to determine the Impacted Customers. Your study model should be set up or reset appropriately before generating the list.
- The  **Reset all Deleted Impacted Customers** button resets all impacted customers that were previously deleted from the list.
- The  **Print Preview** button opens the Content Selection List, from which a preview of the selected switching sheet sections can be initiated.
- The  **Print** button opens the Content Selection List, from which a hard copy of the selected switching sheet sections can be generated on the printer you select.
- The  **Object Focus** button focuses the primary Viewer on the selected device.

Color Coding

Rows (customers) on the list are color-coded to show the status:

- Green - Restored
- Yellow - Isolated
- Red - Deleted
- No background - Interrupted

Generating the List

To generate the Impacted Customer list, follow these steps:

1. On the Request tab, verify that a Start Date and Finish Date have been entered for the sheet. The system uses these fields to generate the Impacted Customer list and the estimated restoration time for each customer. The start of outage is the Start Date of the switching sheet, and the restoration time is the Finish Date.

Note: If a Planned Date is specified for a particular operation on the Steps tab, then the Planned Date, rather than the sheet's Start and Finish Date, is used to generate the impacted customer list for that operation.
2. Make sure that you have added all necessary steps to the switching sheet, and the sheet is ready to be worked. The steps do not need to be completed to produce the list.
3. On the Steps tab, click the **Reset Study Session** button on the toolbar, then select **Real-time** or **Nominal**. At this point, you can update your study session within the Study Viewer to depict what the model will be like when the work is carried out.

4. On the Impacted Customers tab, click the **Rebuild Impacted Customer List** button on the toolbar. The list is generated and displayed.

Deleting and Restoring Customers from the List

To remove a customer from the list, right-click the customer and select **Delete** from the pop-up menu. The row is highlighted in red.

Note: Removing the customer from the list does not remove the customer from the model; it simply marks the customer as deleted from the list. If you regenerate the list, the customer will still be marked as deleted.

To restore (un-delete) a customer, right-click the customer and select **Undelete** from the pop-up menu.

To restore all previously deleted customers, click the **Reset all Deleted Impacted Customers** button. All red highlighting is removed.

Moving Customers

If you realize that a customer has been incorrectly associated with a device, you may need to move a customer from a device that will be impacted to a device that will not be impacted. To move customers from their current device to another device, complete these steps:

1. On the Impacted Customers tab, select the row for the customer you want to move.

Note: You can only move one customer at a time.

2. Right-click and select **Move Customer...** from the pop-up menu. The Move Customer dialog box opens, displaying the customer name, address, and their original device.
3. Click on the new device in the Viewer. The New Device field on the Move Customer dialog is populated with the selected device.
4. Click **OK**. The system determines whether or not the new device is also an impacted device.

If the new device is not an impacted device, the customer is moved to the new device and is removed from the impacted customer list.

If the new device is an impacted device, a confirmation dialog box is displayed. Do one of the following:

- Click **Yes** to continue with the move. The customer is moved to the new device within the Impacted Customers list. If the selected customer was previously moved to a new device, another confirmation dialog is displayed. Do one of the following:
 - Click **Yes** to continue with the move. The existing customer move record is overwritten.
 - Click **Cancel** to return to the Move Customer dialog so you can select a different device.
 - Click **No** to cancel the move and close both the confirmation dialog and the Move Customer dialog.
- Click **No** to return to the Move Customer dialog so you can select a different device.
- Click **Cancel** to cancel the move and close both the confirmation dialog and the Move Customer dialog.

Checking for Overlaps

Once you have created steps for a planned event, generated the Impacted Customers list, and saved the switching sheet, you can cross-check switching sheets for overlap of date/time, control zone and affected devices within a specific time period. This allows planners to create a single planned event instead of two separate events and avoid visiting the same location twice or impacting the same customers twice within a short time frame. Planners can identify whether to change the current switching sheet in order to avoid affecting the same customers or same area multiple times in a certain time period.

Note: When an overlap occurs, the system does not prevent you from completing planned switching operations, but it does provide a warning indicating the overlap.

Overlap checking is performed automatically when a sheet changes state. If the current plan has a time, control zone, or device overlap with another plan, then the Overlap indicator is displayed on the switching sheet **Status Bar**. Use the Overlaps tab to view details about the overlaps.

This section includes the following topics:

- **Using the Overlaps Tab**
- **Color Coding**
- **Updating the Overlaps List**
- **Filtering the List**
- **Sorting the List**
- **Viewing an Overlapping Switching Sheet**

Using the Overlaps Tab

The Overlaps tab displays the following fields and buttons:

- The  **Update** button updates the Overlaps list based on the current settings.
- The  **From**  **To** date range fields allow you to specify the range of dates for which you want to view overlaps. The default date range is three weeks before and after the Start and Finish dates specified on the Request tab
- The  **Devices only** drop-down allows you to specify the type of overlaps you want to view. See **Updating the Overlaps List** on page 15-42 for details.
- The Overlaps table displays a row for each switching sheet that has an overlap with the active switching sheet (and meets the criteria specified above). The blank edit boxes at the top of each column allow you to filter the Overlaps list. See **Filtering the List** on page 15-42 for details.
- The **Sheet #** displays the switching sheet number that contains the overlaps.
- The **Type** column displays the type of switching sheet.
- The **# Shared Devices** column displays the number of device overlaps.
- The **# Shared Control Zones** column displays the number of overlapping control zones.
- The **# Shared Imp. Nodes** column displays the number of impacted nodes shared by the two switching sheets.
- The **# Shared Imp. Customers** column displays the number of impacted customers shared by the two switching sheets.
- The **Start Date** column displays the start date of the switching sheet.

- The **End Date** column displays the finish date of the switching sheet.

Color Coding

Rows on the Overlaps tab are color coded to indicate the type of overlap:

- Control zone overlaps are displayed in yellow.
- Device overlaps are displayed in red.

Updating the Overlaps List

Use the fields at the top of the Overlaps tab to re-generate the Overlaps list for a different time period or to show different types of overlaps. For example, you could update the list to show all device overlaps for a one-week period.

To update the Overlaps List:

1. Specify the time period and type of overlaps you want to see.
 - To show only switching sheets that have device overlaps within a specified date range, enter the **From** and **To** dates and select **Devices Only** from the drop-down.
 - To show only switching sheets that have control zone overlaps within a specified date range, enter the **From** and **To** dates and select **Control Zones** from the drop-down.
 - To show switching sheets that have both date/time and device overlaps, select **Time and Devices** from the drop-down.
 - To show switching sheets that have both date/time and control zone overlaps, select **Time and Control Zones** from the drop-down.
2. Click the **Update** button to update the list based on your selections.

Filtering the List

Once you have generated the list, use the edit boxes at the top of each column to filter the list by the values in any column. Type all or part of the text you want to filter by in the appropriate edit box. The list is filtered to display only sheets that contain matching values in this column. You can combine filter criteria by typing values for more than one column. As you type in each edit box, the list is filtered immediately based on entries in all boxes.

Sorting the List

You can resort the list by clicking on a column header. Click once to sort in ascending order; click again to sort in descending order. A  or  icon indicates the current sort column and sort direction. ( indicates ascending order;  indicates descending order.)

Viewing an Overlapping Switching Sheet

To view an overlapping switching sheet, double-click on the entry within the Overlaps List. The switching sheet opens in a new tab. Alternatively, you can right-click on the entry and select **Open Switching Sheet** from the pop-up menu.

Saving and Loading View Areas

While working with a switching sheet, you may often want to return to the same area of the map. Web Switching Management allows you to save an area of the map, called a view area, so that it can be loaded again later. This allows you to quickly focus the Viewer on a particular section of the model.

You can save multiple view areas for each Viewer. You can assign a description to each view area that identifies its contents and purpose. You can also select a saved view area to be loaded automatically into a Viewer when the switching sheet is opened.

This section includes the following topics:

- **Using the View Areas Tab**
- **Saving a Viewing Area**
- **Loading a Saved Viewing Area**
- **Reloading all Auto-Load Viewing Areas**
- **Deleting a Saved Viewing Area**

Using the View Areas Tab

Use the View Areas tab to save and load view areas. This tab displays the following fields and buttons:

- The **Auto-Load in Viewer** drop-down allows you to select the Viewer into which this viewing area will be loaded when the switching sheet is opened or focused upon. For example, if you shift your focus from one sheet to another, then the sheet that regains focus will reload its auto-loaded view areas.
- **Description** is the description of the saved viewing area. The default description is “View Area #,” where “#” is a uniquely generated ID number. You can change this description up until the associated switching sheet has reached the Completed state.
- The  toolbar button allows you to save the map area that is currently displayed in Viewer 1.
- The  toolbar button allows you to save the map area that is currently displayed in Viewer 2.
- The  toolbar button allows you to save the map area that is currently displayed in Viewer 3. This option is only displayed when running Web Switching with Operator's Workspace.
- The  toolbar button allows you to save the map area that is currently displayed in Viewer 4. This option is only displayed when running Web Switching with Operator's Workspace.
- The  toolbar button allows you to load the selected viewing area to Viewer 1.
- The  toolbar button allows you to load the selected viewing area to Viewer 2.
- The  toolbar button allows you to load the selected viewing area to Viewer 3. This option is only displayed when running Web Switching with Operator's Workspace.

- The  toolbar button allows you to load the selected viewing area to Viewer 4. This option is only displayed when running Web Switching with Operator's Workspace.
- The  toolbar button allows you to delete the selected viewing area.
- The  toolbar button allows you to reload all viewing areas marked for auto-loading.

Saving a Viewing Area

To save a viewing area, complete these steps:

1. In the Viewer window, navigate to the area of the map that you want to save as a viewing area.
2. On the View Areas tab in the Switching Management window, click one of the first four buttons on the toolbar (or use the right-click pop-up menu options).

- Click  to save the map area that is currently displayed in Viewer 1.
- Click  to save the map area that is currently displayed in Viewer 2.
- Click  to save the map area that is currently displayed in Viewer 3.
- Click  to save the map area that is currently displayed in Viewer 4.

Note: If the camera view is being used for a Viewer, it is also saved.

The new view area is added to the bottom of the list of saved views on the View Areas tab.

3. In the Description field, enter a meaningful name that describes the viewing area.
4. If you would like this viewing area to be loaded automatically the next time this switching sheet is opened, select the Viewer from the **Auto Load in Viewer** drop-down.

Note: The application will only allow you to select one saved viewing area to be auto-loaded for each Viewer.

Loading a Saved Viewing Area

After a viewing area has been saved for a switching sheet, you can quickly load the viewing area into the Viewer window.

To load a saved viewing area, complete these steps:

1. On the View Areas tab, select the viewing area you want to load.
2. Click the appropriate button to load the viewing area into the desired Viewer (or use the right-click pop-up menu options):

- Click  to load the selected viewing area to Viewer 1.
- Click  to load the selected viewing area to Viewer 2.
- Click  to load the selected viewing area to Viewer 3.
- Click  to load the selected viewing area to Viewer 4.

The selected viewing area is displayed.

Note: If the Viewer you selected is not running, a message is displayed.

Reloading all Auto-Load Viewing Areas

Use the **Reload** button on the View Areas tab to re-load all viewing areas marked for auto-loading. (The Auto Load in Viewer column indicates which viewing areas are specified for auto-loading in each Viewer.)

Note: If one or more Viewers is not running, a message is displayed.

Deleting a Saved Viewing Area

To delete a saved viewing area that you no longer need, complete these steps:

1. On the View Areas tab, select the viewing area you want to delete.
2. Click the **Delete** button (or right-click and select **Delete View Area** from the pop-up menu). The viewing area is removed from the list.

Viewing the Audit Log

The Tracking/Audit Log tab contains a list of status changes the sheet has gone through since it was created. An entry is added to the log whenever changes occur to the sheet state, including (but not limited to) status changes, sheet ownership changes, generation of the impacted customer list, and sheet version check-ins.

This section includes the following topics:

- **Using the Tracking/Audit Log Tab**
- **Adding a Manual Comment to the Audit Log**

Using the Tracking/Audit Log Tab

The audit log list on the Tracking/Audit Log tab displays the following fields and buttons:

- **Entry Date** displays the Date and Time when the change was made.
- **Sheet Revision** displays the version of the sheet when the change was made.
- **Sheet State** displays the state of the sheet when the change was made. (See **Switching Sheet States** on page 15-16 for state descriptions.)
- **Entry By** displays the user who initiated the change.
- **Details** displays a brief description of the audit entry.
- The **Comment** field is used to hand type in an Audit Log entry.
- The **Add Comment** button takes the comment entered in the Comment field and generates a new audit log entry.

You cannot change any information for existing entries in the audit log list.

As with other list displays, you can click and drag column headers to rearrange the order of columns. You can also resort the list by clicking on the Entry Date column header. By default, log entries are displayed in ascending chronological order.

Adding a Manual Comment to the Audit Log

The Tracking/Audit Log tab contains a Comment field that allows you to add a manual entry to the Audit Log.

To add a manual audit log entry, complete these steps:

1. On the Tracking/Audit Log tab, enter a comment in the Comment field.

2. Select the  **Add Comment** button. The new entry is added to the end of the Audit Log list. The comment will show up in the Details column of the new audit log entry.

Emailing Switching Sheet Data

At any time during the process of editing or viewing a switching sheet, you can email the switching sheet data to one or more recipients.

To email the data:

1. Select **E-Mail ...** from the File menu of the Switching Management Window.
2. From the pop-up dialog, check the box for each section you want included in the email data:
 - Request
 - Events and Crews
 - Switching Steps
 - Impacted Customer List
 - External Documents
 - Safety Documents
 - Audit Log
3. Choose the email format: PDF, RTF, HTML, or XML.

Note: The switching sheet data will be sent as an email attachment in the selected format. When the recipients receive the email, they will have to open the attachment in order to view the switching sheet data. Each external document is included as an attachment as well.

4. Click **OK**. Your email client prompts you to compose the email message.
5. Complete the **To** field and, optionally, any of the other fields available to you within your email client's compose dialog.

Note: The Subject field is automatically populated from the switching sheet. You can edit this field if you wish.

6. Enter any text you want to include with the message.

Note: You are not required to enter any text in the message. The switching sheet data will be sent in the attachment regardless.

7. Click the appropriate **Send** button for your email client.

Automatic Emails

Based on your system's configuration, emails can be automatically sent to an individual recipient or group and to the requesting user. Automatic emails are normally initiated after a switching sheet state change. For example, if a plan is rejected, the requesting user will be sent an email message indicating that the request was rejected and the reason for the rejection.

Adding External Documents to a Switching Sheet

Use the External Documents tab to attach documents to the switching sheet. These documents may be images, such as .jpg or .bmp files, Word docs, Excel spreadsheets, or any other supplemental documents. These documents are stored in the database, so shared file systems are not needed.

This section includes the following topics:

- **Using the External Documents Tab**
- **Adding an External Document**
- **Removing an External Document**
- **Saving an External Document to Another Location**

Using the External Documents Tab

This tab displays the following fields and buttons:

- **Name** is the name of the external file. This field cannot be changed.
- **Length** is the number of bytes in the file. This field cannot be changed.
- **Modified Date** is the date the file was last modified or saved. This field cannot be changed.
- **Description** is a user-defined description. You can enter up to 4000 characters in this field.
- **Status** is the status of the document. When you initially add an external document, its status is New; when you save the sheet, its status is cleared. If you delete an external document, its status is set to Deleted until you save the sheet. If you load and modify the document from this tab, then its status is set to Modified.
- The  **Add** button allows you to add an external document. See **Adding an External Document** on page 15-48. (See the next section for details.)
- The  **Delete** button deletes the selected external document(s). See **Removing an External Document** on page 15-49.
- The  **Open** button allows you to open the selected document. See **Opening and Editing an External Document** on page 15-49.
- The  **Save Document to Directory** button allows you to save a copy of the selected document to a directory of your choice. See **Saving an External Document to Another Location** on page 15-49.

Adding an External Document

To add an external document to the active switching sheet:

1. Click the **External Documents** tab.
2. Click **Add** button on the toolbar.
3. From the Select Files window, select the files you want to add to the sheet and click **Select Files**. The External Documents tab displays the selected files in green. This indicates that the files have been selected, but have not yet been saved.
4. In the **Description** field, type a description of each file that will convey its contents and purpose.

5. Click the **Save Sheet** button to save the selected documents to the database. The documents are no longer displayed in green, indicating that the documents have been saved.

Removing an External Document

To remove an external document from a switching sheet, do one of the following:

1. Click the **External Documents** tab.
2. Select the document you want to delete and click the **Delete** button (or right-click the document and choose **Delete** from the pop-up menu). The status of the selected document is set to Deleted, and the file is displayed in red.
3. Click the **Save Sheet** button to save your changes. The document list is updated and the file is removed from the database.

Note: The file is deleted from the database, but the local copy of the file on your PC is not removed.

Opening and Editing an External Document

To open an external document:

1. Click the **External Documents** tab.
2. Select the document you want to open and click the **Open** button (or right-click the document and select **Open**). The file is opened in the appropriate application, based on the document's extension.

Note: If the file extension is unknown or the application is not available, the document will not be opened and a message will be displayed indicating the problem.

Saving an External Document to Another Location

When you add a document to the external documents list, the system saves the document to the database. If you want to create a copy of the document and save it to a directory on your PC, follow these steps:

1. From the **External Documents** tab, select the document and click the **Save Document to Directory** button (or right-click and select **Save As**). The Save To dialog is displayed.
2. Browse to the directory where you want the file to be saved.

Note: Do not specify a file name. The file is saved to the specified directory using the original file name.

3. Click **Save to**. The file is saved to the specified directory.

Note: The switching sheet is still linked to the document that was previously saved to the database. If you want to attach the document you just saved, first delete the original document from the documents list and then add the document from the new location.

Emergency Switching

Emergency Switching includes any unplanned switching operations that occur due to events during storms, equipment failures, or even planned switching actions that fail or are incorrect. Unlike planned switching where the switching sheet is created and studied before it is issued, in emergency switching the switching sheet is created as the operations take place in real-time. Essentially, a switching sheet is created and implemented simultaneously. Steps are recorded on the Steps tab as the Control Tool actions are being performed, and each step is considered complete as it is being recorded.

Emergency switching operates just like planned switching, except that the Switching Management window and Viewer must both be in Real-Time Mode. Whenever switching steps are recorded in a switching sheet using the real-time Control Tool, the operation is considered emergency switching. The switching sheet provides a record of the switching operation.

This section includes the following topics:

- **Creating an Emergency Switching Sheet**
- **Recording Emergency Operations**

Creating an Emergency Switching Sheet

You can create an emergency switching sheet from Web Switching Management or Environment Manager. However, typically you will create emergency switching sheets from the Work Agenda or Event Details window. When you create an emergency sheet from either of these applications, the sheet is automatically associated to the event and saved to the database. The sheet cannot be deleted and will always remain associated to the originating event.

Note: The Web Switching Management application must be started before you can initiate an emergency switching sheet from Work Agenda, Event Details, or Environment Manager.

To create an emergency switching sheet, do any of the following:

- From the Work Agenda, click an event in the Work Agenda list and click the **Switching...** option from the **Actions** pull-down menu.
- From the Event Details Window, click the **Switching...** button from the Actions menu.
- From the Switching Management **File** pull-down menu, click **New...** to display the New window. Select Emergency as the sheet type and click **Create**.
- From Environment Manager, click the **New Switching Plan** button to display the New window. Select Emergency as the sheet type and click **Create**.

In all four cases, the Switching Management window displays the new emergency sheet. The Steps tab is active, Real-Time Mode is enabled, and Record Mode is turned on. If the VIEW1 Viewer is displayed, it transitions to Real-Time Mode also. You can begin recording steps as described in the next section.

Recording Emergency Operations

To record emergency switching operations, complete these steps:

1. Start a new emergency sheet as described in the previous section.
2. Create and complete steps by selecting devices in the Viewer window and selecting operations from the Control Tool. The process of adding recorded steps for emergency sheets is the same as for planned sheets in Real-Time Mode. See **Adding Recorded Steps to a Switching Sheet** on page 15-26 for details.

Once an action is completed in the Viewer, the following occurs:

- The status of the recorded step is set to Completed.

- The Executed By field is populated with your user ID.
 - The Completed Date field is populated with the date and time shown on the Control Tool.
 - Any crew ID selected and date/time specified from the Control Tool is also used to populate the Instructed To and Instructed Date fields.
 - Any outages created by completing steps from the Control Tool or from Switching Management are classified as Real Outages and not Planned Outages.
3. When you have completed all emergency steps, set the sheet state to **Complete** on the Tracking/Audit Log tab.

Note: Changes can no longer be made to this sheet.

Event Associations

Event associations are used to associate events to switching sheets. Associated events are displayed in the Events List on the Steps tab header. (See **Events List** on page 15-24.)

Events can be associated to switching sheets in two ways:

- **Hard Associations** are automatic associations that are normally made as you perform actions within Switching Management or perform actions from the Control Tool that are recorded into the switching sheet. An event can only have one hard association to a switching sheet. Hard associations cannot be broken once the association has been established.
- **Soft Associations** are associations that are normally added manually from the **Events List** in Web Switching Management. An event can be softly associated to an unlimited number of switching sheets. This type of association can be manually removed up until the associated switching sheet has reached the Completed state.

Note: Event associations do not occur when the event causing action is recorded into the Miscellaneous Log.

Hard Associations

Hard associations can also be further classified by type. There are four types of hard association relation types:

- **Master** is the relationship type made between a Planned switching sheet and its active master switching job. There can only be one Master Event associated to any single switching sheet.
- **Canceled** is the relationship type made between a Planned switching sheet and a canceled master switching job. There can be any number of Canceled event associations to a single switching sheet. These Canceled events were originally classified as Master Events for the plan.
- **Planned** is the relationship type made between a Planned switching sheet and a planned outage. A planned outage is an outage that was generated from a planned switching sheet after the completion of an action recorded in the Steps section of the plan.
- **Forced** is the relationship type made between an Emergency switching sheet and an unplanned outage or non-outage event. A Forced relationship will be made when recording Real Time actions into an Emergency switching sheet. The relationship can also be made when creating an Emergency plan for an event from the Work Agenda Jobs List or the events Event Details display.

Soft Associations

Soft associations only have one classification type:

- **Manual** is the relationship type made between a switching sheet and a manually associated event. Manual associations are also made between plans if an outage is hard associated to one plan and the outage is restored with another switching sheet. The plan that recorded the restoration step will have the event automatically associated to it with a classification type of Manual. Grouped events can also cause switching sheets to be manually associated.

Rules for Grouping Event Associations

When resolving outages in the network, it is common for events to be grouped together. When events are grouped, the associations will adhere to the following set of rules:

- If an event with no hard association consumes another event with no hard association, then the resulting event will have no hard association, and its manual associations will be a combined list of both events' manual associations.
- If an event with a hard association consumes an event with no hard association, then the resulting event will have the surviving event's hard association and a combined list of both events' manual associations.
- If an event with no hard association consumes an event with a hard association, then the resulting event will have the consumed event's hard association and a combined list of both events' manual associations.
- If an event with a hard association consumes another event with a hard association, then the resulting event will have the surviving event's hard association. The consumed event's hard association will be listed as a manual association along with the combined list of both events' manual associations.
- If an event consumes another event with an association to the same switching sheet, then the above rules will apply, but the plan will only be listed once in the event's association list. An event can only have one association to a specific switching sheet.

Working with Safety Documents

Safety Documents in the Oracle Utilities Network Management System are an electronic representation of the paper safety documents used for switching operations. Safety documents provide information about a particular operation and record the issuance and release of tags on devices. For switching operations, safety tags are first physically placed on devices, and then the safety document is issued. This effectively gives the crew permission to begin work. When the work is completed, the safety document is released, warning the crew that they must stay clear. Once the safety document is released, safety tags may be removed from the devices and the switches may then be closed.

This section includes the following topics:

- **Safety Documents Types**
- **Mapping Step Types to Safety Document Types**
- **Using the Safety Documents Tab**
- **Adding Safety State Transition Steps**
- **Safety Document Dialog**
- **Editing the Device List**
- **Executing Safety State Transition Steps**
- **Issuing Safety Documents**
- **Releasing Safety Documents**
- **Opening an Existing Safety Document**
- **Completing Safety Documents**

Safety Documents Types

A utility often has pre-defined safety documents established in its safety policy. While utilities often have specific names for these safety documents, Oracle Utilities Network Management System Web Switching Management has five types of safety documents that a utility can use to represent their established safety documents. This section describes five common safety document types:

- **Clearance** - indicates that clearance for work on a device or in an area has been obtained from the proper authority. The proper authority might be a control center supervisor or a regional dispatcher. Clearance documents imply that the device or area that requires work has been made safe to work on or in.
- **Hold** - indicates that the tagged device(s) should not be operated (e.g., if the device is open, it should remain open). Hold safety documents are used when the device is to be held open or closed in order to complete work in an area of the distribution system. The purpose of the Hold safety document is to protect crew members and prevent injury to human life. Hold safety documents are placed and removed by individuals who have authority over a specific area or operation and serve to restrict the operation of a device.
- **Hot** - indicates that hot line work is being performed (e.g., live wires), and if the tagged device(s) is opened, it should not be closed again until the safety document is released. When Hot Line safety documents are present, device operations in the area should be performed with caution.
- **Information Note** - provides some pertinent information about the device(s). Information Note safety documents are for informational purposes only. These safety documents do not restrict operation of the device, but provide information that a crew member or utility employee should be aware of when working on the device(s).

- **Warning Tag** - provides warning information about the tagged device(s). Like Information Note safety documents, Warning Tags are for informational purposes only. These safety documents do not restrict operation of the device(s), but provide information that a crew member or utility employee should be aware of when working on the tagged device(s).

While safety document names and features may vary, understanding these five types will help you understand the general use of most safety documents. Crews typically “own” safety documents and must authorize their release when they are finished working in an area or on a device.

Mapping Step Types to Safety Document Types

Each safety document type may be associated with only certain types of steps. These step-to-safety document mappings are configurable. The following list shows what types of steps each safety document type is pre-configured to accept.

- **Clearance:**
 - Place Clearance Tag
 - Remove Clearance Tag
 - Place Ground
 - Remove Ground
- **Hold:**
 - Place Hold Tag
 - Remove Hold Tag
 - Place Ground
 - Remove Ground
- **Hot:**
 - Place HOT Tag
 - Remove HOT Tag
 - Place Ground
 - Remove Ground
- **Informational Note:**
 - Place INFO Tag
 - Remove INFO Tag
- **Warning Tag:**
 - Place WARN Tag
 - Remove WARN Tag

Using the Safety Documents Tab

The Safety Documents tab displays a list of all safety documents associated with a switching sheet. This tab displays the following fields and buttons:

- **Type** displays the type of safety document. The five types (Hold, Clearance, Hot, Information Note, and Warning tag) are described in the previous section.
- **Doc #** displays the safety document number.
- **Status** displays the status of the safety document. Valid statuses are New, Issued, Released, Unissued, and Completed.

- **Crew** displays the crew assigned to this safety document.
- **Description** displays a description of the safety document.
- The  **Open** button opens the selected safety document. (Alternatively, you can double-click the document in the list.)
- The  **Delete** button deletes the selected safety document.

Adding Safety State Transition Steps

Each safety state transition step performs a single action, such as issuing or releasing a safety document. To add safety state transition steps, do the following:

1. On the Steps tab, select the steps to which you want the safety document associated. For instance, select Hold Tag steps and Grounding steps to create Hold safety documents. These steps then define the isolation and grounding points for the safety document.

2. Click the  **Create Safety Document** toolbar button. If the selected steps map to multiple types of safety documents, the Select Safety Type dialog opens prompts you to select the document type. For example, if you select only Grounding steps, then the Select Safety Type dialog allows you to choose Clearance, Hold, or Hot as the safety document type.

Note: If the selected step is blank or is associated to an operation for which no safety document is required, the following message appears: “No safety document type matches selected steps.” Click **OK** to dismiss the dialog.

3. Select the safety document type, and click **OK**. The safety document dialog is displayed. (See the following section for field descriptions.)
4. Enter a comment within the Description field on the safety document dialog, and click **Save** to save the comment.
5. Validate that step recording is still turned on in the Steps tab.
6. Click the **Issue** button on the safety document dialog. A new safety state transition step is recorded into the switching sheet steps list. The Operation column of the step indicates the type of operation being performed.
7. Select the **Release** and **Complete** buttons on the safety document. New safety state transition steps are recorded into the Steps list for the Release and Complete operations.
8. Close the safety document.

Note: If you changed the Description field, you will be asked to save the changes. All other fields are automatically saved within the associated switching steps.

For instructions on executing safety state transition steps, see **Executing Safety State Transition Steps** on page 15-57.

Safety Document Dialog

The safety document dialog displays the following fields and buttons:

- **Tag Devices** and **Phases** display the device(s) and their phases that the safety document is associated with. A safety document must include at least one device in this list or have an entry in the Ground Devices list.
- **Ground Devices and Phases** displays the device(s) and their phases that the safety document will protect and validate the grounds on. An entry in either the Ground Devices list or the Tag Devices list is required.
- **Other Equipment** is a text field that allows you to enter a list of non-modeled devices.
- **Feeder** displays the value found in the Feeder field of the originating switching sheet. To alter this value, you must change the Feeder field on the switching sheet Request tab.
- **Crew** displays the name of the crew that the safety document has been issued to. This field is auto-populated with the value from the Instructed To field in the safety state transition switching step. A crew is required in the Instructed To field of the step before an Issue safety state transition step can be completed.
- **Description** is a text field that allows you to enter notes for the safety document.
- **Audit Log** lists the date and time of each state change and associated device operation. It also lists the user name for the person that caused the state change and the crew that was issued or released during the change. For device operation entries, the device and operated phases is displayed.
- The  **Add Device** button allows you to add a new device to a safety document. (To enable this button, select a step on the switching sheet while the safety document is displayed.) The device from the selected step is added.
- The  **Remove Device** button allows you to remove a device from the safety document.
- The  **Issue** button adds a step for issuing the selected safety document. The step is added to the end of the steps list or after the step insertion indicator (if one has been placed).
- The  **Release** button adds a step for releasing the selected safety document. The step is added to the end of the steps list or after the step insertion indicator (if one has been placed). This button is only enabled if the safety document has been issued. Selecting this button will cause the Complete button to be enabled.
- The  **Complete** button adds a step for completing the selected safety document. The step is added to the end of the steps list or after the step insertion indicator (if one has been placed).
- The  **Save** button saves your changes to the safety document.
- The  **Print Preview** button allows you to select a report format and then preview the safety document in the selected format.
- The  **Print** button allows you to select a printer and then print a hard copy of the safety document to the selected printer.

- The  **Help** button displays the Safety Documents Help.
- The  **Close** button closes the safety document dialog.

Editing the Device List

Adding Devices

You can add additional devices to a safety document by doing the following:

1. Open a non-execute version of a safety document. (A non-execute version is loaded from the Safety Lists and the Control Tool. It displays a toolbar at the top of the dialog and no Execute button at the bottom.)

OR

From the associated switching sheet steps list, select the step with the device operation you want added to the safety document. For example, if you select an Add or Remove Tag step, the device is added to the Tag Devices list on the safety document dialog. If you select a Ground step, the device is added to the Ground Devices list.

2. Click the **Add Device** button on the safety document dialog. The new device is added to the appropriate device list.

Note: If the selected step is already associated to a safety document, then an error dialog indicates which safety document the step is already associated to.

Removing Devices

Note: Devices can only be removed from a safety document device list if their associated switching step has not been instructed or completed.

You can remove devices from a device list in two ways.

Option 1:

1. Open a non-execute version of a safety document. (A non-execute version is loaded from the Safety Lists and the Control Tool. It displays a toolbar at the top of the dialog and no Execute button at the bottom.)
2. Select the device you would like to remove from the device list.
3. Click on the **Remove Device** button. The device is removed from the list.

Option 2:

1. From the associated switching sheet steps list, select the step with the device operation that you want removed from the safety document. For instance, if you select an Add or Remove tag step, the device will be removed from the Tag Devices list. If you select a Ground step, the device will be removed from the Ground Devices list.
2. Click the **Unlink From Safety** button on the Steps tab toolbar. The device is removed from the safety document's device list.

Executing Safety State Transition Steps

Once a safety state transition step has been recorded, executing (completing) the step causes the Execute Safety Step dialog to be displayed. This dialog looks just like the original safety document dialog except that it has no toolbar and it displays two buttons: Execute and Cancel. Use this dialog to verify that the safety document information is correct, and then click the **Execute** button to execute the step.

When a tag step with an associated safety document is executed, the Control Tool executes placement of the appropriate tag (Hold, Hot, Clearance, etc.) on the device. The symbol on the device indicates that a condition exists on the device, that the area has not been issued to the crew, and thus it is not isolated yet. After the safety document has been issued, the symbol on the device changes to indicate that the tag is under the control of the safety document.

For example, a Hold tag may change to indicate Hold with a small lock symbol next to it. When a tag changes to a locked state, it is no longer possible for the user to remove the tag from the Control Tool. The safety document must be released before the tags can be removed from the Control Tool.

For more information, see one of the following topics:

- **Issuing Safety Documents While Executing Steps**
- **Releasing Safety Documents While Executing Steps**

Issuing Safety Documents

Safety documents are issued when an Issue safety document switching step is completed and the Execute button is selected on the safety document.

Note: The appropriate tag type must be placed on the device prior to the safety document being issued. For example, to issue a Hold document, you must place a Hold tag on the device before the safety document can be issued.

Once a safety document is issued:

- You cannot complete, delete, or reissue the safety document. The Description field is the only field that remains editable.
- The only button options available on the safety document dialog are Unissue and Release.
- The Viewer displays a symbol on all devices that are specified in the safety document to indicate that the safety document has been issued.

Issuing Safety Documents Manually

To issue a safety document manually:

1. Open the safety document (if it is not already open) by selecting the document on the Safety Documents tab and clicking the **Open** button.
2. Click the **Issue** button on the open safety document. A symbol appears on all devices in the Viewer that are specified in the safety document to indicate that the safety document has been issued.

Note: If you manually Issue a safety document in Real-Time Mode, a safety state transition step is automatically recorded to the Steps list, regardless of whether step recording is turned on. This is the audit of the safety documents transitions.

Issuing Safety Documents While Executing Steps

To issue a safety document through step execution:

1. From the Steps List, select the Issue safety state transition step and select the **Complete** button. The Execute Safety Step dialog opens, and the Execute and Cancel buttons are enabled.

Note: When instructing safety state transition steps in Real-Time Mode, the safety document dialog is not displayed. It is only displayed when the step is completed.

2. Select the **Execute** button. A symbol appears on all devices in the Viewer that are specified in the safety document to indicate that the safety document has been issued. The safety state transition step is also marked as Completed.

Unissuing a Safety Document

The Unissue button undoes the Issuing of the safety document. This action should be used to alter the device list within the safety document. This allows the area the safety document encompasses to be altered after the document has been issued.

Releasing Safety Documents

Safety documents are released when switching steps associated to a releasing safety document are completed and the Execute button is selected on the safety document. The symbol for the safety document is removed from the device in the Viewer and the original tag symbols are placed back onto the device. Once the document is released, the Description text field remains editable. At this point the Safety Document can either be reissued to a different crew or completed.

Releasing Safety Documents Manually

To release a safety document manually:

Note: The document must already be issued before it can be released.

1. Open the safety document (if it is not already open) by selecting the document on the Safety Documents tab and clicking the **Open** button.
2. Click the **Release** button on the open safety document. The symbol for the safety document is removed from the device in the Viewer and the original tag symbols are placed back onto the device.

Note: If you manually release a safety document in Real-Time Mode, a safety state transition step is automatically recorded to the Steps list, regardless of whether step recording is turned on. This is the audit of the safety documents transitions.

Releasing Safety Documents While Executing Steps

To release a safety document through step execution:

1. From the Steps List, select the Release safety state transition step and select the **Complete** button. The Execute Safety Step dialog opens, and the Execute and Cancel buttons are enabled.

Note: When instructing safety state transition steps in Real-Time Mode, the safety document dialog is not displayed. It is only displayed when the step is completed.

2. Select the **Execute** button. The symbol for the safety document is removed from the device(s) in the Viewer and the original tag symbols are placed back onto the device(s). The safety state transition step is also marked as Completed.

Opening an Existing Safety Document

To open an existing safety document, complete these steps:

From the Switching Management window:

1. Click the Safety Documents tab.
2. Select the safety document you want to open and click the **Open** button or double-click the document in the list. The safety document dialog is displayed.

From the Switching Management main menu:

1. Select **Open** from the File menu.
2. Select the Web Safety tab.
3. Select the safety document you want to open and click the **Open** button or double-click on the document in the list. The safety document dialog is displayed along with the associated switching sheet.

From the Control Tool:

1. For active safety documents, double-click on a device within the Viewer window.
2. From the Control Tool, click the **Safety Document(s)...** button.

If only one safety document is currently active on this device, then the safety document dialog is displayed.

If multiple safety documents are active, then a list is displayed. Select the safety document you want to load from this list. The safety document dialog is displayed along with the associated switching sheet.

Completing Safety Documents

When you have completed all steps in a switching sheet, you should complete all safety documents associated with the sheet.

To complete a safety document:

Option 1:

1. Follow the steps described above to open the safety document.
2. Click the **Complete** button on the safety document dialog.

Note: Once completed, the document is locked from further editing. When manually completing a safety document in Real-Time Mode, the action is automatically recorded in the associated switching sheet's Steps list.

3. Repeat these steps for all safety documents associated with the switching sheet.

Option 2:

Record a Complete safety state transition step (as described in the previous sections) and use that step to complete the safety document. Repeat for all safety documents associated with the switching sheet.

Outage Correction

You can also use Web Switching Management for outage correction. After an outage is completed, you can revise the outage restoration sequence and times by re-recording the outage restoration sequence in study mode.

This Outage Correction environment only includes the tools needed to re-record a completed outage in study mode:

- The Work Agenda only contains the Completed List.
- The Viewer cannot enter Real-Time mode.
- The Switching Management window can only display the Outage Correction switching sheet type, and cannot enter Real-Time mode.

Re-Recording the Outage Restoration Sequence in Study Mode

To re-record the correct outage restoration sequence, follow these steps:

1. From the Event Details for a completed event, press the **Switching...** button. An Outage Correction switching sheet is created for the event.
2. In the Outage Correction switching sheet, turn recording on.
3. Record the entire set of corrected outage and restoration steps in the Viewer, using the Control Tool's date/time selector to set the correct operation times.
4. Click the **Correct Outage** button on the Steps tab toolbar. A confirmation dialog appears.
5. Press **OK**. The system validates the plan and, if successful, replaces all affected customer data for the related outage and updates the new outage time, customer count, and outage device. The Event Details, when re-loaded, will reflect any partial restorations changes as well.

Using the Miscellaneous Log

The Miscellaneous Log automatically records all real-time switching actions that are not recorded in any switching sheet. The miscellaneous log does not need to be open for steps to be recorded; the system automatically detects when a step is performed that is not going to be recorded in any other switching sheet.

For emergency switching, you can use the miscellaneous log rather than creating emergency switching sheets. If you record steps in Real-Time Mode without adding them to a particular switching sheet, the steps are automatically added to the miscellaneous log.

This section includes the following topics:

- **Displaying the Miscellaneous Log**
- **Filtering the Log**

Displaying the Miscellaneous Log

To view the Miscellaneous Log, select the **Miscellaneous Log** from the Tools menu on the Switching Management window. The Miscellaneous Log tab opens.

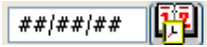
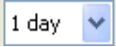
The Miscellaneous Log tab displays the same columns as the Steps tab (except for the Version column, which does not appear for miscellaneous log entries). See **Steps Tab** on page 15-19 for column descriptions.

The following fields and buttons are displayed at the top of the Miscellaneous Log tab.

- The first three fields and the **Fetch** button are used to filter the log. See the next section for details on using these fields.
- The **Previous** and **Next** buttons allow you to view the log entries for the previous or following period. For example, if the number of days drop-down is set to 1 week, then clicking the Previous button displays the previous week's log entries.
- The  **Complete** button completes the selected instructed steps. The status of the step changes to Completed.
- The  **Abort** button sets the status of an instructed step to Aborted. Use this if the step was never attempted.
- The  **Fail** button sets the status of an instructed step to Failed. Use this if the step was attempted but failed.
- The  **Object Focus** button focuses the Viewer on the selected device.
- The  **Cut** button allows you cut one or more steps from the miscellaneous log. You can then paste the steps into another switching sheet.

Filtering the Log

Use the fields at the top of the Miscellaneous Log tab to filter the list as follows:

1. Select a starting date from the date picker .
2. From the  drop-down, select the number of days from that starting date for which you want to see log entries.

3. Check or uncheck the **All Users** checkbox. When checked, the log shows steps that were executed by all users. When unchecked, the log shows only steps that were executed by you. Use the fields at the top of the tab to filter the log.
4. Click the **Fetch** button to refresh the list based on your entries.

Viewing Global Overlaps

The Global Overlaps list allows you to identify overlaps of date/time, control zone and affected devices within a specific time period for all active switching sheets.

To display the Global Overlaps list, choose **Tools>Switching Overlaps** from the Switching Management menu.

The fields, buttons, and options on this tab are nearly identical to the Overlaps tab that is displayed for individual switching sheets. See **Using the Overlaps Tab** on page 15-41 for more information.

Chapter 16

Power Flow, Suggested Switching, and Volt/VAr Optimization

This chapter covers the following topics:

- **Using Power Flow**
- **Using Suggested Switching**
- **Using Volt/VAr Optimization**

Using Power Flow

The Oracle Utilities Network Management System – Power Flow Extensions enable engineering analysis of the electrical distribution system for use in the operations and control center rather than for design, engineering or planning purposes. They assess the equipment loading and feeder voltage profiles for selected portions of the electrical network, and provide overload, fault, and voltage violation information for review. Oracle Utilities Network Management System Power Flow Extensions can also be used with the Oracle Utilities Network Management System – Switching Management Switching Plan Editor and Oracle Utilities Network Management System – Operator’s Workspace Look Ahead window to analyze switching options when creating switching plans.

Power Flow Extensions provides a set of windows that let you view the results of the power flow solution, enter and evaluate solution options, and modify execution parameters. Since Power Flow operates on an electrical island basis (typically a feeder or set of feeders), the information it shows for a selected object only includes those electrical elements within the island connected to that object. This helps keep the information down to a manageable level. When the status of a device changes, the connectivity of the island and associated objects change as well. You can then run Power Flow again to view the updated information.

This section includes the following topics:

- **Using Power Flow**
- **Power Flow Results**
- **Power Flow Sources**
- **Power Flow Feeders**
- **Power Flow Transformers**
- **Power Flow Capacitors**
- **System Feeder Loading Summary**
 - **Feeder Status and Tie Cap Summaries**

- **Power Flow Phase Flows**
- **Power Flow Fault Levels**
- **Power Flow Options**
- **Violation Summaries**
- **Using Switching Management with Power Flow Extensions**
- **Using Power Flow Extensions with Look Ahead**

Power Flow Results

The Power Flow Results window is the main Power Flow Extensions window. The Power Flow Results window displays power flow solution information, such as average voltage and current, for a selected object in the Viewer.

To open the Power Flow Results window from the Control Tool, click the **Power Flow** button. The values displayed in the Power Flow Results tool are updated when Power Flow completes the solution.

To open the Power Flow Results window from the Viewer, complete these steps:

1. Double click any device in the area you desire to see results. The Control Tool opens.
2. Click the **Power Flow** button. The Power Flow Results window opens.
3. Close the Control Tool by clicking the **Cancel** button. Once you have the Power Flow Results window open, you can access other Power Flow Extensions windows from there.

Power Results Window Fields

The Power Flow Results window displays the following fields:

- **Voltage** displays the average voltage of the energized phases.
- **Amps** displays the average current of the energized phases.
- **Device Type** displays the utility-defined equipment type.
- **Volt Viols** displays the number of voltage violations for a selected electrical island. You can view further details of the violations by selecting **Voltage Violations** from the Violations menu.
- **Ovlds** displays the number of conductor, switch, and transformer overload violations for a selected electrical island. You can view further details of the violations by selecting Conductor Violations, Transformer Violations, or Switch Violations from the Violations menu.
- **Losses (kW)** displays the total losses for a selected electrical island.
- **Status** displays the detailed status message of PFSservice or power flow solution, and a date/timestamp. The detailed status messages are provided to better alert the user of the quality of the power flow solution being generated. The possible status messages include:

Power Flow Solved
Power Flow Not Solved
Inaccurate Power Flow Solution
Bad Gen Topology Model
Bad Load Topology Model
Bad Line Topology Model
Bad Shunt Topology Model
Bad Xfmr Topology Model
Bad Bus Topology Model
Bad Link Topology Model
Bad System Base

Bad Line/Link Topology Model
Assign Two Islands to One Device

- The **Time/Date** field displays the last time a power flow solution was requested for the particular area of the model in which the user is working. It allows the user to quickly see whether or not the displayed solution is old and whether a new one should be generated.

As each object is selected in the Viewer, the Power Flow Results window updates with the calculated feeder voltages and equipment flows for the selected object.

Power Flow Results Menus

- **File menu**
 - **Phase Flows** - Opens the Phase Flows dialog box.
 - **Fault Levels** - Opens the Fault Levels dialog box.
 - **Exit** - Exits the Results window.
- **View menu**
 - **Power Flow Options** - Opens the Power Flow Options dialog box.
 - **Capacitors** - Opens the Capacitors window.
 - **Transformers** - Opens the Transformers window.
 - **Sources** - Opens the Sources window.
 - **Feeders** - Opens the Feeders window.
 - **Feeder Summary** - Opens the System Feeder Loading Summary window.
- **Violations menu**
 - **Voltage Violations** - Opens the Voltage Violations Summary.
 - **Backfeed Violations** - Opens the Backfeed Violations Summary.
 - **Transformer Violations** - Opens the Transformer Violations Summary.
 - **Switch Violations** - Opens the Switch Violations Summary.
 - **Conductor Violations** - Opens the Conductor Violations Summary.
- **Run menu**
 - **Solve Selected Island** - Solves the power flow for the electrical island connected to a selected object.
 - **Solve All Islands** - Solves the power flow for all electrical islands.

Power Flow Sources

The Power Flow Sources window displays the calculated values and parameters for the sources in a selected electrical island. A source is a defined object in the operations model from which power is injected into the network and a voltage reference is set.

Note: Sources have positive reactive and real power values to indicate they are providing power into the feeder/system/circuits. If the real and/or reactive power is negative, it indicates that the source is consuming power from the feeder/system/circuits.

To open the Power Flow Sources window, select **Sources** from the **View** menu in the Power Flow Results window. The Power Flow Sources window displays the following fields and buttons:

- The **Source Name** column contains the source identification.

- The **Voltage** column contains the source voltage in V or kV. You can enter a voltage value. The column background uses different colors to indicate related data quality. Green, yellow, and red are generally used to indicate Valid, Suspect, and Data Error.
- The **Angle** column contains the source angle in degrees. You can enter a source angle. This defaults to zero if none is specified in the database or if none is telemetered.
- The **kW** column contains the calculated real power flow from the source.
- The **kVar** column contains the calculated reactive flow from the source.
- The **Amps** column contains the calculated current flow from the source.
- The **Data Source** column indicates if the source voltage value has been initialized from the database, assigned from a SCADA measurement, or distributed from a user entry. Possible values are: Default, Scada, and User Entered.
- The **Data Quality** column displays the quality codes for the data. Possible values are: Valid, Held, Estimated, Alarm, Abnormal, Suspect, Over Limit, Under Limit, and Invalid.
- The **Apply** button applies any updated voltage and/or angle values.
- The **Restore to defaults** button resets the displayed source(s) voltage and angle values to their default values stored in the database.
- The **Exit** button closes the Power Flow Sources window.

Updating Voltage and Angle

To update the solution with a new source voltage and angle, complete these steps:

1. Click in the Voltage or the Angle column.
2. Enter a new value.
3. Click the **Apply** button and the Power Flow will re-execute with the changes.

Note: If the system is configured with a SCADA interface capable of providing values, new telemetered data will override the entered values.

Power Flow Feeders

The Power Flow Feeders window displays the calculated values and parameters of the feeders upstream from a selected object. The values are displayed for each phase at the feeder head's breaker.

Note: Feeders have a positive current (Solved Flow Amps) if current is flowing into the feeder through the feeder head. If the value for the feeder current is negative, the current is flowing out of the feeder.

To open the Power Flow Feeders window, select **Feeders** from the **View** menu in the Power Flow Results window. The Power Flow Feeders window displays the following fields and buttons:

- The **Feeder Name** column contains the feeder identification.
- The **Phase** column contains the feeder phase.
- The **Status** column contains the status of the feeder head breaker (open or closed).
- The **Telemetered Flow (Amps)** column contains the desired feeder current. You can enter a new current value. This column defaults to zero. The column background uses different colors to indicate related data quality. Green, yellow, and red are generally used to indicate Valid, Suspect, and Data Error.
- The **Solved Flow (Amps)** column contains the calculated feeder current.

- The **Data Source** column indicates if the feeder current value has been initialized from the database, assigned from a SCADA measurement, or distributed from a user entry. There are three different codes provided to indicate data source: Default, Scada, and User Entered.
- The **Data Quality** column displays the quality codes for the data. There are eight different codes provided for indicating data quality: Valid, Held, Estimated, Alarm, Abnormal, Suspect, Over Limit, and Invalid.
- The **Apply** button applies any updated Telemetered Flow value.
- The **Restore to defaults** button resets the displayed feeder(s) load model kW and kVAR values to their default values stored in the database.
- The **Exit** button closes the Power Flow Feeders window.

Updating the Feeder Load

To update the feeder load with a new feeder current, complete these steps:

- Click in the Telemetered/Flow (Amps) column.
- Enter a new value.
- Click the **Apply** button. The power flow solution is re-calculated with the changes to the feeder loads down the feeder.

Note: If the system is configured with a SCADA interface capable of providing values, new telemetered data will override the entered values.

Power Flow Transformers

The Power Flow Transformers window displays the set point and individual phase voltage at each transformer or voltage regulator within a selected electrical island.

To open the Power Flow Transformers window, select **Transformers** from the **View** menu in the Power Flow Results window. The Power Flow Transformers window displays the following fields and buttons:

- The **Transformer Name** column contains the transformer name.
- The **Automatic Control** column contains transformer regulation control status, either “Auto On” or “Auto Off”.
- The **Reg Bus Set Pt. Voltage** column contains the entered set point voltage in V or kV.
- The **Reg Bus A Voltage** column contains the Calculated A phase voltage in V or kV.
- The **Reg Bus B Voltage** column contains the Calculated B phase voltage in V or kV.
- The **Reg Bus C Voltage** column contains the Calculated C phase voltage in V or kV.
- The **Tap Step** column contains the position of the tap.
- The **Max Tap Step** column contains the maximum tap position.
- The **Min Tap Step** column contains the minimum tap position.
- The **Apply** button applies any updated Automatic Control, Set Pt Voltage, or Tap Step value.
- The **Restore to defaults** button resets the displayed transformer/regulator(s) control setting, voltage set point, and tap step position values to their default values stored in the database.
- The **Exit** button closes the Power Flow Transformers window.

Changing the Set Point Voltage

To change the set point voltage, complete these steps:

- Click on the Reg Bus Set Pt Voltage column.
- Enter a new value in the column.
- Toggle Auto On or Auto Off text button in the Status column for a transformer row to toggle the transformer regulation control to Auto Off or Auto On respectively.
- Click the **Apply** button. Power Flow will use the new value.

Power Flow Capacitors

The Power Flow Capacitors window displays the calculated reactive power of each phase of capacitor banks within a selected electrical island.

Note: Loads and Capacitors use the same sign convention to indicate real and reactive power into that device. Capacitors have negative reactive power values to indicate they are providing power into the circuits. Loads have positive reactive power values to indicate they are consuming power from the system.

To open the Power Flow Capacitors window, select **Capacitors** from the **View** menu in the Power Flow Results window. The Power Flow Capacitors window displays the following fields and buttons:

- The **Shunt Name** column contains the name of the capacitor bank.
- The **Phase A kVAR** column contains the phase A reactive power.
- The **Phase B kVAR** column contains the phase B reactive power.
- The **Phase C kVAR** column contains the phase C reactive power.
- The **Regulation Type** column displays the capacitor regulation type. Possible values are: Fixed, Bus Voltage, Line Current, Line VAR, Line Power Factor, Time, or Temperature.
- The **Measured Attribute** column contains the monitored attribute of regulated bus voltage, line flow or area time/temperature.
- The **On Threshold** column contains the regulated capacitor turn on threshold setting.
- The **Off Threshold** column contains the regulated capacitor turn off threshold setting.
- The **Number of Energized Capacitors** column contains the number of energized capacitors.
- The **Number of Capacitors in Cap Bank** column contains the total number of capacitors in bank.
- The **Automatic Control** column contains regulated capacitor control status, either Auto On or Auto Off.
- The **Apply** button applies any updated On/Off Threshold, Energized Bank Number, or Automatic Control value.
- The **Restore to defaults** button resets the displayed capacitor bank(s) on threshold, off threshold, and control setting to their default values stored in the database.
- The **Exit** button closes the Power Flow Capacitors window.

System Feeder Loading Summary

The System Feeder Loading Summary window displays summary information on the feeder loading. This section includes the following topics:

- **Feeder Loading Summary Window Description**
- **Viewing the Feeder Voltage Profiles**
- **Viewing the Tie Point Capacities**
- **Transferring Feeder Load**

Feeder Loading Summary Window Description

To open the System Feeder Loading Summary window, select **Feeder Summary** from the View menu in the Power Flow Results window. The System Feeder Loading Summary window displays the following fields and buttons:

- The **Feeder** column contains the feeder identification.
- The **Min LV Voltage** column contains the minimum voltage on the feeder.
- The **Amps** column contains 3-phase average feeder current.
- The **Used Capacity %** column displays feeder breaker used capacity percentage.
- The **kVA** column contains 3-phase total feeder kVA
- The **Power Factor** column contains 3-phase total feeder power factor.
- The **Load (kW)** column contains 3-phase total kW in served load.
- The **Load (kVar)** column contains 3-phase total kVAR in served load.
- The **Load (kVA)** column contains 3-phase total kVA in served load.
- The **Losses (kW)** column contains 3-phase total kW losses.
- The **Voltage Profile** button opens the Feeder Voltage Profile window. See **Viewing the Feeder Voltage Profiles** on page 16-7.
- The **Tie Point Capacities** button opens Feeder Tie Point Capacity window. See **Viewing the Tie Point Capacities** on page 16-8 window.
- The **Unload Feeder** button allows you to transfer a designated quantity of load or the entire feeder load. This can be used to relieve an overload on a specific feeder. See **Transferring Feeder Load** on page 16-30.
- The **Exit** button closes the System Feeder Loading Summary window.

Viewing the Feeder Voltage Profiles

The Feeder Voltage Profile window displays the voltages at load points on a feeder from lowest to highest.

To open the Feeder Voltage Profile window, select a row in the System Feeder Loading Summary window and click the **Voltage Profile** button. The Feeder Voltage Profile window displays the following fields and buttons:

- The **Load Name** column contains the name of the load point.
- The **HV Voltage** column contains the primary side voltage.
- The **LV Voltage** column contains the secondary side voltage if the load transformer is explicitly modeled.
- The **Load kW** column contains the kilowatt load.
- The **Load kVar** column contains the kiloVar load.

- The **Load kVa** column contains the kilovoltamperes load.
- The **Distance** column contains the distance in feet or meters from the feeder breaker.
- The **View...** button focuses the Viewer on the selected load point.
- The **Exit** button closes the Feeder Voltage Profile window.

Viewing the Tie Point Capacities

The Feeder Tie Point Capacity window displays the available feeder tie points, the adjacent feeders to which the tie points are connected, and the tie capacities.

To open the Feeder Tie Point Capacity window, select a row in the System Feeder Loading Summary (see **System Feeder Loading Summary**) and click the **Tie Point Capacities** button. The Feeder Tie Point Capacity window displays the following fields and buttons:

- The **Feeder** column contains the feeder name.
- The **Phase A Amps** column contains the feeder head phase A amps.
- The **Phase B Amps** column contains the feeder head phase B amps.
- The **Phase C Amps** column contains the feeder head phase C amps.
- The **Phase A Used Capacity %** column displays the Phase A feeder breaker used capacity percentage.
- The **Phase B Used Capacity %** column displays the Phase B feeder breaker used capacity percentage.
- The **Phase C Used Capacity %** column displays the Phase C feeder breaker used capacity percentage.
- The **Switch** column contains the tie point name.
- The **Phase A Capacity Amps** column contains the capacity available on the identified feeder in amps.
- The **Phase B Capacity Amps** column contains the capacity available on the identified feeder in amps.
- The **Phase C Capacity Amps** column contains the capacity available on the identified feeder in amps.
- The **View** button focuses the Viewer on the selected tie point.
- The **Exit** button closes the Feeder Tie Point Capacity window.

Transferring Feeder Load

To transfer a designated quantity of load or the entire feeder load, see **Transferring Feeder Load** on page 16-30.

Feeder Status and Tie Cap Summaries

The Feeder Status and Feeder Tie Capacity Summaries display feeder loading data for a user-selected control zone area. To open the Feeder Status and Feeder Tie Capacity Summaries, select the appropriate button in the Summaries toolbox of the Environment Manager:

This section includes the following topics:

- **Feeder Summary Displayed Zones**
- **Initializing the Area of Study**
- **Changing the Area of Study**
- **Feeder Status Summary**
- **Feeder Tiecap Summary**

Feeder Summary Displayed Zones

The Feeder Summary Displayed Zones window allows you to select the control zones to be displayed in the Feeder Status Summary window and Feeder Tiecap Summary window. This window is displayed when you click the **Select Zones** button from the Feeder Status and Feeder Tie Capacity Summary windows.

The Feeder Summary Displayed Zones Window contains two panels. The first panel contains the selectable control zone hierarchy. It is the same control zone hierarchy used in the Oracle Utilities Network Management System operations model, including company, control center, substation and feeder. The Selected Zones panel lists all currently selected control zones. The Feeder Summary Displayed Zones window displays the following fields and buttons.

- The **All Zones** area displays the control zones in the distribution system.
- **Zone Owners** displays the user(s) currently subscribed to the control zone. If no user is subscribed to the control zone, “system” displays in this field.
- **Selected Zones** lists the control zone(s) currently selected. Selected control zones are indicated by a blue highlight on the row.
- The **Clear** button clears all zone selections.
- The **Apply** button defines the currently selected control zones as the area of study in the Feeder Status and Feeder Tiecap Summaries.
- The **Exit** button closes the Feeder Summary Displayed Zones window.

Initializing the Area of Study

To select the area of study for the Feeder Status and Feeder Tiecap Summaries, complete these steps:

1. Open the Environment Manager Summaries toolbox.
2. Click the **Feeder Status Summary** button.
3. Click the **Select Zones** button. The Feeder Summary Displayed Zones window opens.
4. Select one or multiple control zones on any row in the control zone hierarchy.
5. Click the **Apply** button to use the selected zones as the area of study. The Feeder Status Summary appears, detailing the selected control zone feeder loading data.

Changing the Area of Study

To change the area of study for the Feeder Status and Feeder Tiecap Summaries, complete these steps:

1. From either the Feeder Status or Feeder Tiecap Summary windows, click the **Select Zones** button. The Feeder Summary Displayed Zones window opens.
2. Select one or multiple control zones on any row in the control zone hierarchy.
3. Click the **Apply** button to use the selected zones as the area of study. The Feeder Status Summary or Feeder Tiecap Summary will update detailing the selected control zone feeder loading data

Feeder Status Summary

The Feeder Status Summary provides the user with a tool to assess and monitor feeder loading data for a selected area. The Feeder Status Summary window displays the real time feeder loading data for a selected area, including by-phase currents, kW, kVAR, used capacity percentages, overloads, voltage violations and feeder losses.

To open the Feeder Status Summary select the appropriate button in the Summaries toolbox of the Environment Manager. The Feeder Status Summary window displays the following fields and buttons:

- The **Feeder** column contains the feeder name
- The **Amps A/B/C** column contains the by phase feeder current from top to bottom order of A phase amps, B phase amps, and C phase amps.
- The **Used Capacity % A/B/C** column contains the by phase feeder breaker used capacity from top to bottom order of A phase, B phase, and C phase calculated from the by phase feeder current and the feeder breaker limit.
- The **kW A/B/C** column contains the by phase feeder kW load from top to bottom order of A phase kW, B phase kW, and C phase kW.
- The **kVAR A/B/C** column contains the by phase feeder kVAR load from top to bottom order of A phase kVAR, B phase kVAR, and C phase kVAR.
- The **Conductor Violations A/B/C** column contains the by phase conductor violation counts from top to bottom order of A phase, B phase, and C phase.
- The **Backfeed Violations A/B/C** column contains the by phase backfeed violation counts from top to bottom order of A phase, B phase, and C phase.
- The **Switch Violations A/B/C** column contains the by phase switch violation counts from top to bottom order of A phase, B phase, and C phase.
- The **Transformer Violations A/B/C** column contains the by phase transformer violation counts from top to bottom order of A phase, B phase, and C phase.
- The **Voltage Violations A/B/C** column contains the by phase voltage violation counts from top to bottom order of A phase, B phase, and C phase.
- The **Power Losses (kW)** column contains the by phase kW feeder losses calculated in each three phase, two phase, and single phase conducting segment from the feeder breaker to the end of the feeder.
- The **Select Zones** button brings up the Feeder Summary Displayed Zones window.
- The **View...** button focuses the Viewer on the selected feeder breaker.
- The **Exit** button closes the Feeder Status Summary window.

Feeder Tiecap Summary

The Feeder Tiecap Summary provides the user with a mechanism to assess and monitor the pickup capacity of adjacent feeders in the user selected control zone area. The Feeder Tiecap Summary window displays the feeder tie point capacity summary information of selected area, including tie switch capacity, tie feeders' by-phase currents and used capacity percentages.

To open the Feeder Tiecap Summary, select the appropriate button in the Summaries toolbox of the Environment Manager. The Feeder Tiecap Summary window displays the following fields and buttons:

- The **Feeder** column contains the feeder name
- The **Amps A/B/C** column contains the by phase feeder current from top to bottom order of A phase amps, B phase amps, and C phase amps.
- The **Used Capacity % A/B/C** column contains the by phase feeder breaker used capacity from top to bottom order of A phase, B phase, and C phase calculated from the by phase feeder current and the feeder breaker limit.
- The **Tie Switch** column contains the identified open feeder tie point.
- The **Capacity Amps A/B/C** column contains the by phase amps which can be picked up by the identified pickup feeder before an overload or voltage violation would occur.
- The **Pickup Feeder** column contains the adjacent feeder name
- The **Amps A/B/C** column contains by phase feeder current on the adjacent feeder from top to bottom order of A phase amps, B phase amps, and C phase amps.
- The **Used Capacity % A/B/C** column contains the by phase feeder breaker used capacity on the adjacent feeder from top to bottom order of A phase, B phase, and C phase calculated from the by phase feeder current and the feeder breaker limit
- The **Select Zones** button brings up the Feeder Summary Displayed Zones window.
- The **View...** button focuses the Viewer on the selected tie point.
- The **Exit** button closes the Feeder Tiecap Summary window.

Power Flow Phase Flows

The Power Flow Phase Flows dialog box displays detailed power flow information, depending on the type of object selected in the Viewer. This window displays voltages, real and reactive power flow, and current for each phase present on a selected object.

To open the Power Flow Phase Flows dialog box, select **Phase Flows** from the **File** menu in the Power Flow Results window. The Power Flow Phase Flows dialog displays the following fields and buttons:

- **Device Name** displays the utility-defined device identification.
- **Type Name** displays the utility-defined device type.
- The **Voltage** column contains the phase voltage.
- The **kW** column contains the phase real power flow.
- The **kVar** column contains the phase reactive power flow.
- The **Amps** column contains the phase current.
- The **Limit** column contains the phase current limit (in amps).
- The **Exit** button closes the Power Flow Phase Flows window.

Power Flow Fault Levels

The Power Flow Fault Levels dialog box displays the available fault current at a selected load point in the network. The current in amperes is shown for phase-to-ground, phase-to-phase, and three-phase-to-ground faults.

To open the Power Flow Fault Levels dialog box, select **Fault Levels** from the **File** menu in the Power Flow Results window. The Power Flow Fault Levels dialog displays the following fields and buttons:

- **Device Name** displays the utility-defined device identification.
- **Single Phase (Amps)** displays the available fault current for a phase-to-ground asymmetric fault.
- **Two Phase (Amps)** displays the available fault current for a phase-to-phase asymmetric fault.
- **Three Phase (Amps)** displays the available fault current for a three-phase-to-ground symmetric fault.
- The **Exit** button closes the Power Flow Fault Levels dialog.

Power Flow Options

Use the Power Flow Options dialog box to set the options for solving the system power flow.

To open the Power Flow Options dialog, select **Power Flow Options** from the View menu in the Power Flow Results window. The Power Flow Options dialog contains several sections or panels:

- **Controls Panel**
- **Limits Panel**
- **Load Dist Panel**
- **Multi Load Panel**
- **Fault Impedance Panel**
- **PSSU Panel**
- **Triggers Panel**

Controls Panel

The **Controls** panel allows you to enable/disable various transformer and capacitor controls in the system and choose the voltage display base.

- **Transformer Tap Controls** enables automatic transformer tap controls globally in the system.
- **Capacitor Switching Controls** enables automatic capacitor switching controls globally in the system.
- **Capacitor TIME/VAR Controls** enables automatic capacitor TIME/VAR controls globally in the system.
- **Secondary Voltage Base** enables the display of each device's voltages at its secondary voltage base.
- **Nominal Voltage Base** enables the display of each device's voltages at its nominal voltage base.

Limits Panel

The **Limits** panel allows you to select the set of line limits to use. You can select one of eight sets of line limits by selecting different combinations of **Seasons** (Winter, Spring, Summer, Fall) and **Line Limits** (Normal, Emergency).

Voltage Limits allows you to set the high and low default voltage limits (in per-unit).

Load Dist Panel

The **Real Time Load Distribution** area of the **Load Dist** panel allows you to select the load scaling type for the selected feeder, island or system. This panel displays the following options:

Load Scaling Types

- **Feeder Load Set Scaling:** The feeder loads are adjusted only if the measurements on the feeder are changed.
- **All Downstream Load Scaling:** All loads downstream of the breaker of selected feeder are adjusted if the measurements at the selected feeder are changed, including the selected feeder itself and all connected feeders downstream
- **Dynamic Load Set Scaling:** Power flow automatically identified and invoked the optimal load scaling type based on the availability of measurements, either one of above types, or the combination.

Used Measurement Set

- **Feeder heads only:** Only feeder head measurements are used to adjust loads.
- **All Measurement points:** Both feeder head and mid-points measurements are used to adjust loads.

Scaling Applied Area

- If the **Selected Feeder** button is selected, the load scaling type and user measurement set selections are applied to the feeder group of selected object only.
- If the **Selected Island** button is selected, the load scaling type and user measurement set selections are applied to the island of selected object only.
- If the **Whole System** button is selected, the load scaling type and user measurement set selections are applied to all islands and feeders in the system.

Restore Load to Database Defaults

- If the **Selected Feeder** button is selected, restores the feeder group loads to their database default values by selecting the scaling applied area as selected feeder and clicking on this button.
- If the **Selected Island** button is selected, restores the island loads to their database default values by selecting the scaling applied area as selected island and clicking on this button.
- If the **Whole System** button is selected, restores the entire system loads to their database default values by selecting the scaling applied area as whole system and clicking on this button.

Multi Load Panel

- The **Peak Load Analysis** area of the **Mult. Load** panel allows you to select the peak load analysis type (Both, Seasonal Peak Load, Daily Peak Load).
- The **Peak Load Determination** area of the **Mult. Load** panel allows you to select the peak load scenarios derivation strategy (No Peak Load Scenarios, Scale Real Time Loads, Derive Peak Loads).
- The **Daily Peak Scaling Factor** is the factor by which all loads are multiplied when constructing the daily peak load scenario (when scaling is the selected strategy).
- The **Seasonal Peak Scaling Factor** is the factor by which all loads are multiplied when constructing the seasonal peak load scenario (when scaling is the selected strategy).

Fault Impedance Panel

- The **Fault Impedance** panel allows you to set the single, two, and three-phase default fault impedances for short-circuit calculations (in ohms).

PSSU Panel

- The **PSSU File** panel allows you to enter the file path and file name of the ASCII case file.
- The **Create File By** drop-down menu allows you to select whether the PSS/U file is generated for a selected feeder group or for the entire electrical island.
- The **Generate PSS/U File** button generates a PSS/U ASCII input file. See **Generating ASCII Case Files** on page 16-14.

Triggers Panel

The **Triggers** panel allows you to enable and disable execution of Power Flow via analog measurements, digital status changes, and on-demand operator actions.

Periodic Triggers allows you to turn on/off the periodic execution of the Feeder Load Management function (a different application from Power Flow).

Analog Triggers allows you to turn on/off Power Flow processing of any analog measurements.

Digital Triggers allows you to turn on/off Power Flow processing of any operated switches or SCADA switches.

On-Demand Triggers allows you to turn on/off Power Flow solutions.

Power Flow Options Buttons

The Power Flow Options dialog displays the following buttons:

- The **Apply** button applies the information entered in the Power Flow Options dialog box to be used during the power flow solution.
- The **Restore to defaults** button resets the displayed Power Flow Options tab system settings to their default values stored in the database.
- The **Exit** button exits the Power Flow Options dialog box.

Generating ASCII Case Files

Power Flow Extensions generate flat text files based on current network information to use with third party planning software to produce network case studies.

To generate the ASCII text file, complete these steps.

1. Open the Power Flow Options dialog box by selecting Power Flow Options from the View menu in the Power Flow Results window.
2. Type a file path and name in the PSS/U File Generation field.
3. Select to generate from either the Feeder Circuit or the Power Flow Island in the Create File By drop down menu.
4. Click the **Generate PSS/U File** button. The text file will be saved to the directory you defined.

Note: Currently the only supported file format is PSS/U.

Violation Summaries

Power Flow Extensions provides summaries of limit violations, including load point voltage, conductor flow, switch flow, and transformer loading. In order to control the volume of information presented, the summaries include only the calculated results for a selected object's electrical island. If an object in a different electrical island is selected, the summaries automatically refresh.

This section includes the following topics:

- **Power Flow Voltage Violations Summary**
- **Power Flow Backfeed Violations Summary**
- **Power Flow Conductor Violations Summary**
- **Power Flow Conductor Violations Summary**
- **Power Flow Conductor Violations Summary**

Power Flow Voltage Violations Summary

The Power Flow Voltage Violations Summary lists the load points whose calculated voltages are outside the pre-set limits. (Limits are set in the Power Flow Options dialog box.)

To display the Voltage Violations Summary, select **Voltage Violations** from the **Violations** menu in the Power Flow Results window. The Power Flow Voltage Violations Summary window displays the following fields and buttons:

- The **Voltage Location** column contains the identification of the load point in violation.
- The **Phase** column contains the phase of the violation.
- The **Voltage** column contains the calculated phase to ground voltage.
- The **Low Limit** column contains the set phase to ground voltage lower limit.
- The **High Limit** column contains the set phase to ground voltage upper limit.
- The **View** button focuses the Viewer window on the selected device.
- The **Release Overloads** button triggers the Volt/VAr Optimization application to release the overloads or overlimits.
- The **Exit** button closes the Power Flow Voltage Violations window.

Power Flow Backfeed Violations Summary

The Power Flow Backfeed Violations Summary lists devices that are being backfed. A device that is backfed is one whose current flow is opposite to the normal directional flow.

To display the Power Flow Backfeed Violations Summary, select **Backfeed Violations** from the **Violations** menu in the Power Flow Results window. The Power Flow Backfeed Violations Summary displays the following fields and buttons:

- The **Device Name** column contains the identification of the device in violation.
- The **Phase** column contains the phase of the backfeed violation.
- The **Flow** column contains the current flow being backfed through the device.
- The **View** button focuses the Viewer window on the selected device.
- The **Release Overloads** button triggers the Volt/VAr Optimization application to release the overloads or overlimits.
- The **Exit** button closes the Power Flow Backfeed Violations window.

Power Flow Conductor Violations Summary

The Power Flow Conductor Violations Summary lists the most severe conductor violation for each phase of the selected electrical island.

To display the Power Flow Conductor Violations Summary, select **Conductor Violations** from the **Violations** menu in the Power Flow Results window.

The Power Flow Conductor Violations Summary displays the following fields and buttons:

- The **Conductor Name** column contains the identification of the conductor in violation.
- The **Phase** column contains the phase of the conductor violation.
- The **Flow (Amps)** column contains the current through the conductor phase in violation.
- The **Normal Limit (Amps)** column contains the predefined limit value for a normal load scenario. You can select the limit used in overload detection from the Power Flow Options dialog box.
- The **Emergency Limit (Amps)** column contains the predefined limit value for an emergency load scenario. You can select the limit used in overload detection from the Power Flow Options dialog box.
- The **View** button focuses the Viewer window on the selected conductor.
- The **Release Overloads** button triggers the Volt/VAr Optimization application to release the overloads or overlimits.
- The **Exit** button closes the Power Flow Conductor Violations window.

Power Flow Switch Violations Summary

The Power Flow Switch Violations Summary lists all switches whose current flow exceeds the pre-set limits. (Limits are set in the Power Flow Options dialog box.)

To display the Power Flow Switch Violations Summary, select **Switch Violations** from the **Violations** menu in the Power Flow Results window. The Power Flow Switch Violations Summary displays the following fields and buttons:

- The **Switch Name** column contains the identification of the switch in violation.
- The **Phase** column contains the phase of the switch violation.
- The **Flow (Amps)** column contains the current through the switch phase in violation.
- The **Limit (Amps)** column contains the predefined limit value.
- The **View** button focuses the Viewer window on the selected switch.
- The **Release Overloads** button triggers the Volt/VAr Optimization application to release the overloads or overlimits.
- The **Exit** button closes the Power Flow Switch Violations window.

Power Flow Transformer Violations Summary

The Power Flow Transformer Violations Summary lists all transformers whose apparent power flow exceeds the preset limits. (Limits are set in the Power Flow Options dialog box.)

To display the Power Flow Transformer Violations Summary, select **Transformer Violations** from the **Violations** menu in the Power Flow Results window. The Power Flow Transformer Violations Summary displays the following fields and buttons:

- The **Transformer Name** column contains the identification of the transformer in violation.
- The **Phase** column contains the phase of the transformer violation.

- The **Load (KVA)** column contains the apparent power flow through the transformer phase in violation.
- The **Normal Limit (KVA)** column contains the predefined limit value for a normal load scenario. You can select the limit used in overloads detection from the Power Flow Options dialog box.
- The **Emergency Limit (KVA)** column contains the predefined limit value for an emergency load scenario. You can select the limit used in overloads detection from the Power Flow Options dialog box.
- The **View** button focuses the Viewer window on the selected transformer.
- The **Release Overloads** button triggers the Volt/VAr Optimization application to release the overloads or overlimits.
- The **Exit** button closes the Power Flow Transformer Violations window.

Using Switching Management with Power Flow Extensions

Understanding the impact on equipment loading and feeder voltage conditions is an integral part of switching plan preparation. For this reason, Power Flow Extensions provides Oracle Utilities Network Management System – Switching Management with the ability to check switching steps. Power Flow Extensions provide the following capabilities in Oracle Utilities Network Management System Switching Management:

- Calculating the interrupting current and total overloads for individual steps based either on Real Time Load, Daily Peak Load, or Seasonal Peak Load.
- Displaying a list of more detailed power flow information for a sequence of steps.
- Displaying lists of violations for a particular step including voltage, conductor, switch, and transformer.
- Setting and scaling the loads affected by a switch plan using a user-entered factor.
- Scheduling the load in the switching island for a day type, time of day, and temperature.
- Displaying power flow information for the feeders affected by the switching plan.

Calculating Power Flow for Switching Steps

When creating a switching plan, you can solve the power flow for each step in the sequence of switching steps. After creating at least one switching step, you can calculate the power flow for an individual step based on Real Time Load, Daily Peak Load, Seasonal Peak Load, or User Specified Load.

To calculate power flow for a switch step:

1. Click on the Actions menu in the Switching Plan Editor.
2. Select the **Power Flow Load Scenario** menu option.
3. Select one of the menu options:
 - Real Time Load
 - Daily Peak Load
 - Seasonal Peak Load
 - User Specified Load

The average current through the switch (either before or after the switching operation) displays in the Interrupt Current column. The number of new overloads caused by the switching operation displays in the Tot Ovlds column. These fields allow you to confirm that the current values are reasonable and no overloads are produced before approving the switching plan.

Viewing the Switch Plan Power Flow Details

If overloads are produced by a switching step, you can open the Switch Plan Power Flow Details window to review the violations and view further information about the power flow solution.

To display the Switch Plan Power Flow Details window, select the Power Flow Details menu option from the Actions menu in the Switching Plan Editor. The Switch Plan Power Flow Details window displays the following fields and buttons:

- The **Step** column contains the switching step number.
- The **Device** column contains the system-defined name for the device being operated.
- The **Oper** column contains the mnemonic code for the device operation (open, close, etc.).
- The **Interrupt Current Ph A Amps** column contains the interrupting current for A phase.
- The **Interrupt Current Ph B Amps** column contains the interrupting current for B phase.

- The **Interrupt Current Ph C Amps** column contains the interrupting current for C phase.
- The **No Voltage Viols** column contains the number of new voltage violations in the analyzed area caused by the completion of the step.
- The **Max Volt Viol/Limit in Volts** column contains the magnitude of the worst-case voltage violation.
- The **No Conductor Viols** column contains the number of new conductor violations in the analyzed area caused by the completion of the step.
- The **Max Conductor Viol/Limit in Amps** contains the magnitude of the worst-case conductor violation.
- The **No Switch Viols** column contains the number of new switch violations in the analyzed area after completion of the step.
- The **No Xfmr Viols** column contains the number of new transformer violations in the analyzed area after completion of the step.
- The **Exit** button exits the Switch Plan Power Flow Details window.

The number of violations and the magnitude of the worst-case violations in the base case (before the switching steps are performed) are shown in the first row.

Displaying Power Flow Voltage Violation Information for a Switch Step

To view information about voltage violations for a switch step, select a step and then select the **Volt Viols** option from the Violations menu. For information about the Power Flow Voltage Violations Summary, see **Power Flow Voltage Violations Summary** on page 16-15.

Displaying Power Flow Conductor Violations Information for a Switch Step

To view information about conductor violations for a switch step, select a step and then select the **Cond. Overloads** option from the Violations menu. For information about the Power Flow Conductor Violations Summary, see **Power Flow Conductor Violations Summary** on page 16-16.

Displaying Power Flow Switch Violations Information for a Switch Step

To view information about the switch violations for a switch step, select a step and then select the **Switch Overloads** option from the Violations menu. For information about the Power Flow Switch Violations Summary, see **Power Flow Switch Violations Summary** on page 16-16.

Displaying Power Flow Transformer Violations for a Switch Step

To view information about the transformer violations for a switch step, select a step and then select the **Transformer Overloads** option from the Violations menu. For information about the Power Flow Transformer Violations Summary, see **Power Flow Transformer Violations Summary** on page 16-16.

Using Power Flow Extensions with Look Ahead

During switching operations, the Look Ahead window allows you to preview the results of switching actions before you perform them. The basic Oracle Utilities Network Management System Operator's Workspace Look Ahead window displays information including customers dropped/picked up, critical customers dropped/picked up, and load kVA.

With Power Flow Extensions, the Look Ahead window also includes information about the power flow solution, including the voltage, angle, and current changes that will result from a switching operation. The number of voltage and conductor violations is displayed at the top of the Look Ahead panel.

After operation -> Voltage Violations: 0 Max 0.00/ 0.00 Branch Violations: 6 Max 11152/ 400

For information on accessing the Look Ahead window, see **Using the Look Ahead Window** on page 1-50.

Look Ahead Results

Power Flow Extensions display additional information in the Look Ahead “results” table, including voltage across the breaker, interrupting current, and the angle across the breaker. In the example below, the power flow information is displayed for each phase.

The Power Flow Extensions window displays the following fields and buttons:

- **Voltage Across Device** displays the voltage across the device after the switching operation for an “open” and before the operation for a “close”.
- **Interrupting Current** displays the current flow that would occur through the device after operation for a “close” or current that would be broken for an “open”.
- **Angle Across Device** displays the phase angle across the device being operated before operation for a “close” and after operation for an “open”.
- The **Voltage Viols** button opens the Power Flow Voltage Violations window.
- The **Cond. Viols** button opens the Power Flow Conductor Violations window.
- The **Switch Viols** button opens the Power Flow Switch Violations window.
- The **Xfmr Viols** button opens the Power Flow Transformer Violations window.
- The **Backfeed Viols** button opens the Power Flow Backfeed Violations window.

For more information on the Look Ahead, see **Using the Look Ahead Window** on page 1-50.

Performing a Switching Operation

After you have reviewed the information, you can apply the switching action by clicking **Open/Close** in the Look Ahead window. You can verify the power flow predictions in the Look Ahead window after the switching action is applied by studying the Power Flow Results window.

Using Suggested Switching

Oracle Utilities Network Management – Suggested Switching helps you generate switching steps for two common scenarios. Switching steps can be generated to restore power to a deenergized device, or the objective can be to deenergize and isolate a device that is currently energized while minimizing the amount of resulting dropped load.

The software produces restoration steps by solving the power flow for each eligible tie point with adjacent feeders, in order to determine the remaining feeder capacity and the overloads after the deenergized section is picked up. Several alternate switching plans may be produced and listed in ranked order. You may then select the desired switching plan and generate it in Oracle Utilities Network Management System – Switching Management. When your objective is to isolate a device, restoration steps are similarly obtained while accounting for the effects of the switching steps required to isolate the desired device.

This section includes the following topics:

- **Using the Tie Point Capacity Window**
- **Using the Load Restoration/Tie Point Capacity Window**
- **Using the Load Restoration Plans Window**
- **Using the Load Restoration Switch Steps Window**
- **Working with Isolate Mode**
- **Substation Suggested Switching**

Using the Tie Point Capacity Window

The Tie Point Capacity window allows the manual query of the capacity to pick up load at a switch that ties two feeders together (a tie point). This enables you to determine which tie points adjacent to a deenergized area have the most capacity for use in picking up lost load. The window displays the available load capacity in amps for each phase that could be added at the tie point without causing voltage or flow violations in the upstream network. If you select another tie point, the window refreshes with its information.

To open the Tie Point Capacity window:

- Double-click a tie switch in the Viewer. The Control Tool opens.
- Click the **Tie Capacity** button in the Control Tool. The Tie Point Capacity window opens.

The Tie Point Capacity window displays the following fields and buttons:

- The **Switch** column contains the switch name.
- The **A** column contains the available load capacity in amps for A phase.
- The **B** column contains the available load capacity in amps for B phase.
- The **C** column contains the available load capacity in amps for C phase.
- The **Exit** button closes the Tie Point Capacity window.

Using the Load Restoration/Tie Point Capacity Window

The Load Restoration/Tie Point Capacity window allows you to adjust the parameters for the suggested switching load restoration scenario. The window displays the sum of loads for the deenergized area, as well as the available adjacent tie switches and their capacities. You may enable/disable these tie switches, set the voltage limits and flow limit type to be used, and adjust the loads in the areas affected by the load restoration switching plan. You can adjust the loads in the affected areas to account for the intended time frame of the switching actions and loss of diversity by:

- Scaling the loads by a specified factor (in %).
- Selecting a load scenario.
- Entering the total load in amps for each phase for the deenergized area.

This section displays the following topics:

- **Using the Load Restoration/Tie Point Capacity Window**
- **Scaling the Load**
- **Selecting a Load Scenario**
- **Selecting Limit Types**
- **Disabling Adjacent Tie Points**
- **Generating Switching Plans**
- **Viewing a Tie Switch in the Viewer**

Using the Load Restoration/Tie Point Capacity Window

To open the Load Restoration/Tie Point Capacity window, complete these steps:

1. In the Viewer, click on the de-energized object to which power is to be restored.
2. The Control Tool opens. Click the Restore Load button. The Load Restoration/Tie Point Capacity window opens.

The Load Restoration/Tie Point Capacity window displays the following fields and buttons:

- **Nom. Load to be Restored (Amps)** displays the current to be picked up by the restoration, by phase.
- **Adj. Load to be Restored (Amps)** displays the user-adjusted current to be picked up by the restoration, by phase.
- **Load Scaling Factor %** displays the scaling factor for the load. The **Scale Loads** button scales the load value by the entered scaling factor.
- The **Load Scenario** drop-down menu enables you to manipulate the feeder loading under consideration of suggested switching by choosing a loading scenario. You may select from Real Time, Daily Peak, Seasonal Peak, User Specified, or a User Specified Date and Time load scenario. The **User Specified** option utilizes the displayed load and tie capacity values adjusted using the 'Scale Loads' button or values which were directly entered in the 'Adj. Load to be Restored (Amps)' are to be used. The **User Specified** Date and Time option utilizes the user entered date and time values and assigns load values from the historical load profile. Note that you must select the user specified load scenario option and click the **Apply** button for the loads/ values you entered to have any effects on subsequent Suggested Switching analysis. Otherwise, the entered values will be disregarded during the switching step generation.
- **Voltage Limits** displays the high and low bus voltage limits (in per unit).
- The **Limit Types** drop-down menus allow you to specify the flow limit type (season and normal/emergency) to be utilized for lines and transformers during the switching steps generation (e.g. spring normal, spring emergency, summer normal, etc.).
- The **Adjacent Tie Points-Capacity (Amps)** table displays all the available adjacent tie switches and their capacities for each phase.
- The **Feeder** column contains the feeder name.
- The **Switch** column contains the switch name.
- The **A** column contains the capacity for A phase.

- The **B** column contains the capacity for B phase.
- The **C** column contains the capacity for C phase.
- **Disable** is a button for enabling/disabling the tie switch.
- The **1 Step Plans** button generates switch plans using a single tie point to restore load to a deenergized area or to transfer load downstream from a device which will be isolated as part of the switch plan. Three single-step switch plans are typically generated and presented in best to worst ranked order in the Load Restoration Plans window.
- The **2 Step Plans** button generates switch plans using two tie points to restore load to a deenergized area or to transfer load downstream from a device which will be isolated as part of the switch plan. Each two-step plan includes a step to open a sectionalizer between the two tie points. Execution of the switching actions in the two-step plan will likely result in radial feeders. Four two-step switch plans are typically generated and presented in best to worst ranked order in the Load Restoration Plans window.
- The **Multi-Step Plans** button generates switch plans using multiple tie points to restore load to a deenergized area or to transfer load downstream from a device which will be isolated as part of the switch plan. Each multiple-step plan includes steps to open sectionalizers between the tie points. Execution of the switching actions in the multi-step plan will likely result in radial feeders. Two multi-step plans are typically generated and presented in best to worst ranked order in the Load Restoration Plans window.
- The **Multi-Tier Plans** button generates switch plans using multiple tie points to restore load to a deenergized area or to transfer load downstream from a device which will be isolated as part of the switch plan. Multi-tier plans will also identify switching actions upon the first-tier affected feeders necessary to balance load on second-tier feeders. Execution of the switching actions in the multi-tier plan will likely result in radial feeders. One multi-tier step switch plan is typically generated and presented to the user in the Load Restoration Plans window.
- The **Generate All Plans** button generates a complete set of switch plans: 1 Step Plans, 2 Step Plans, Multi-Step Plans, and Multi-Tier Plans. Ten switch plans are typically generated and presented to the user in best to worst ranked order in the Load Restoration Plans window.
- The **Apply** button applies the parameters set in the Load Restoration/Tie Point Capacity window.
- The **View** button displays a selected tie switch in the Viewer window.
- The **Exit** button closes the Load Restoration/Tie Point Capacity window.

Scaling the Load

To scale the load, complete these steps:

1. Enter the desired scaling factor (%) in the Load Scaling Factor % field.
2. Click the **Scale Loads** button. The values in the Adj. Load to be Restored (Amps) row of the Load to be Restored (Amps) table changes according to the entered scaling factor.
3. Select **User Specified Load** from the Load Scenario drop-down menu to indicate that you would like to proceed with the user specified load values.
4. Click the **Apply** button. The displayed capacity of the adjacent tie points changes according to the new load values.

Selecting a Load Scenario

To select a load scenario, complete these steps:

1. Select a load scenario from the Load Scenario drop-down menu. If you select the User-Specified option, you must either:

- Enter values in the Adj. Load to be Restored (Amps) row, or
 - Use the Scale Loads functionality
2. If you select the User-Specified Date and Time option, you must enter a date and time in the corresponding fields.
 3. Click the **Apply** button. The displayed values in the Load to be Restored (Amps) table and the Adjacent Tie Points – Capacity (Amps) table update corresponding to the selected load scenario.

Selecting Limit Types

To select a limit type, complete these steps:

1. Select a limit type from the Limit Types drop-menus.
2. Click the **Apply** button. The displayed tie capacities of the adjacent tie points change to reflect the new limits.

Disabling Adjacent Tie Points

To disable or enable an adjacent tie point, complete these steps:

1. Locate the row(s) displaying the tie point(s) you want to disable In the Adjacent Tie Points – Capacity (Amps) table.
2. Click the box in the Disable column in the row of every tie switch you do not want utilized in the generated switching plans.

Generating Switching Plans

To generate suggested switching plans for load restoration, complete these steps:

1. If loads and/or limits that are to be used differ from those displayed when you first open the Load Restoration Load/Tie Point Capacity window, follow the procedures outlined above to make the desired changes.
2. Click the **Generate Steps** button. The Suggested Switching application produces a set of alternate switching plans and displays them in the Load Restoration Plans window.

Viewing a Tie Switch in the Viewer

To view a tie switch in the Viewer, complete these steps:

1. Make sure the Viewer is open.
2. Select a row containing the switch in the Adjacent Tie Points table.
3. Click the **View** button. The Viewer focuses on the tie switch.

Using the Load Restoration Plans Window

The Load Restoration Plans window provides the results of switch step generation in summary form. While generating switching plans, the Suggested Switching function identifies different switching step sequences that will result in the desired load restoration. These switching plans may include splitting the deenergized area in order to allow partial pick up of the deenergized load by different available tie points. The window may generate several ranked alternative plans. The ranking criteria include number of switching operations, available feeder capacity after the switching, and the performance indices of flow and voltage violations generated in the switching process.

This section includes the following topics:

- **Using the Load Restoration Plans Window**
- **Viewing Steps for a Switching Plan**
- **Transferring the Restoration Steps into a New Switching Plan**
- **Transferring Restoration Steps Into An Existing Switching Plan**

Using the Load Restoration Plans Window

To display the Load Restoration Plans window, click one of the Plans buttons (Multi-Step Plans, Multi-Tier Plans, Generate All Plans, etc.) on the Load Restoration/Tie Point Capacity window. The Load Restoration Plans window displays the following fields and buttons:

- The **Plan** column contains the plan number.
- The **No of Steps** column contains the number of steps in the switching plan.
- The **Feeder Capacity** column contains the total feeder available capacity in amps after switching.
- The **Voltage Violations** column contains the number of voltage overloads as a result of the switching action.
- The **Conductor Violations** column contains the number of conductor overloads as a result of the switching action.
- The **Switch Violations** column contains the number of switch overloads as a result of the switching action.
- The **Xfmr Violations** column contains the number of transformer overloads as a result of the switching action.
- The **Show Steps...** button opens the Load Restoration Switch Sheet Steps window to display individual steps in the selected plan.
- The **Generate Switch Plan** button transfers the steps in the selected switching plan to a new switching plan and displays them in the Switch Sheet Editor.
- The **Insert Steps Into Switch Sheet** button inserts the steps of the selected plan into a pre-existing switch plan in the Switch Sheet Editor. The Switch Sheet Editor must already be open with the plan into which the new steps are to be inserted.
- The **Exit** button closes the Load Restoration Plans window.

Viewing Steps for a Switching Plan

To view steps for a switching plan, complete these steps:

1. In the Load Restoration Plans window, select the row containing the switching plan.
2. Click the **Show Steps...** button. The Load Restoration Switch Sheet Steps window opens to display the switching steps for the selected switching plan.

Transferring the Restoration Steps into a New Switching Plan

To transfer the steps in a selected switching plan to a new switching plan, complete these steps:

1. In the Load Restoration Plans window, select the row containing the switching plan.
2. Click the **Generate Switch Plan** button. Suggested Switching transfers the steps from the selected switching plan into a new switching plan, displayed in the Switch Sheet Editor.

You may then complete the switching plan by entering the remaining information and save the plan for later use.

Transferring Restoration Steps Into An Existing Switching Plan

To transfers the steps in a selected switching plan to an existing switching plan, complete these steps:

1. In the Load Restoration Plans window, select the row containing the switching plan.
2. Click the **Insert Steps into Switch Sheet** button. The Switch Sheet Steps Insertion dialog opens.
3. Select where in the active switch plan to insert the new steps:
 - Select **Append** to add the steps to the end of the switching plan
 - Select **Insert** to add the steps after the step selected in the switching plan.

You may then complete the switching plan by entering the remaining information and save the plan for later use.

For this insertion to be successfully completed, the following requirements must be met:

- The Switch Sheet Editor must be open, with a switching plan loaded in which the new steps are to be inserted.
- The Switch Sheet Editor must be in study mode.
- The Switch Sheet Editor must have step recording enabled.

If these conditions are not met, a message box displays.

Using the Load Restoration Switch Steps Window

The Load Restoration Switch Sheet Steps window displays information about individual switching plan steps generated by Suggested Switching.

This section includes the following topics:

- **Using the Load Restoration Switch Steps Window**
- **Viewing Load Restoration Conductor Violations**
- **Viewing Load Restoration Voltage Violations**
- **Viewing Load Restoration Switch Violations**
- **Viewing Load Restoration Transformer Violations**
- **Viewing a Switch Associated with a Switching Step in the Viewer**

Using the Load Restoration Switch Steps Window

To display this window, select one of the generated plan rows in the Load Restoration Plans window and clicking the **Show Steps** button. The Load Restoration Switch Sheet Steps window displays the following fields and buttons:

- The **Switch** column contains the switch name.

- The **Operation** column contains the operation to perform (e.g., open, close).
- The **Per Phase Avg Amps** column contains the average current connected or broken in the switch operation.
- The **Voltage Violations** column contains the number of voltage overloads as a result of the switching action.
- The **Conductor Violations** column contains the number of conductor overloads as a result of the switching action.
- The **Switch Violations** column contains the number of switch overloads as a result of the switching action.
- The **Transformer Violations** column contains the number of transformer overloads as a result of the switching action.
- The **Load Disconnected Total Amps** column contains the total load disconnected after step in Amps.
- The **Conductor Violations...** button opens the Conductor Violations list to display conductor violations for a selected step.
- The **Voltage Violations...** button opens the Voltage Violations list to display voltage violations for a selected step.
- The **Switch Violations...** button opens the Switch Violations list to display switch violations for a selected step.
- The **Transformer Violations...** button opens the Transformer Violations list to display transformer violations for a selected step.
- The **Backfeed Violations...** button opens the Backfeed Violations list to display backfeed violations for a selected step.
- The **Generate Switch Plan** button transfers the steps in the switching plan to a new switching plan, which opens in the Switch Sheet Editor. This process is the same as described in the **Transferring the Restoration Steps into a New Switching Plan** on page 16-26 section, with one exception. When following this process in the Load Restoration Switch Steps window, you do not need to select a row as indicated in the first step.
- The **View** button views the selected switch in the switching plan in the Viewer window.
- The **Insert Steps Into Switch Sheet** button triggers the functionality described for the **Using the Load Restoration Plans Window** on page 16-25 in this case as well.
- The **Exit** button closes the Load Restoration Switch Steps window.

Viewing Load Restoration Conductor Violations

The Power Flow Conductor Violations window displays the information about conductor violations caused by the selected step.

To display the Power Flow Conductor Violations window, select a step in the Load Restoration Switch Sheet Steps window and click the **Conductor Violations...** button.

For more information about the Power Flow Conductor Violations Summary, see **Viewing Load Restoration Conductor Violations** on page 16-27.

Viewing Load Restoration Voltage Violations

The Power Flow Voltage Violations window displays the information about the voltage violations caused by the selected step.

To display the Power Flow Voltage Violations window by selecting a step in the Load Restoration Switch Sheet Steps window and pressing the **Voltage Violations...** button.

For more information about the Power Flow Voltage Violations Summary, see **Viewing Load Restoration Voltage Violations** on page 16-27.

Viewing Load Restoration Switch Violations

The Power Flow Switch Violations window displays the information about the switch violations caused by the selected step.

To open the Power Flow Switch Violations window, select a step in the Load Restoration Switch Sheet Steps window and click the **Switch Violations...** button.

For more information about the Power Flow Switch Violations Summary, see **Power Flow Switch Violations Summary** on page 16-16.

Viewing Load Restoration Transformer Violations

The Power Flow Transformer Violations window displays the information about transformer violations caused by the selected step. You can access the Power Flow Transformer Violations window by selecting a step in the Load Restoration Switch Sheet Steps window and clicking the **Transformer Violations...** button. For more information about the Power Flow Transformer Violations Summary, see **Viewing Load Restoration Transformer Violations** on page 16-28

Viewing a Switch Associated with a Switching Step in the Viewer

To view a switch in the switching plan, complete these steps

- Make sure the Viewer is open.
- In the Load Restoration Switch Steps window, select the row containing the step.
- Click the **View** button. The Viewer focuses on the switch.

Working with Isolate Mode

Suggested Switching can also determine the switching steps necessary to de-energize and isolate a device that is currently energized, while minimizing the amount of resulting dropped load. As with Load Restoration, steps for Isolation and Load Restoration are generated from the Load Restoration/Tie Point Capacity window. However, you click the **Isolate and Restore Load** button on the Control Tool instead of the **Restore Load** button.

When you click the **Isolate and Restore Load** button, the Load Restoration/Tie Point Capacity window opens with an additional section at the top of the window displaying the isolation steps. The table displays each switch involved in isolating the selected device and its associated operation (i.e., open/ close).

You can see individual switches in the Viewer by selecting the switch's row and pressing the **View** button.

Viewing the Restoration Switch Steps Window in Isolate Mode

Similar to the standard Load Restoration/Tie Point Capacity window, pressing one of the generate plans buttons opens the Load Restoration Switch Steps window (see **Using the Load Restoration Switch Steps Window** on page 16-26). However, in isolation mode, the restoration steps are shown first in the switching sequence, with the isolate steps shown in green.

Substation Suggested Switching

In emergencies such as when a substation becomes flooded as the result of a major storm event, is subject to damage due to a fire, or after a power transformer failure or overload, it is necessary to transfer all or a significant number of feeders off a particular substation bus on short notice. Continued load growth, aging infrastructure and reductions in distribution capital expenditure budgets have significantly reduced spare capacity that is available on adjacent feeders, making this task more and more complex. Further complicating the problem is the aging work force, where the expertise necessary to overcome the problem is focused. There is thus a need to transfer operational expertise to other people who could not perform this kind of task based upon experience and instinct.

Substation Suggested Switching is a real-time application that suggests complex switching plans to transfer feeder load from a substation bus and isolate the substation LTC transformer or the substation bus.

You can select a single feeder or a set of feeders for sectionalize and transfer.

This section includes the following topics:

- **Using the Substation Suggested Switching Window**
- **Transferring Feeder Load**

Using the Substation Suggested Switching Window

The Substation Suggested Switching window allows user to choose switching feeders and suggested switching actions.

To display the Substation Suggested Switching window, complete these steps:

1. Open the Environment Manager Misc. Toolbox by selecting the Misc toolbox icon.
2. Select the **Substation Suggested Switching** button in the Misc. Tools window.

The Substation Suggested Switching window contains the following information:

- **List boxes** - The first list box displays all the feeders that the user picked up from the Viewer. The second one displays the feeders that will be used in suggested switching.
- The **Left Arrow** button allows user to remove the feeders from the Selected Devices list. In order to remove a feeder from the Selected Devices list, the user needs selecting the feeder from the right list box first, then click on the left arrow which is activated only if a device is selected from Selected Devices list.
- The **Right arrow** buttons allows user to add the feeders into the Selected Devices list. In order to add a feeder into the Selected Devices list, the user needs selecting the feeder from the left list box first, then click on the right arrow which is activated only if a device is selected from Available Devices list.
- The **Select Devices** button allows the user to be able to pick up substation feeders from the Viewer. After the button was clicked, the feeders that user selected from the Viewer will be listed in the Available Devices box.
- The **Stop Selecting** button disallows the user to select feeders from the Viewer. After the button was clicked, the devices that user selected from the Viewer will not be listed in the Available Devices box.
- The **Clear Device Lists** button clears all devices in the Available Devices box and Selected Devices box.
- The **Restore Load** button will trigger suggested switching function to restore the loads for the feeders that listed in the selected Devices box.
- The **Isolate and Restore** button will trigger suggested switching function to isolate and restore the loads for the feeders that listed in the selected Devices box.

- The **Exit** button exits the **Substation Suggested Switching** Window.

Transferring Feeder Load

You can transfer a designated quantity of load or the entire feeder load to one or more adjacent feeders. This is typically done to relieve an overload on a specific feeder.

The system generates a set of candidate switch plans that can be used to transfer the load to adjacent feeder(s). Candidate switching plans are ranked based on their ability to maximize capacity while minimizing the number of switching actions and the magnitude of overloads.

The user can view the steps in each switching plan. The user can also insert steps from a candidate plan into a new or an existing switching plan.

To transfer feeder load, complete these steps:

1. From the **System Feeder Loading Summary**, select the feeder from which you want to transfer load and click the Unload Feeder button. The Feeder Unload dialog is displayed.
2. Enter the desired amps to be unloaded and click **OK**. The Feeder Unloading Plans window displays a set of switching plans. Refer to the following section for instructions on using this window.

Using the Feeder Unloading Plans Window

The Feeder Unloading Plans window provides the results of switch step generation in summary form. While generating switching plans, the Suggested Switching function identifies different switching step sequences that will result in the desired load transfer. The window may generate several ranked alternative plans. The list is sorted in descending order by plan performance index, which is derived from the number of switching steps in the plan, the weighted sum of the overflows in the switching sequence, and the total capacity margin on the feeders to which the load will be transferred.

The Feeder Unloading Plans window displays the following fields and buttons:

- The **Plan** column contains the plan number.
- The **No of Steps** column contains the number of steps in the switching plan.
- The **Feeder Capacity** column contains the total feeder available capacity in amps after the switching action.
- The **Load Transferred** column contains the transferred load in amps.
- The **No of Overloads** column contains the number of overloads after the switching action.
- The **Plan PI** column contains the performance index for the selected plan.
- The **Overload PI** column contains the overload performance index for the selected plan. It is the weighted sum of the overflows in the switching sequence.
- The **Show Steps...** button opens the Feeder Unloading Switch Steps window to display individual steps in the selected plan.
- The **Generate Switch Plan** button transfers the steps in the selected switching plan to a new switching plan and displays them in the Switch Sheet Editor. See **Generating a New Switch Plan Containing the Feeder Unloading Steps** on page 16-31.
- The **Insert Steps Into Switch Sheet** button inserts the steps of the selected plan into a pre-existing switch plan in the Switch Sheet Editor. The Switch Sheet Editor must already be open with the plan into which the new steps are to be inserted. See **Inserting Feeder Unloading Steps into an Existing Switching Plan** on page 16-32.
- The Exit button closes the Feeder Unloading Plans window.

Viewing Steps for a Switching Plan

You can view the steps for any switching plan listed on the Feeder Unloading Plans window (see the previous section). To view the steps, select the row containing the switching plan and click the **Show Steps...** button. The Feeder Unloading Switch Steps window opens to display the switching steps for the selected switching plan. This window displays information about individual switching plan steps generated by Suggested Switching.

The Feeder Unloading Switch Steps window displays the following fields and buttons:

- The **Switch** column contains the switch name.
- The **Operation** column contains the operation to perform (e.g., open, close).
- The **Per Phase Avg Amps** column contains the average current connected or broken in the switch operation.
- The **Feeder** column contains the upstream feeder identification.
- The **Feeder Amps Before** column contains the currents flowing through the upstream feeder before the switching action.
- The **Feeder Amps After** column contains the currents flowing through the upstream feeder after the switching action.
- The **Feeder Limit** column contains the amp limits of the upstream feeder.
- The **Conductor Violations...** button opens the Conductor Violations list to display conductor violations for a selected step. (See **Displaying Power Flow Conductor Violations Information for a Switch Step** on page 16-19.)
- The **Generate Switch Plan** button inserts the steps into a new switching plan. (See **Generating a New Switch Plan Containing the Feeder Unloading Steps** on page 16-31.)
- The **View** button views the selected switch in the switching plan in the Viewer window.
- The **Insert Steps Into Switch Sheet** button inserts the steps into a pre-existing switch plan. The plan must already be open in the Switch Sheet Editor. (See **Inserting Feeder Unloading Steps into an Existing Switching Plan** on page 16-32.)
- The **Exit** button closes the Feeder Unloading Switch Steps window.

Generating a New Switch Plan Containing the Feeder Unloading Steps

You can insert steps from either the Feeder Unloading Plans or the Feeder Unloading Switch Steps window into a new switching plan.

Note: Before you can insert steps into an existing plan, the plan must already be open in the Switch Sheet Editor. The Switch Sheet Editor must be in study mode and recording must be enabled.

From the Feeder Unloading Plans window:

1. Select the row containing the switching plan and click the **Generate Switch Plan** button. Suggested Switching transfers the steps from the selected switching plan into a new switching plan, displayed in the Switch Sheet Editor.
2. Complete the switching plan by entering the remaining information and save the plan for later use.

From the Feeder Unloading Switch Steps window:

1. Click the **Generate Switch Plan** button. Suggested Switching transfers the steps into a new switching plan, displayed in the Switch Sheet Editor.
2. Complete the switching plan by entering the remaining information and save the plan for later use.

Inserting Feeder Unloading Steps into an Existing Switching Plan

You can insert steps from either the Feeder Unloading Plans or the Feeder Unloading Switch Steps window into an existing switching plan:

From the Feeder Unloading Plans window:

1. Select the row containing the switching plan and click the **Insert Steps into Switch Sheet** button. The Switch Sheet Steps Insertion dialog opens.
2. Select where in the active switch plan to insert the new steps: Select **Append** to add the steps to the end of the switching plan, or select **Insert** to add the steps after the step selected in the switching plan.
3. Complete the switching plan by entering the remaining information and save the plan for later use.

From the Feeder Unloading Switch Steps window:

1. Click the **Insert Steps into Switch Sheet** button. The Switch Sheet Steps Insertion dialog opens.
2. Select where in the active switch plan to insert the new steps: Select **Append** to add the steps to the end of the switching plan, or select **Insert** to add the steps after the step selected in the switching plan.
3. Complete the switching plan by entering the remaining information and save the plan for later use.

Using Volt/VAr Optimization

This section includes the following topics:

- **Overview**
- **Volt/VAr Optimization Procedures**

Overview

Volt/VAr Optimization interactively generates a set of optimal substation transformer tap positions and capacitor bank statuses to minimize system losses as system load changes.

The Volt/VAr Optimization analysis uses the Optimal Power Flow (OPF) engine. Substation transformer tap positions and capacitor bank statuses are used as the variable OPF controls. Overloads on conductors, switches and transformers, and voltage violations are used as the OPF constraints. Thus, Volt/VAr Optimization minimizes the power losses while maintaining power quality.

An operator manually triggers the Volt/VAr Optimization analysis. Analysis results are presented to the operator in the OPF Control Plans and OPF Control Moves windows. The operator is able to review optimization plans in the form of substation transformer tap position and capacitor bank status changes. The operator is able to generate a Switching Management plan from each optimization plan.

Volt/VAr Optimization also allows the operator to specify a particular loading scenario against which to perform the Volt/VAr analysis. Based on the selected load scenario, Volt/VAr optimization uses the real-time load values or appropriately uses load values from the historic load profile for all load points in the analysis area. The user-selectable load scenarios are:

- Real-time
- Daily peak
- Seasonal peak
- User scaled load
- User specified time

Volt/VAr Optimization Procedures

This section includes the following topics:

- **Using the Volt/VAr Optimization Window**
- **Using the Feeder Loading Summary Window**
- **Using the OPF Options**
- **Using the OPF Control Plans Window**
- **Using the OPF Control Moves window**
- **Using the OPF Control Plan Feeder Summary**

Using the Volt/VAr Optimization Window

To open the Volt/VAr Optimization window, select the **Volt/VAr Optimization** button in the Misc. Tools toolbox in the Environment Manager.

The Volt/VAr Optimization window displays the following fields and buttons:

- **Start Date/Time** is a user-entered field used to determine load values in the load scenarios
- **End Date/Time** is a user-entered field used to determine load values in the load scenarios

- **Scale Factor** is a user-entered field used to determine load values in the load scenarios
- **Control Zone** is a hierarchical selection based upon the configured control zones. It allows the operator to select a control zone as the area of analysis for Volt/VAr optimization
- The **Options** button opens the OPF Options Window.
- The **Feeder Summary** button invokes the Feeder Loading Summary window
- The **OK** button starts the Volt/VAr optimization analysis and triggers the OPF Control Plans window.
- The **Cancel** button closes the Volt/VAr Optimization window.

Using the Feeder Loading Summary Window

The Feeder Loading Summary window displays summary information on the feeder loading for the control zone area selected in the Volt/VAr Optimization window.

To display the Feeder Loading Summary window, click the **Feeder Summary** button from the Volt/VAr Optimization window.

The Feeder Loading Summary window displays the following fields and buttons:

- **Feeder** column displays the name of the feeder in the selected control zone
- **kW** column displays the solved 3-ph active power at feeder head
- **kVAR** column displays the solved 3-ph reactive power at feeder head
- **Amps** column displays the solved average line current at feeder head
- **Min Volts** column displays the value of the minimum voltage occurring on the feeder
- **Load (kW)** column displays the solved 3-ph load on the feeder
- **Losses (kW)** column displays the solved 3-ph losses on the feeder
- The **Exit** button closes the Feeder Loading Summary window.

Using the OPF Options

Use the Optimal Power Flow Options window to set the options for solving the optimal power flow executed as part of Volt/VAr Optimization.

To display the Optimal Power Flow Options window, select the **Options** button from the Volt/VAr Optimization window. This window has a tabbed format with options grouped together under different tabs, as described in the following sections:

- **Scenario Tab**
- **Controls Tab**
- **Constraints Tab**
- **Conditions Tab**
- **Parameters Tab**
- **Weights Tab**
- **Archive Tab**

Scenario Tab

The **Scenario** tab allows you to set OPF scenario options.

- The **Scenario Type** drop-down menu listing allows selection of OPF objective function. Default objective function for Volt/VAr optimization is Loss Minimization

- The **Load Scenario Type** drop-down menu listing allows selection of the load scenario used in the Volt/VAr optimization analysis.
- ‘Real Time Load’ is the default load scenario. Loads correspond to the real-time solved values.
- ‘Daily Peak Load’: Loads correspond to the system load peak of the current day type.
- ‘Seasonal Peak Load’: Loads correspond to the system load peak of the current season.
- ‘Spec Scale Factor’: Loads correspond to their real-time values scaled by a factor entered by the user in the ‘Scale Factor’ text box
- ‘Spec Date Time’: Loads correspond to values in the historical load profile for the date-time corresponding to the value entered by the user in the ‘Start Date/Time’ text box
- ‘Spec Interval’: Loads correspond to the system load peak from the historical load profile in the user specified time interval between the date-times entered by the user in the ‘Start Date/Time’ and ‘End Date/Time’ text boxes.

Controls Tab

The **Controls** tab allows you to select OPF controls to be used in the Volt/VAr optimization analysis.

- **Sub. Voltage** enables use of substation transformer tap controls
- **Xfmr Tap Controls** enables use of non-substation transformer tap controls
- **Cap Switch** enables use of switchable capacitor controls

Constraints Tab

The **Constraints** tab allows you to select OPF constraints to be used in the Volt/VAr optimization analysis.

- **Line Limits** enables use of conductor/cable overload limits as OPF constraints
- **Switch Limits** enables use of switch overload limits as OPF constraints
- **Xfmr Limits** enables use of transformer overload limits as OPF constraints
- **Normal Voltage Limits** enables use of user-entered normal High and Low voltage limits as OPF constraints
- **Emergency Voltage Limits** enables use of user-entered emergency High and Low voltage limits as OPF constraints

Conditions Tab

The **Conditions** tab allows you to set the rules to be used by the OPF algorithm in the Volt/VAr optimization analysis.

- **Allow Loops Temp** enables user to allow/disallow formation of loops during intermediate switching operations
- **Allow Loops Final** enables user to allow/disallow formation of loops during the final switching operation of an OPF control plan
- **Drop Load Temp** enables user to allow/disallow deenergized load during intermediate switching steps
- **Drop Load Final** enables user to allow/disallow deenergized load during the final switching steps
- **Allow Single Phase Switching** enables user to allow/disallow single phase switching actions
- **Restore Deenergized Loads** enables user to allow/disallow OPF control action priority to restoration of deenergized loads

Parameters Tab

The **Parameters** tab allows you to set some more rules to be used by the OPF algorithm in the Volt/VAr optimization analysis.

- **Max. Switch Attempts** enables user to limit the total number of switching operations
- **Switch Per Plan** enables user to limit the number of switching operations per OPF control plan
- **Plans per Depth** enables user to set the maximum number of levels of plans built on top of existing plans
- **Adjacent Feeders** enables user to set the maximum number of tiers in the optimization island
- **Opt Const Damping** enables user to set the damping constant that determines the proximity of the OPF solution to feasibility.

Weights Tab

The **Weights** tab allows you to set the relative weightings for each performance index category (optimization constraints and control cost curves). The relative weightings determine the user's desired ranking of OPF control plans

Archive Tab

The **Archive** tab allows you to set the number of OPF control plans to be archived

Using the OPF Control Plans Window

The OPF Control Plans window displays control plan information on the OPF generated plan for executed Volt/VAr Optimization over the selected control zone area. The OPF Control Plans window is created after the operator starts Volt/VAr Optimization via the **OK** button in the Volt/VAr Optimization window.

The OPF Control Plans window displays the following fields and buttons:

- **Plan** column displays the serial number of the OPF control plan
- **Number of Moves** column displays the number of OPF control moves in the given plan
- **State** column displays the feasibility of the OPF plan
- **Total Performance Index (PI)** column displays the overall performance index of a given OPF plan based on the weighted sum of individual performance index categories (constraint violations, control cost curves)
- **Loss Reduction** column displays the 3-ph kW reduction in losses for the optimization area
- **Lost Load Temporary Performance Index** column displays sum of the lost load in the intermediate steps of given control plan
- **Lost Load Final Performance Index** column displays sum of the lost load at the end of the given control plan
- **Voltage Violations Initial/Final** column displays the number of voltage violations during intermediate steps and after the control plan implementation
- **Flow Violations Initial/Final** column displays the number of flow violations during intermediate steps and after the control plan implementation
- **Minimum Voltage Location** column displays the device location of minimum voltage in the selected control area
- **Minimum Voltage** column displays the value of the minimum voltage in the selected control area
- **Realized** column displays whether the control plan is saved for implementation and archival

- The **Show Steps** button invokes the OPF Control Moves window that displays the individual control steps comprising the given OPF plan.
- The **Generate Switch Plan** button invokes the switch plan editor initialized with the OPF control action steps for the selected OPF Control plan
- The **Violation** button invokes the OPF Violations window
- The **Feeder Summary** button invokes the OPF Control Plan Feeder Summary
- The **Exit** button closes the OPF Control Plans window.

Using the OPF Control Moves window

The OPF Control Moves window displays information on the individual control steps of a particular OPF generated plan for Volt/VAr optimization. The OPF Control Moves window is created after the operator clicks on the Show Steps button in the OPF Control Plans window.

The OPF Control Moves window displays the following fields and buttons:

- **Step** column displays serial number of the OPF control step
- **Control Type** column displays the type of the OPF control in the step
- **Control Zone** column displays the zone of the selected area
- **Control Name** column displays the name of the device used in the control action
- **Init Value** column displays the initial control status / parameter value for the control
- **Final Value** column displays the final control status / parameter value for the control
- The **View** button focuses on the selected control device in the Viewer
- The **Realize** button ensures that the control plan move is archived. This feature is disabled in the Volt/VAr optimization functionality
- The **Exit** button closes the OPF Control Moves window

Using the OPF Control Plan Feeder Summary

The OPF Control Plan Feeder Summary window displays control plan information pertaining to 3-ph feeder head kW, kVAr, average current, minimum voltage, load served and losses for both pre- and post-plan conditions. The OPF Control Plan Feeder Summary window is created after the operator clicks on the Feeder Summary button in the OPF Control Plans window.

The OPF Control Plan Feeder Summary window displays the following fields and buttons:

- **Type** text box displays the electrical parameter whose info is displayed below
- **Zone** column displays the name of the control area under consideration
- **Substation** column displays the name of the substation under consideration
- **Feeder** column displays the name of the feeder under consideration
- **Initial Value** column displays the initial pre-plan value for the selected feeder parameter (Type)
- **Final Value** column displays the final post-plan value for the selected feeder parameter (Type)
- **Change** column displays the difference between the pre-plan and post-plan values for the selected feeder parameter (Type)
- The **Feeder kW, Feeder kVAR, Amps, Min Volts, Load Served, Losses** buttons allow the user to select the electrical parameter for display of summary info
- The **Exit** button closes the OPF Control Plan Feeder Summary window.

Chapter 17

Feeder Load Management

This chapter covers the following topics:

- **Overview**
- **Logging in to the Web DMS Environment**
- **Using the Feeder Load Summary Window**
- **Feeder Load Management**
- **Data Source and Data Quality**

Overview

Feeder Load Management (FLM) allows you to manage energy delivery in the electric distribution system and identify problem areas. Feeder Load Management monitors the vital signs of the distribution system and identifies areas of concern so that the distribution operator is forewarned and can efficiently focus attention where it is most needed. It allows for more rapid correction of existing problems and enables possibilities for problem avoidance, leading to both improved reliability and energy delivery performance.

Feeder Load Management is cyclically executed and automatically triggered by pertinent changes in the electric distribution system, such as increased demand or switch status changes. Feeder Load Management provides dynamically updated views of closest-in-time alarms, peak loads, and present loads of all the feeders. Feeder Load Management directs users to those feeders where capacity margins and/or device limits are at risk or violated.

You can view up-to-date load summaries, as well as Device Violations, Feeder Load Details, Tie Points Capacity Overview, Transformers, Capacitor Banks, and Equivalent Sources Details. You can initiate Feeder Load Management calculations in Study Mode with different load scale factors and topology to predict selected feeders performance for different switching scenarios.

Logging in to the Web DMS Environment

To use Feeder Load Management, you must log into both Operator's Workspace and the Web DMS environment using the same user ID.

Note: Check with your system administrator to verify that your system has been configured to support Feeder Load Management and to obtain any special login instructions.

You can log in to the Operator's Workspace and the Web DMS environment in either order. (It does not matter which one you start first.) For instructions on logging into Operator's workspace, see **Logging In** on page 1-7.

To log in to the Web DMS environment:

1. Depending on how your system was installed, do one of the following:
 - Click the **Web DMS** icon found under the appropriate program group in your Windows Start Menu.
 - Double-click the **Web DMS** icon on your desktop.
 - Open a web browser and type the Web DMS URL in the browser's Address field.The Web DMS Login window displays.
2. Enter the user name you used to log into the Operator's Workspace application.
3. Enter the password.
4. Click the **Validate** button. The bottom portion of the Web DMS Login window sensitizes.
5. Select the appropriate User Type from the drop-down menu.
6. Click the **Login** button. Once you have successfully logged on, the Web DMS window is displayed. This window displays the connection status, and two buttons:
 - The **Feeder Load Summary** button opens the Feeder Load Summary window, which is described in the following section.
 - The **Exit** button closes the Web DMS window.

Using the Feeder Load Summary Window

Use the Feeder Load Summary window to monitor network feeders' performance. This window is dynamically updated to show the closest-in-time alarms, peak loads and present loads of all the feeders within the user's subscribed control zone authority. If the user subscribes to a single substation, Feeder Load Summary displays only feeders in that substation. If the user subscribes to the entire system, Feeder Load Summary displays all feeders in the entire system.

To display the Feeder Load Summary window, click the **Feeder Load Summary** button on the Web DMS window. The following sections describe how to use the Feeder Load Summary window:

- **Menu Options**
- **Toolbar**
- **Status Bar**
- **Feeder Load Summary Panels**
 - **Feeder Load Summary Table**
 - **Scale Factors Table**
- **Filtering the List**
- **Sorting the List**

Related Topics:

- **Logging in to the Web DMS Environment**
- **Feeder Load Management**

Menu Options

The Feeder Load Summary window provides the following pull-down menu options:

File menu

- Select **Print** to print the Feeder Load Table's content.
- Select **Exit** to close the window:

View Menu

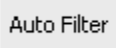
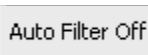
- Select the view you want to use: Earliest Alarms, Peak Loads, or Present Loads.

Filter Menu

- Select the filter to use: All (all the feeders' conditions), Violations Only, or Violations and Warnings.

Toolbar

The Feeder Load Summary window provides the following toolbar options:

-  Earliest Alarms  Peak Loads  Present Loads Click the name of the view you want to use. The currently displayed view is grayed.
-  Click this to focus the Viewer on a selected feeder. This button is disabled until you select a row(s) in the Feeder Load Summary table. If multiple rows are selected, the Viewer will focus on the first selected row's feeder.
-  Click this to open/update the Feeder Load Management window. This button is disabled until you select a row(s) in the Feeder Load Summary table. If multiple rows are selected, the Feeder Load Management window displays the details for multiple feeders.
-  Click this to print the Feeder Load Summary table.
-  Click this to toggle on/off the balloon dialog. When this button is toggled on and a Summary row is selected, a balloon dialog displays the selected feeder head's data source and data quality information. See **Data Source and Data Quality** on page 17-16 for more details.
-  Click this to close the Feeder Load Summary window.
-  Click this button to show only rows that match the selected cell. This button is disabled until you select a row in the Feeder Load Summary table. Once an auto filter is applied, this button is replaced by the Auto Filter Off button.
-  Click this button to remove a previously selected auto filter.

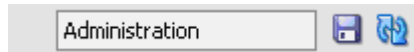
The toolbar also displays the current summary view name and the names of applied filters and sorts, as shown below:

Filter: All Sort: Date/Time (+)

Status Bar

The Feeder Load Summary window status bar displays the user type: Administration, Full Operations, or View Only.

Only Administration users will see buttons on the status bar, as shown below:



Use the  button to save changed scale factors for future Feeder Load Management calculations.

Use the  button to start a new Feeder Load Management calculation immediately.

Feeder Load Summary Panels

The Feeder Load Summary window is divided into two sections or panels, and each panel displays a table:

- **Feeder Load Summary Table**
- **Scale Factors Table**

Feeder Load Summary Table

The Feeder Load Summary table shows a list of feeders. By default, the Earliest Alarms view is displayed. Other available views are Peak Loads and Present Loads. To switch between views, click the appropriate toolbar button or select the appropriate option from the View menu.

The Feeder Load Management Summary table displays the following fields and buttons.

- **Substation** – the substation name
- **Feeder** – the feeder name. This column displays a yellow background for feeders with abnormal data quality or/and data source for any of the phases. See **Data Source and Data Quality** on page 17-16 for more details.
- **Phase** – phase with the maximum capacity utilization
- **Util %** – the maximum capacity utilization in percents
- **Amps** – electrical current on the phase with the maximum capacity utilization
- **KW** – active power on the phase with the maximum capacity utilization
- **kVAR** – reactive power on the phase with the maximum capacity utilization
- **kV** – voltage on the phase with the maximum capacity utilization
- **Feeder Condition** – violation or warning (if any) on a feeder. When multiple violations/warnings occur on a feeder, this column shows the highest-level violation. Traffic signal coloring is used for this column: Red = Violations Exist, Yellow = Warnings Exist, Green = No Warnings/Violations Exist. This column's values and coloring are configurable by changing the FLMSummary.xml file. See **Feeder/Device Conditions** on page B-4 for a list of feeder/device condition names and colors ranked from the worst problem to normal condition.
- **Date/Time** – date and time for the displayed feeder condition
- **Score** – EDA score of the feeder at the time of the condition
- **# Alarms** – total number of alarms on the feeder at the time

Scale Factors Table

This table displays load week days' scale factors for future Feeder Load Management forecasts calculations. The pink background highlights the current day's scale factor. (Only administration users can edit the scale factors in this table.) This table is updated every time the Feeder Load Summary table is updated.

Filtering the List

Two types of filtering are available:

- **Dynamic filtering:** Use the edit boxes at the top of each column to filter the list. Type all or part of the text you want to filter by. For example, to see only Over Voltage conditions, type "Over" in the Feeder Condition edit box. The list is filtered to display only sheets where the Feeder Condition column contains the characters "Over." You can combine filter criteria by typing values for more than one column. As you type in each edit box, the list is filtered immediately based on entries in all boxes.
- **Cell filtering:** You can also filter the list by the value of any cell. Right-click the cell by which you want to filter the list and select **Auto Filter** from the pop-up menu. The list is refreshed to display only rows where the value matches the selected cell. Click the option again to turn off cell filtering.

Sorting the List

Click on a column header to resort the list. For example, to sort in order by Feeder Condition, click the Feeder Condition column header. Click once to sort in ascending order; click again to sort in descending order. By default, the Earliest Alarms view's rows are sorted by time in ascending order. The Peak Loads and Present Loads view's rows are sorted by score in descending order.

Feeder Load Management

The Feeder Load Management window provides detailed information about feeder loads, device violations and warnings, tie points capacity, and regulation devices. It supports Real-Time and Study Mode.

This section includes the following topics:

- **Accessing the Feeder Load Management Window**
- **Using the Feeder Load Management Window**
- **Requesting a New Feeder Load Management Calculation**

Related Topics:

- **Logging in to the Web DMS Environment**
- **Using the Feeder Load Summary Window**

Accessing the Feeder Load Management Window

You can open the Feeder Load Management window from the Viewer or from the Feeder Load Summary window.

Note: Feeder Load Management is available only in the Web DMS environment. See **Logging in to the Web DMS Environment** on page 17-1 for details.

From the Viewer

To open the Feeder Load Management window from the Viewer, click the  button on the Viewer toolbar. The Feeder Load Management window opens for the device. The Feeder Load Management mode is defined by the Viewer's mode.

From the Feeder Load Summary Window

From the Feeder Load Summary window, you can open the Feeder Load Management window for a single feeder or for multiple feeders.

- To open the Feeder Load Management window for a single feeder, double-click the corresponding row in the Feeder Load Summary table or right-click the row and select **Feeder Load Mgmt Tool** or **Feeder Load Mgmt Tool 2** from the pop-up menu.
- To open the window for multiple feeders, select the corresponding rows in the Feeder Load Summary Table and click the  button on the toolbar.

The Feeder Load Management window opens in Real-Time mode. Once the window is open, you can switch modes by pressing the corresponding button on the toolbar.

Note: The system allows you to have two open Feeder Load Management Tools at any time. Multiple Feeder Load Management Tools can be used to compare the details for different feeders.

Using the Feeder Load Management Window

Use the Feeder Load Management window to view detailed information about feeder loads, device violations and warnings, tie points capacity, and regulation devices. You can initiate Feeder Load Management calculations in Study Mode with different load scale factors and topology to predict selected feeders performance for different switching scenarios.

The Feeder Load Management window displays a pull-down menu, toolbar, status bar, and five sections or panes. It has two modes: Study and Real-Time. Each of these components is described in the sections that follow:

- **Menu Options**
- **Toolbar**
- **Status Bar**
- **Using Real-Time and Study Mode**
- **Feeder Load Management Window Panels**
- **Study Session Parameters**
- **Requesting a New Feeder Load Management Calculation**
- **Data Source and Data Quality**

Related Topics:

- **Overview**
- **Logging in to the Web DMS Environment**
- **Accessing the Feeder Load Management Window**
- **Using the Feeder Load Summary Window**

Menu Options

The Feeder Load Management window provides the following pull-down menu options:

File menu

- Select **Exit** to close the window:

Filter Menu

Select the filter to use for limiting the feeders displayed in the Feeder Load Overview table. Available filters are:

- **Present Measurements** - Displays only data for the present time.
- **Hourly Forecasts** - Displays only forecasts for the next 24 hours.
- **Daily Peaks** - Displays only daily peak forecasts for the next 6 days.

Actions Menu

- Select **Real Time** to switch to Real-Time Mode. (This option is grayed if Real-Time Mode is active.)
- Select **Study Mode** to switch to Study Mode. (This option is grayed if Study Mode is active.)
- Select **Study Session Parameters** to configure settings for Study Mode. (This option is grayed if Real-Time Mode is active.) See **Study Session Parameters** on page 17-15.

Toolbar

The Feeder Load Management window provides the following toolbar options:

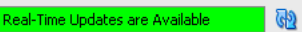
- Click the name of the view you want to use. The currently displayed view is grayed.
- Click  to close the Feeder Load Management window.
- Click  to switch to Study Mode. (This option is grayed if Study Mode is active.)
- Click  to switch to Real-Time Mode. (This option is grayed if Real-Time Mode is active.)
- Click  to configure settings for Study Mode. (This button is grayed if Real-Time Mode is active.) See **Study Session Parameters** on page 17-15.

Status Bar

The status bar displays at the bottom of the Feeder Load Management window. It provides the following information:

 **Real-Time Mode** - Indicates that the tool is currently in Real-Time Mode.

 **Study Mode** - Indicates that the tool is currently in Study Mode.

 **Real-Time Updates are Available**  - Indicates that real-time updates are available to currently displayed data. To refresh all currently displayed real-time data on the Feeder Load Management window, click the  button. Note that this button is disabled when there are no updates available or when the Feeder Load Management Tool is in Study Mode.

 **Data Updated**  - Indicates that the data displayed in the tool is current.

Using Real-Time and Study Mode

If you start or update the Feeder Load Management Tool from the Viewer, the tool's mode is defined by the Viewer's mode.

If you start or update the tool from the Feeder Load Summary window, the tool opens in Real-Time mode. Once the tool is open, you can switch modes by pressing the corresponding button on the toolbar or selecting the appropriate menu option.

When you start the tool in Study Mode or switch from Real-Time to Study Mode inside the tool, the Study Sessions Parameters dialog prompts you to select one of the following options:

- Load previously calculated study session data (if any)
- Request a new Feeder Load Management calculation for the current study session's topology

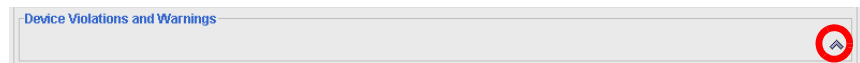
See **Study Session Parameters** on page 17-15 for more information about this dialog.

After you make your selection, the corresponding data is loaded to the Feeder Load Overview table. In Study Mode, you can open the detail panes and view or edit information just as you would in Real-Time Mode.

Feeder Load Management Window Panels

The Feeder Load Management window contains the following sections or panels:

- **Feeder Load Overview Panel** - Displays at the top of the Feeder Load Management window. When the tool opens initially, only this panel is fully displayed. This is the main or summary panel, while the other panes are detail panes. The detail panes display information about a feeder selected in the Overview panel.
- When the tool opens initially, only the Feeder Load Overview Panel is fully displayed. All other panes display only a header. To open a panel, click the  button to the right of the panel header:



The  buttons are disabled (grayed) until a row is selected in the Feeder Load Overview Table.

When you open a details panel for a selected row of the Feeder Load Overview table, all other rows in the Feeder Load Overview table become hidden.

To restore the hidden rows of the Feeder Load Overview table and close all the detail panels, click the  button on the toolbar.

- **Device Violations and Warnings Panel** - Displays violation and warning information about devices on the feeder currently selected in the Feeder Load Overview table.
- **Feeder Load Details** - Displays load details for the feeder currently selected in the Feeder Load Overview table. This panel is only available when a present load row is selected in the Feeder Load Overview table.
- **Feeder Tie Points Capacity Overview Panel** - Displays tie point capacity information about the feeder currently selected in the Feeder Load Overview table. This panel is available only when a present load row is selected in the Feeder Load Overview table.
- **Regulation Devices Details Panel** - Displays regulation device information about the feeder currently selected in the Feeder Load Overview table.

Feeder Load Overview Panel

This panel displays feeder load information for the feeder(s) that were selected when the Feeder Load Management window was initiated or updated (either from the Viewer or the Feeder Load Summary window).

In Real-Time mode, the Feeder Load Overview panel displays 31 rows for each feeder:

- Present measurements (Date/Time column value in green),
- Next 24 hours forecasts (Date/Time column values in black), and
- Daily peak forecasts for 6 days after current day (Date/Time column values in blue).

In Study Mode, the Feeder Load Overview displays current study session data calculated by the Feeder Load Management tool based on the user's request from the **Study Session Parameters**.

This panel includes the Feeder Load Overview table and a toolbar. The Feeder Load Overview table includes the following columns:

- **Substation** – The substation name
- **Feeder** – The feeder name. This column displays a yellow background for rows with abnormal data source or/and data quality for any of the phases. See **Data Source and Data Quality** on page 17-16 for more details.

- **Amps A (%)** – Feeder Head Phase A Current with capacity utilization percentage
- **Amps B (%)** – Feeder Head Phase B Current with capacity utilization percentage
- **Amps C (%)** – Feeder Head Phase C Current with capacity utilization percentage
- **kW A** – Feeder Head Phase A Active Power
- **kW B** – Feeder Head Phase B Active Power
- **kW C** – Feeder Head Phase C Active Power
- **kVAR A** – Feeder Head Phase A Reactive Power
- **kVAR B** – Feeder Head Phase B Reactive Power
- **kVAR C** – Feeder Head Phase C Reactive Power
- **kV A** – Feeder Head Phase A Voltage
- **kV B** – Feeder Head Phase B Voltage
- **kV C** – Feeder Head Phase C Voltage
- **Feeder Condition** – The violation or warning (if any) on a feeder. See **Data Source and Data Quality** for the range of values and colors for this column. When multiple violations/warnings occur on a feeder, this column shows the highest-level violation.
- **Date/Time** – The date and time for the displayed feeder condition
- **Score** – The EDA score of the feeder at the time of the condition
- **Conductor** – The number of conductor overloads
- **Switch** – The number of switch overloads
- **Xfmr** – The number of transformer overloads
- **Volt** – The number of voltage violations
- **Backfeed** – The number of backfeeds

Feeder Load Overview Panel Toolbar

The Feeder Load Overview Panel toolbar provides the following options:

- Click  to restore all the rows in the Feeder Load Overview table and close all the detail panes.
- Click  to focus the Viewer on a selected feeder. This button is disabled until the user selects a row in the Feeder Load Overview table.
- Click  to print the Feeder Load Overview table.
-  Click this to toggle on/off the balloon dialog. When this button is toggled on and a Load Overview row is selected, a balloon dialog displays the selected row's data source and data quality information. See **Data Source and Data Quality** on page 17-16 for more details.
-  Click this button to only show rows that match the selected cell. This button is disabled until you select a row in the Feeder Load Overview table. Once an auto filter is applied this button is replaced by the "Auto Filter Off" button.
-  Click this button to remove a previously selected auto filter.

The toolbar also displays name of the filter that is currently in use:

Filter: All, Date/Time = Wed, Dec 10 20:00

Filtering and Sorting

The default sort order for the Feeder Load Overview table is by date. You can filter and sort the rows in this table in the same way you filter and sort the rows on the Feeder Load Summary window. See **Filtering the List on page 17-5** and **Sorting the List on page 17-5**.

Device Violations and Warnings Panel

The Device Violations and Warnings panel displays identified device overload violations and energy assessment warnings for the feeder selected in the **Feeder Load Overview Panel** panel.

This panel includes the Device Violations and Warnings table and toolbar. The Feeder Device Violations and Warnings table includes the following columns:

- **Device** – The device's name
- **Violation** – The violation or warning name. See **Data Source and Data Quality on page 17-16** for range of values and colors for this column.
- **Phase** – The phase that the violation is on
- **Value** – The violation/warning value
- **Limit** – The violation/warning limit
- **Mitigation** – This displays Yes if mitigation is required; otherwise, this displays No
- **Switching Plan** - The associated switching sheet number, if one exists. Double-click this to display the switching sheet in the Switching Management window.
- **Last Update** – The date/time the violation/warning was saved to the database

Device Violations and Warnings Toolbar

The Device Violations and Warnings toolbar provides the following options:

- Click  to focus the Viewer on a selected feeder. This button is disabled until the user selects a row in the Device Violations and Warnings table.
- Click  to print the Device Violations and Warnings table.

Sorting the List

To sort by any column, click the column header. Click once to sort in ascending order; click again to sort in descending order.

Feeder Load Details Panel

Note: This panel is only available when a present load row is selected in the Feeder Load Overview table.

The Feeder Load Details panel displays a set of feeder three-phase devices that characterize the load for the feeder selected in the **Feeder Load Overview Panel** panel. The feeder breaker will typically characterize each feeder and 3 to 5 closed sectionalizing devices. Some of these sectionalizing devices will have measurements and may be supervisory control points.

This panel includes the Feeder Load Details table and a toolbar. The Feeder Load Details table includes the following columns:

- **Device** – The device name
- **Amps A** - Device Phase A Current
- **Amps B** - Device Phase B Current
- **Amps C** - Device Phase C Current

- **kW A** – Device Phase A Active Power
- **kW B** – Device Phase B Active Power
- **kW C** – Device Phase C Active Power
- **kVAR A** – Device Phase A Reactive Power
- **kVAR B** – Device Phase B Reactive Power
- **kVAR C** – Device Phase C Reactive Power
- **kV A** – Device Phase A Voltage
- **kV B** – Device Phase B Voltage
- **kV C** – Device Phase C Voltage
- **Last Update** – The date and time when the data was saved to the database

Feeder Load Details Toolbar

The Feeder Load Details toolbar provides the following options:

- Click  to focus the Viewer on a selected feeder. This button is disabled until the user selects a row(s) in the Feeder Load Details table.
- Click  to print the Feeder Load Details table.

Sorting the List

To sort by any column, click the column header. Click once to sort in ascending order; click again to sort in descending order.

Feeder Tie Points Capacity Overview Panel

Note: This panel is available only when a present load row is selected in the Feeder Load Overview table.

This panel displays all three-phase open tie points for the feeder selected in the **Feeder Load Overview Panel** panel. A tie point is a three-phase open switch of an accepted and configured set of switch classes. The open switch doesn't need to be in its nominal position.

The panel includes the Tie Points Capacity Overview table and a toolbar. The Tie Points Capacity Overview table includes the following columns:

- **Tie Point** – The tie point name
- **To Feeder** - To Feeder name
- **To Substation** - To Substation name
- **To Feeder Amps A** - To Feeder Phase A Current
- **To Feeder Amps B** - To Feeder Phase B Current
- **To Feeder Amps C** - To Feeder Phase C Current
- **Tie Point Amps A** - Tie Point Phase A Current
- **Tie Point Amps B** - Tie Point Phase B Current
- **Tie Point Amps C** - Tie Point Phase C Current

Feeder Tie Points Capacity Overview Toolbar

The Feeder Tie Points Capacity Overview toolbar provides the following options:

- Click  to focus the Viewer on a selected feeder. This button is disabled until the user selects a row in the Tie Points Capacity Overview table.
- Click  to open Feeder Load Management 2 for the feeder listed in the To Feeder column of the selected row. This button is disabled until the user selects a row in the Tie Points Capacity Overview table. If Feeder Load Management 2 is already open, it is updated with the data for the “To Feeder.”
- Click  to print the Feeder Tie Points Capacity Overview table.

Sorting the List

To sort by any column, click the column header. Click once to sort in ascending order; click again to sort in descending order.

Regulation Devices Details Panel

The panel displays regulation device information for the feeder selected in the **Feeder Load Overview Panel** panel. This panel includes three tabs:

- **Transformers Tab**
- **Capacitors Tab**
- **Equivalent Sources Tab**

Each tab also displays a table and a toolbar, as described in the following sections.

Transformers Tab

This tab displays all Transformer/Regulator devices electrically connected to feeder selected on the **Feeder Load Overview Panel**.

The Transformer/Regulator Device Details table includes the following columns:

Note: Editable cells display a pink background. Press the  button on the tab's toolbar to save the changes and trigger resolve for the selected feeder.

- **Device** – The device name
- **kV A** – Device Phase A Voltage
- **kV B** – Device Phase B Voltage
- **kV C** – Device Phase C Voltage
- **Voltage Setpoint** - The regulation set point. Administration and Full Operations users can change the value of this column when the Automatic Control is on.
- **Tap Step** - The tap step position. Administration and Full Operations users can change the value of this column to a value between Min Tap Step and Max Tap Step when the Automatic Control is off.
- **Min Tap Step** - The minimum tap step position
- **Max Tap Step** - The maximum tap step position
- **Regulation Type** – The regulation type
- **Automatic Control** – Administration and Full Operations users can switch the value of this column between on and off

Capacitors Tab

This tab displays all downstream capacitor banks for the feeder selected on the **Feeder Load Overview Panel**.

The Capacitors table includes the following columns:

Note: Editable cells display a pink background. Press the  button on the tab's toolbar to save the changes and trigger resolve for the selected feeder.

- **Device** – The device name
- **kVAR A** – Device Phase A Reactive Power
- **kVAR B** – Device Phase B Reactive Power
- **kVAR C** – Device Phase C Reactive Power
- **On Threshold** - The on threshold. Administration and Full Operations users can change the value of this column when the Automatic Control is on.
- **Off Threshold** - The off threshold. Administration and Full Operations users can change the value of this column when the Automatic Control is on.
- **# Energized Capacitors** – The number of energized capacitors. Administration and Full Operations users can change the value of this column to a value between 0 and # Total Capacitors when the Automatic Control is off.
- **# Total Capacitors** – The total number of capacitors
- **Regulation Type** – The capacitor regulation type. The regulation types is displayed as one of the following: Fixed, Bus Voltage, Line Current, Line VAR, Line Power Factor, or Temperature.
- **Measurement Attribute** – The monitored attribute of regulated bus voltage, line flow, or area time/temperature.
- **Automatic Control** – Administration and Full Operations users can switch the value of this column between on and off.

Equivalent Sources Tab

This tab displays all sources electrically connected to the feeder selected on the **Feeder Load Overview Panel**.

The Equivalent Sources table includes the following columns:

Note: Editable cells display a pink background. Press the  button on the tab's toolbar to save the changes and trigger resolve for the selected feeder.

- **Source Name** – The name of the source
- **kW A** – Source Phase A Active Power
- **kW B** – Source Phase B Active Power
- **kW C** – Source Phase C Active Power
- **kVAR A** – Source Phase A Reactive Power
- **kVAR B** – Source Phase B Reactive Power
- **kVAR C** – Source Phase C Reactive Power
- **Amps A** – Source Phase A Current
- **Amps B** – Source Phase B Current
- **Amps C** – Source Phase C Current

- **Voltage** – The Administration and Full Operations users can change the value of this column
- **Angle** – The Administration and Full Operations users can change the value of this column

Regulation Devices Details Toolbars

Each tab on the Regulation Devices Details panel has its own toolbar. Each toolbar provides the following options:

- Apply changed parameters by pressing the  button. This triggers Feeder Load Management re-forecasting for the selected feeder. When the calculation is finished, the Regulation Devices Tables and the corresponding row of the Feeder Load Overview table are dynamically updated.

Note: When the Feeder Load Management Tool switches between Real-Time and Study Mode, the regulation device parameters are updated to the last saved values. Any local changes that have not been applied are lost.

- Discard changes and restore current parameters by pressing the  (undo) button.
- Focus the Viewer on the selected device by pressing the  button. This button is disabled until the user selects a row in the table.
- Click  to print the contents of the tab.

Sorting the Regulation Devices Details Table

To re-sort the rows in any Regulation Devices Details table, click the column header. Click once to sort in ascending order; click again to sort in descending order.

Study Session Parameters

The Study Sessions Parameters dialog allows you to request a new Feeder Load Management calculation for the current study session's topology. You can specify the start date and time, type and number of forecasts to calculate. You can also change the scale factor for any day of a week.

Important Notes:

When the Feeder Load Management tool switches between Real-Time and Study Mode, Viewer #1 switches to the same mode. An existing study session is used as the Feeder Load Management Tool Study Session or, if there is not one, a new study session is created based on the real-time data.

The user can reset the study session from the Viewer. The session can be reset to nominal or real-time data.

The Feeder Load Management mode **does not change** when the Viewer switches between Real-Time & Study Mode.

To display the Study Session Parameters dialog, do one of the following:

- In Real-Time Mode, click the  button on the Feeder Load Management Tool toolbar or select **Study Mode** from the Actions menu.
- In Study Mode, click the  button on the Feeder Load Management Tool toolbar or select **Study Session Parameters** from the Actions menu.

This dialog displays the following fields and buttons:

- **Start Date/Time** - The start date and time for the calculation. The start time must be at least two hours from the current time. Requested calculations must be within a week (7days) of the current date/time.
- **Hourly Forecasts / Daily Peak Forecasts** - The type of forecast to calculate. You can request either hourly or daily peaks forecasts calculations (but not both).
- **Number of Hourly Forecasts** - The number of hourly forecasts to calculate. This value must be between 1 and 24. (This value is used only if Hourly Forecasts is selected above.)
- **Number of Daily Forecasts** - The number of daily forecasts to calculate. This value must be between 1 and 7. (This value is used only if Daily Peak Forecasts is selected above.)
- **Scale Factors** (Sunday through Saturday) - The scale factors to use for each day of the week.
- **Previous** button - Click this to see the previously calculated results for the selected feeders. This button is enabled only if study data is available for the currently selected feeders from previous Study Mode calculations made by the same user.

Note: Only one solution per user is saved. Each new calculation replaces the previous one in the database, and becomes your “previous solution” when you open the dialog next time.

- **Execute** button - Click this to request the calculation for the selected feeders. Once the calculation is finished, the dialog will close and the data will be loaded to the **Feeder Load Overview Panel on page 17-9**.
- **Cancel** button - Click this to exit the Study Session Parameters dialog.

Requesting a New Feeder Load Management Calculation

To request a new Feeder Load Management calculation, follow these steps:

1. Do one of the following to open the Study Session Parameters dialog:
 - In Real-Time Mode, click the  button on the Feeder Load Management toolbar or select **Study Mode** from the Actions menu.
 - In Study Mode, click the  button on the Feeder Load Management toolbar or select **Study Session Parameters** from the Actions menu.
2. Complete the fields on the Study Session Parameters dialog, as described on page 17-15.
3. Click the **Execute** button. The results of the calculation are displayed on the Feeder Load Management Overview Panel.
4. View other **Feeder Load Management Window Panels** for more information.

Data Source and Data Quality

Possible sources of data for a feeder head are Default, SCADA, or Manual Entry. SCADA is considered to be the normal source; the other two are considered abnormal.

Possible values of data quality are Valid, Estimated, Held, Under Limit, Over Limit, Out of Range, Abnormal, Alarm, Suspect, or Invalid. Valid is considered to be the normal quality; the others are considered abnormal.

A yellow background for a feeder name in Feeder Load Summary or Feeder Load Overview indicates that the feeder head data source or/and quality is abnormal.

Chapter 18

Fault Location, Isolation, and Service Restoration

This chapter describes Fault location, Isolation, and Service Restoration (FLISR) functionality.

Note: The features described in this chapter are specific to the Fault Location, Isolation, and Service Restoration functionality available from the Operator's Workspace environment. For information about the Fault Location Analysis feature that is integrated with Web Workspace and accessible from the Web DMS Tools login, see **Fault Location Analysis on page 19-1**.

This chapter includes the following topics:

- **Overview**
- **Using the FLISR Control Toolbox**
- **Using the FLISR Disable Summary Window**
- **Using FLISR with Work Agenda**
- **Using the FLISR Report Tool**
- **Using FLISR Flow Summary Window**
- **Generating a Switch Plan from the FLISR Summary Tool**
- **Executing FLISR in Automatic Mode**
- **Generating a Switch Plan for Overload Case**

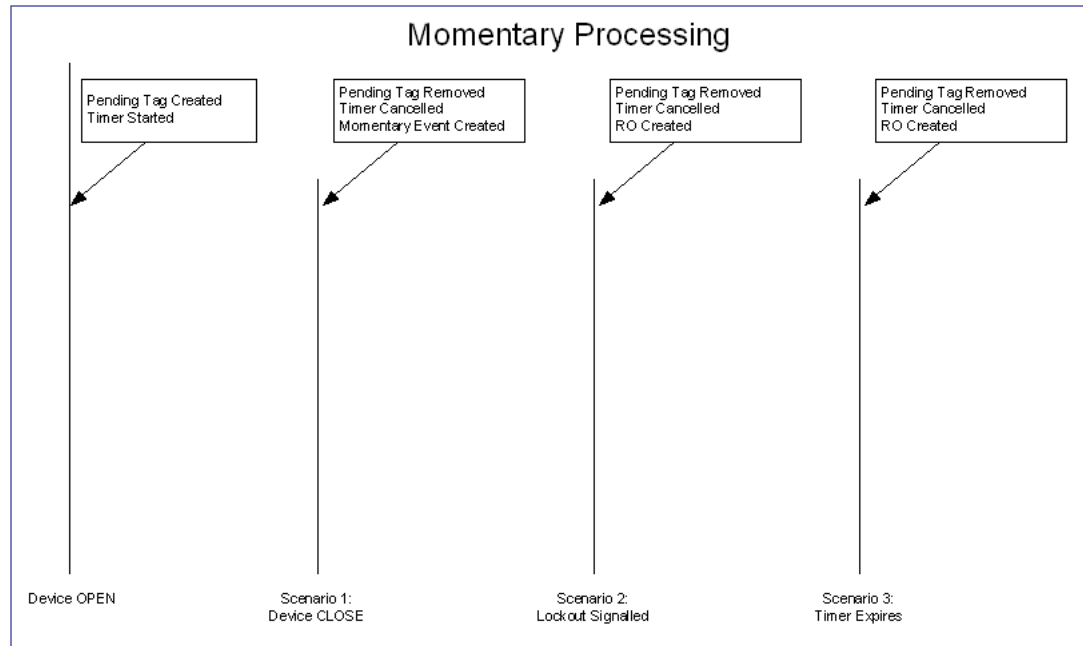
Overview

The Oracle Utilities Network Management System – Fault Location, Isolation and Service Restoration (FLISR) responds to protection trips of SCADA monitored and controlled switches (i.e., feeder circuit breakers (CB) and downstream reclosers (ACR)). FLISR automatically identifies the faulted section using the telemetered Protection Trip and Fault Indication flags and then (in Auto Mode) automatically schedules the isolation and restoration actions to restore the non-faulted areas de-energized by isolating the fault. In Manual Mode, FLISR will present the isolation and restoration actions for execution by the user.

The following figures show the sequence of events in a FLISR scenario.

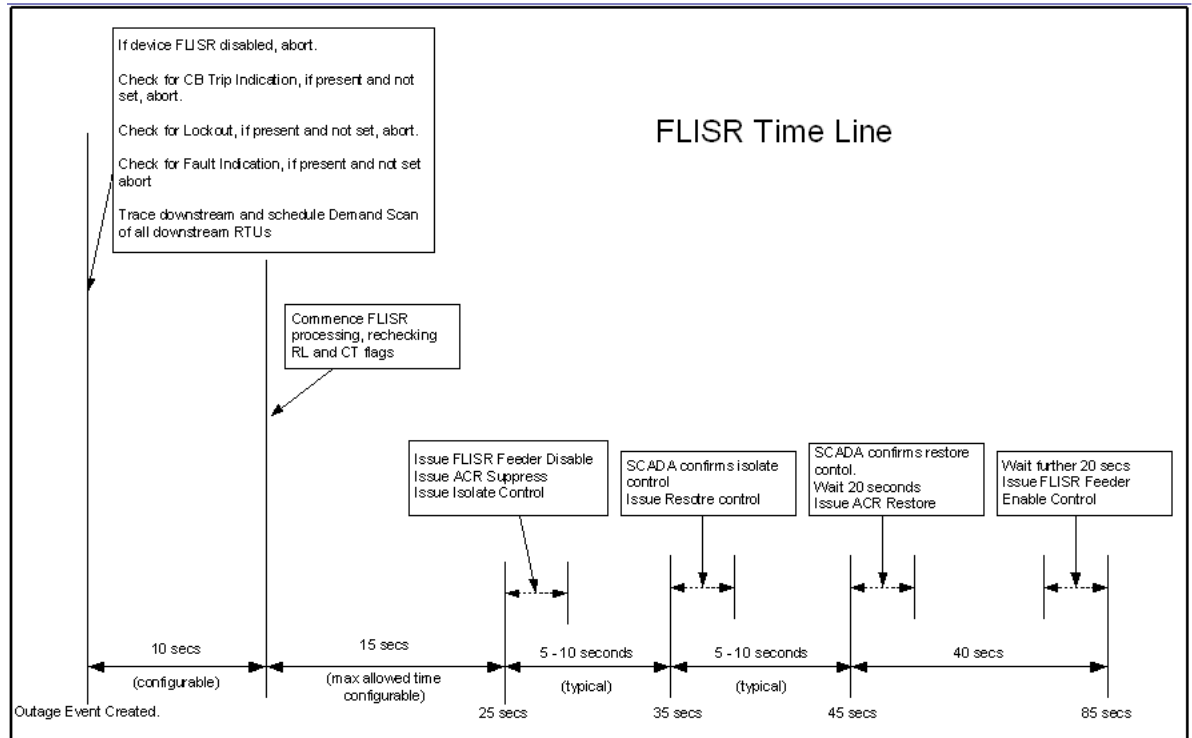
The first figure shows the various scenarios in the momentary processing. The scenarios are:

1. A breaker trips and is followed a short time later by a reclose operation.
2. A breaker trips and is followed by a recloser lockout.
3. A breaker trips but the device has no recloser lockout signal available. FLISR waits a configurable amount of time and, in the absence of a close operation, assumes lockout to have occurred.



Note: RO (Real Outage) is created only if customer supply nodes are de-energized as a result of the operation.

Once an RO is created, the FLISR processing sequence shown in the following figure is initiated.



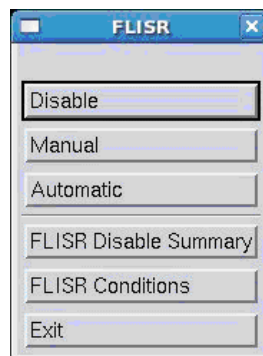
The control sequence (starting at around 25 seconds) is only performed in automatic mode. In manual mode an operator must initiate the control sequence.

Timings in the above diagram are only indicative. Actual values will depend on the complexity of the solution required and the responsiveness of the isolate/restore controls sent to SCADA. The following timings are deterministic:

- The delay allowed for demand scans. This is configurable and defaults to 10 seconds
- The maximum solution time allowed in automatic mode. This is configurable and defaults to 15 seconds. If the solution takes longer to solve than this time, FLISR will not automatically execute the control sequence. The option for an operator to manually initiate the control sequence is preserved.
- Maximum time allowed for automatic operations after the lockout is: Demand scan delay + maximum solution time. The default configuration is 25 seconds.
- Wait times for Recloser operations. These are 20 seconds.
- Any error conditions detected during process are logged in the Event Log.

Using the FLISR Control Toolbox

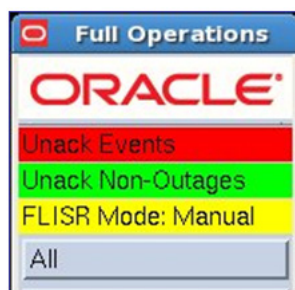
The FLISR function is controlled via the FLISR Tools toolbox on the Environment Manager.



The following table describes the options on the FLISR Control Toolbox.

Action	Description
Disable	Disables FLISR from calculating, generating or executing restoration plan. FLISR still automatically performs disables/enables functions
Manual	Places FLISR in manual mode, where restoration plans are automatically generated but must be manual executed by the operator via a switching sheet generated from the FLISR Summary Tool
Automatic	Places FLISR in Automatic Mode including automatic execution of switching plans
FLISR Disable Summary	Opens the FLISR Disable Summary window, which shows which devices are disabled
FLISR Conditions Summary	Opens the summary window, which shows all devices that have FLISR action conditions placed on them
Cancel	Closes the FLISR Toolbox

A status field is available on the Environment Manager panel, which indicates FLISR Mode: Disabled, FLISR Mode: Manual or FLISR Mode: Automatic.

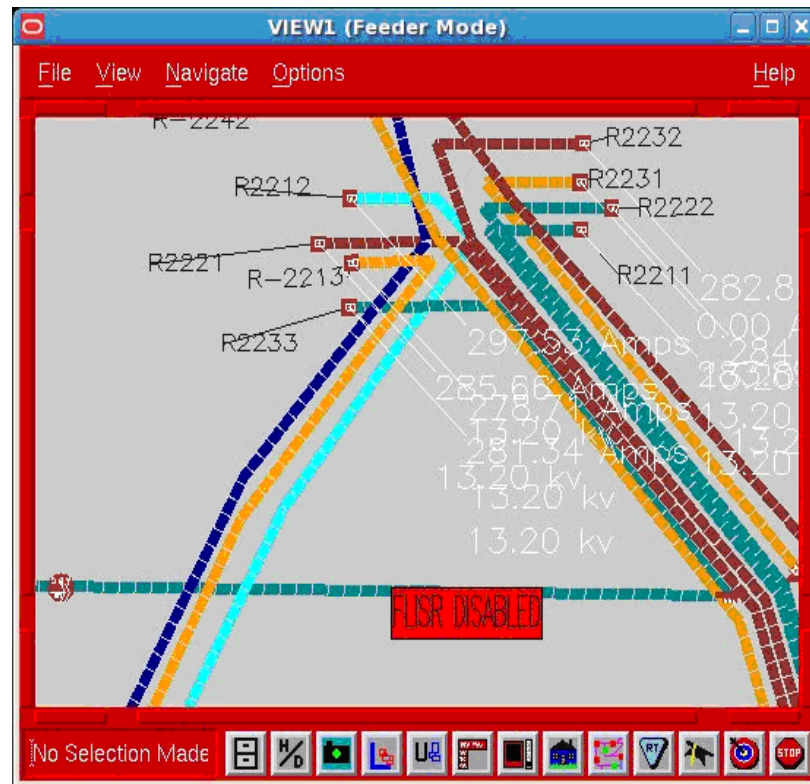


Enabling and Disabling FLISR Devices from the Control Tool

You can enable or disable devices for FLISR actions by clicking the **Enable FLISR** and **Disable FLISR** buttons from the FLISR Control Tool. These buttons are displayed on the Control Tool for all FLISR devices.



When a FLISR device is disabled, a condition flag is shown on the Viewer adjacent to the device as shown in the following figure:



Note: Disabling a Circuit Breaker or a Recloser will implicitly disable all downstream FLISR actions. Disabling a non-reclosing device (i.e., a simple sectionalizer) will only disable the individual device.

Using the FLISR Disable Summary Window

The FLISR Device Status window allows you to view devices that have been individually disabled from FLISR operations. There are several scenarios for disabling FLISR on a device.

- Devices can be enabled/disabled through actions on the device's control tool
- Disabling a circuit breaker (and/or recloser) automatically disables all downstream devices along a radial feeder. Each device is checked during FLISR execution for upstream disabled breakers or reclosers.
- Disabling a sectionalizer disables just the individual device.
- Suppressing reclose features of a recloser or circuit breaker will also disable FLISR on the device.
- An explicit FLISR Disable SCADA point can be mapped to a device to. When set (typically through a SCADA calculated point), FLISR will be disabled on that device.
- A device can be disabled in multiple fashions, only when all disabling conditions are removed will the device become active again
- A device can only be enabled by removing the corresponding disabling constraint. For example it is not possible to manually enable a device that has been automatically disabled due to reclose suppression.

- Disabled devices are marked with a “FLISR Disabled” condition, shown in the Viewer and summarized in this display window.

To open this window, select **FLISR Disable Summary** from the FLISR Control Toolbox.

The FLISR Device Status window displays the following fields and buttons:

- The **Cond #** column displays the number of the associated condition used to show the device as disabled.
- The **User** column displays the user name of the disabling user.
- The **Date Created** column displays the date of the disabling event.
- The **Substation** column displays the substation that the disabled device is connected to
- The **Feeder** column displays the feeder that the disabled device is on.
- The **Device** column displays the name for this device.

Buttons

- The **Refresh** button is used to manually refresh the information displayed on the screen.
- The **View** button displays the selected device in Viewer 1 by focusing the Viewer on the device corresponding to the selected row
- The **Exit** button closes the FLISR Disable Summary window.

Using FLISR with Work Agenda

The Work Agenda is the starting point for viewing the status and results of the FLISR calculations. Each outage row is color-coded to represent the FLISR status of a job.

The background color of the “Event #” field in the Work Agenda list indicates the FLISR status:

- **Yellow** - The Job is currently being processed as a FLISR job and a solution is being searched for (e.g., Event 5253).
- **Green** - A FLISR solution has been found for the Job (e.g., Event 5252).
- **Light Red** - A FLISR solution has been found but it overloads the restoring feeder – manual intervention will be required (e.g., Event 5002).
- **None** - No FLISR solution can be found for this job (e.g., Event 4502).

Using the FLISR Report Tool

The FLISR report tool summarizes the SCADA devices and their signals and the recommended restoration plans.

To use this tool, select the outage and select **FLISR Report** from the Work Agenda’s **Actions** Menu. The Fault Location, Isolation, and Service Restoration window opens, displaying the following information:

- **SCADA Downstream Switch Summary.** This summarizes the status of all FLISR devices downstream of the tripped device.
 - **Device Name** displays the alias of the device. Select the row will allow you to “target” the isolation switch in the Viewer.
 - **Status** displays the tripped/closed status of all associated SCADA devices.
 - **Previous Amps** displays the pre-fault amps through the associated SCADA devices. This is calculated from the pre-fault MW and pre-fault MVAR
 - **Fault Ind** displays the fault indication status of all associated SCADA devices.

- **Lockout Status** displays the reclose lockout status of all associated SCADA devices.
- **Pre MW** displays the pre-fault MW through all associated SCADA devices
- **Pre MVAR** displays the pre-fault MVAR through all associated SCADA devices
- **Status** displays the relevant SCADA status (i.e., failed) of the associated SCADA devices status, reclose lockout, fault indication, and analog signals.
- FLISR Plans Summary
 - **Isolation Switch** displays the alias of the SCADA device used as the isolation point, in the FLISR generated restoration plan
 - **Expected Pickup Amps** displays the expected amps (load) in the section ex the isolation switch, which is to be transferred to another feeder.
 - **Preferred Restore Option** is a user selectable toggle button that may be used to select/deselect a FLISR restoration plan.
 - **Restore Switch** displays the alias of the SCADA device used as the restoration point, in the FLISR generated restoration plan.
 - **Fdr** displays the feeder name to which supply is being transferred.
 - **Before Pickup Amps** displays the amps on the feeder to which supply is being transferred.
 - **After Pickup Amps** displays the expected amps (load) on the feeder to which supply is being transferred after the transfer.
 - **Limit Object** displays the highest loaded limiting object type
 - **Expected Limit Object Amps** displays the expected highest loaded limiting object amps after the restoration
 - **% of Rating** displays load as a percentage of limiting object rating

FLISR Report Tool Menus

The following table describes the File menu options at the bottom of the FLISR Summary window.

Option	Description
Exit	Exits the FLISR Summary window.

The following table describes the Action menu options of the FLISR Summary window.

Option	Description
View	Located at the bottom of the FLISR Summary window, it displays (focuses) the selected isolation device in the Restore Plans table on Viewer 1
Generate Switch Plan	Generates a switch plan for the selected isolate/restore sequences when FLISR is in Manual mode or when an overloaded plan is detected under Auto mode
Branch flows	Opens the Branch Flows window (FLISR Flow Summary)

Option	Description
View Limit	Displays (focuses) on the Viewer the highest expected limiting device for the selected restore sequence
View Feeders	Loads all the affected feeders for the selected isolate/restore sequences into Viewer 1

Using FLISR Flow Summary Window

The FLISR Flow Summary window displays the calculated flows in the restoration path and in the de-energized section that will be transferred.

To open this window, select **Branch Flows** from the **Action** menu of the FLISR Report Tool (Fault Location, Isolation, and Service Restoration window).

The Flow Summary Window displays the following fields and buttons:

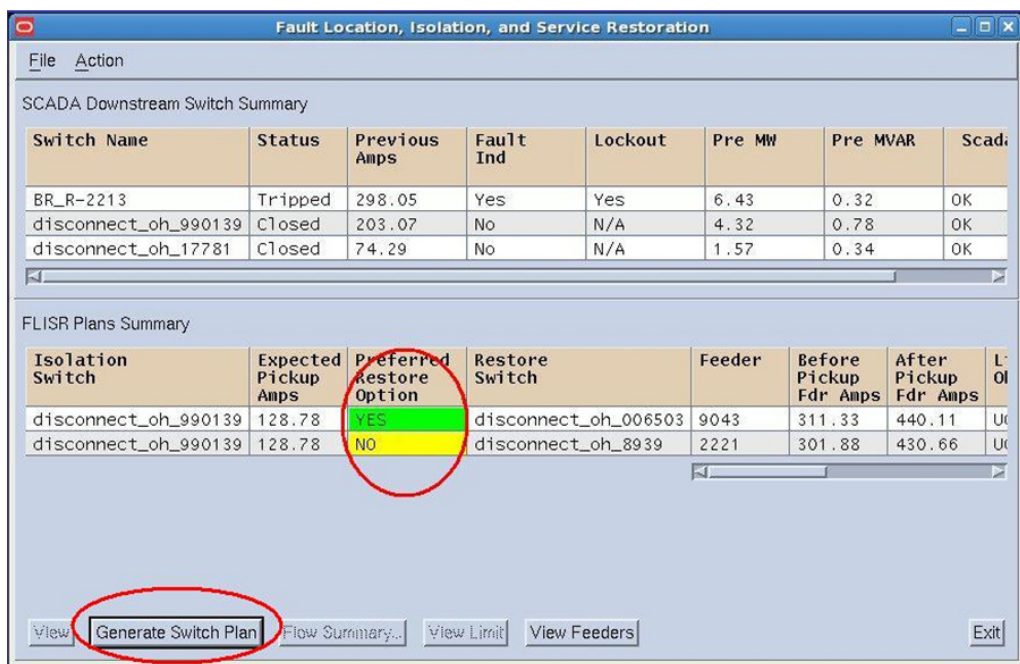
- **Branch Name** is the alias of the object in the restoration path or de-energized section
- **Type** is object type: Cond = conductor, Switch = switch, Fuse = fuse
- **Flow** is the flow in amps through the object
- **Limit** is the limit in amps for the object
- **% Rating** is the expected load flow through the object as a percentage of the object's rating
- **Margin** is the available capacity in amps for the object
- **Internal** is a flag that if set to 'Y' means the object is part of the faulted (de-energized) feeder or if set to 'N' it is part of the restoring feeder.
- The **View** button displays the selected branch flow row on Viewer 1, with the selected object flashing

Generating a Switch Plan from the FLISR Summary Tool

In manual mode, the selected 'Preferred Restore Options' may be executed by generating a Switch Plan and then executing the steps in the Switch Sheet.

To generate the Switch Plan:

1. Select the 'Preferred Restore Options' boxes for the plans to be generated. The box changes the text to 'Yes' and the background to green.
2. Click the **Generate Switch Plan** button. A Switch Sheet Editor page will pop up with the switch steps already inserted.



3. Click the **Generate Switch Plan** button. A Switch Sheet Editor page will pop up with the switch steps already inserted.

If there is an existing sheet already associated with this FLISR outage, you are prompted with a set of dialog boxes asking whether the existing sheet should be overwritten and whether the steps should be appended to the existing plan.

- **Sheets exist for this outage** dialog
 - If the existing associated sheet is required (or you don't want to create a new sheet), select **Yes**.
 - If a new sheet is to be generated or an existing sheet is to be appended to, select **No**.
- **Append Steps to Existing Sheet** dialog:
 - If a new sheet is to be generated, select **No**. This feature is used in Manual Mode to overwrite unexecuted switch sheets.
 - If steps are to be added to a existing switching sheet, select **Yes**. This feature is applicable when a user wants to execute a overloaded isolate/restore option on a plan that was already executed for the non-overloaded isolate/restore options – see Overload Case below.

- **Overwrite steps in existing sheet** dialog:
 - If you selected No for 'Append Steps to Existing Sheet' dialog then you are prompted to confirm. If you want to replace all the steps in the existing sheet, select **Yes**.
 - If you want to cancel, select **No**.

Depending on the options selected above, the Switch Sheet Editor will display the switch sheet with the FLISR generated steps.

4. From the Switch Sheet Editor window, choose one of the following options on the **Action** menu.
 - **Execute FLISR Steps** - Executes all FLISR switch steps, an additional confirmation prompt, is provided to confirm the execution. Note that separate isolation/restoration sequences will be executed in parallel.
 - **Clear FLISR Conditions** - Clears the FLISR operated Flags from the Viewer for this Switch Sheet.

Executing FLISR in Automatic Mode

In Auto mode, the Switch Sheet will be automatically generated and executed without user intervention.

The Switch Sheet may be manually augmented with additional steps after the automatic component has been completed or a step has failed. If the switch sheet has been called up during the automatic execution it will have been placed in View Only mode. Additional steps may be added after the sheet has been taken out of View Only mode from the button on the Mode menu.

The switch sheet will behave like a normal Fault switch sheet after the FLISR generated steps are completed or have failed after it is taken out of View Only mode.

After FLISR calculations have been, the corresponding Switch Sheet may be called up from the 'Switching...' button on the Work Agenda. It is possible that when you call the switch sheet up that you will see the switch sheet still executing.

Generating a Switch Plan for Overload Case

In the case where the restoration plan would result in overloads either in the restoring feeder or the section being transferred, the user must apply an override to generate the Switch Plan.

The Preferred Option Restored box must be selected. A dialog box is also provided to confirm using a Preferred Restore Option with overloads. In automatic mode, the plans with overloads are not executed automatically and must be run by the user in manually (from the switch sheet via the Execute FLISR Steps action command).

Chapter 19

Fault Location Analysis

Oracle Utilities Network Management System's Fault Location Analysis uses fault-related SCADA measurements to identify probable fault locations. This information can be used to dispatch crews to targeted locations, thus shortening outage duration and restoration time.

Note: Fault Location is only available if your system supports SCADA extensions.

This chapter covers the following topics:

- **Fault Location Process Overview**
- **Logging in to the Web DMS Environment**
- **Using the Fault Location Analysis Tool**
- **Viewing Fault Events in the Work Agenda**
- **Viewing Fault Outages in the Viewer**

Fault Location Process Overview

Here's how the Fault Location process works:

- When the system receives a fault current indicator, the Fault Location application automatically retrieves fault information from relays and fault indicators (if available) and automatically creates a new fault current event.
- The Fault Location application uses the fault and circuit information to calculate potential fault locations for the fault current events, which are displayed in the Work Agenda as well as in the Viewer.
- From the Work Agenda, the user starts the Fault Location Analysis tool and displays details about fault events, including SCADA measurements involved in the analysis, and reviews the probable fault locations.
- Optionally, the user manually corrects a fault location to better reflect real-world conditions.
- Optionally, the user changes one or more analysis parameters and then recalculates the fault locations using the modified parameters. The user can confirm or clear (discard) calculated fault locations as appropriate.

Using the Fault Location Analysis Tool

The Fault Location Analysis tool displays possible fault locations and the SCADA data involved in the Fault Location analysis. This tool also allows you to change one or more analysis parameters and recompute the faults locations. Finally, you can use the tool to confirm or discard calculated locations.

This section includes the following topics:

- **Logging in to the Web DMS Environment**
- **Using the Fault Location Analysis Window**
- **Using the Fault Location Analysis Options Window**
- **Modifying Parameters and Recalculating Fault Locations**
- **Confirming Fault Locations**
- **Marking Fault Locations as Incorrect**
- **Correcting a Fault Location**

Logging in to the Web DMS Environment

To use Fault Location Analysis, you must log into both Operator's Workspace and the Web DMS environment using the same user ID.

Note: Check with your system administrator to verify that your system has been configured to support Fault Location Analysis and to obtain any special login instructions.

You can log in to the Operator's Workspace and the Web DMS environment in either order. (It does not matter which one you start first.) For instructions on logging into Operator's workspace, see **Logging In** on page 1-7.

To log in to the Web DMS environment:

1. Depending on how your system was installed, do one of the following:
 - Click the **Web DMS** icon found under the appropriate program group in your Windows Start Menu.
 - Double-click the **Web DMS** icon on your desktop.
 - Open a web browser and type the Web DMS URL in the browser's Address field.The Web DMS Login window displays.
2. Enter the user name you used to log into the Operator's Workspace application.
3. Enter the password.
4. Click the **Validate** button. The bottom portion of the Web DMS Login window sensitizes.
5. Select the appropriate User Type from the drop-down menu.
6. Click the **Login** button. Once you have successfully logged on, the Web DMS window is displayed. You are now ready to begin using the Fault Location Analysis tool, as described in the next section.

Using the Fault Location Analysis Window

The Fault Location Analysis window displays possible fault locations and the SCADA data involved in the Fault Location analysis.

To open the Fault Location Analysis window from the Operator's Workspace Work Agenda, select an event in the list and then select **Fault Location...** from the Actions menu.

The Fault Location Analysis window displays two sections:

- The **SCADA Measurements** section displays fault-related SCADA measurements used to identify probable fault locations.
- The **Possible Fault Locations** section displays the list of devices identified by the Fault Location Analysis tool as possible fault locations. If no valid fault locations are found, a single “Undetermined Fault” record is listed.

SCADA Measurements Section

- The **Device** column contains the name of the device reporting the SCADA measurements.
- The **Status** column contains the status of the device.
- The **Fault Ind** column contains the fault indicator (Yes or No).
- The **Lockout Ind** column contains the lockout indicator (Yes, No, or N/A).
- The **Qual** column contains Quality codes for the measurement that indicate the quality of the SCADA measurement (e.g., out of scan, inhibited, manual override). Several quality codes can be listed.
- The **Amps** columns contain the calculated current flow from the source.

Possible Fault Location Section

- The **Status** column contains the status of the fault location: Possible Fault, Confirmed Fault-Out, or Fault Incorrect.
- The **Fault Type** column contains the fault type: Phase A to Ground, Phase A to Phase C, etc.
- The **Fault Device** column contains the fault device name.
- The **Phases** column contains the faulted phases.
- The **Location** column contains distance from the device to the upstream switch.
- The **GPS (X,Y)** column contains the X,Y coordinates of the predicted fault.

Menu Options and Toolbar Buttons

- To print the Fault Location Analysis information, click the  button on the toolbar or choose **Print** from the File menu.
- To close the Fault Location Analysis window, click the  button on the toolbar or choose **Exit** from the File menu.
- To modify calculation parameters and recalculate fault locations, click the  button on the toolbar or choose **Options** from the Actions menu. The Fault Location Analysis Options window is displayed (see page 19-4 for details).

Pop-Up Menu Options

If you right-click a row in the SCADA Measurements section, a pop-up menu displays the following options:

- **View** - Displays the device in the Viewer.

If you right-click a row in the Possible Fault Locations section, a pop-up menu displays the following options:

- **Confirm Fault** - Marks the device as Confirmed and marks all other devices in the list as Incorrect (not the correct fault location).
- **Mark Incorrect** - Marks the devices as Incorrect (not the correct fault location).
- **Correct Fault...** - Displays the Correct Fault Location window, which allows you to manually edit the fault location. See **Correcting a Fault Location** on page 19-5.
- **View...** - Displays the selected device in the Viewer.

Using the Fault Location Analysis Options Window

Use the Fault Location Analysis Options window to change the parameters used to calculate probable fault locations and then recalculate using the new parameters. Specifically, you can include or exclude specific fault types, and set the Resistance and Reactance values to use when calculating fault locations.

To display the Fault Location Analysis Options window, click the  button on the Fault Location Analysis window's toolbar.

The Fault Location Analysis Options window displays the following fields and buttons:

- The **Y/N** checkbox indicates whether this parameter will be used to recalculate fault locations. To exclude a fault type from the calculation, uncheck the associated box.
- The **Fault Type** column displays all fault types.
- The **Resistance** column displays the resistance value used to calculate probable fault locations. The default is zero. If you enter a value here, the system will recalculate using this value.
- The **Reactance** column displays the reactance value used to calculate probable fault locations. The default is zero. If you enter a value here, the system will recalculate using this value.
- When you click the **OK** button, all existing fault locations are flagged as incorrect, and a new location is added that matches your entries.

Modifying Parameters and Recalculating Fault Locations

To modify parameters and recalculate fault locations:

1. Display the Fault Analysis Location Options window, as described in the previous procedure.
2. To exclude a fault type from the calculation, uncheck the associated box. To include a fault type, make sure the box is checked. (Fault types used in the previous calculation are checked by default.)
3. For each checked box, you can specify a Reactance and/or Reactance value. These values will affect the subsequent calculation.
4. Click **OK**. The fault locations are recalculated and displayed on the Fault Location Analysis window.

Confirming Fault Locations

To confirm a fault location:

1. Select the device you want to confirm from the Possible Fault Location section on the Fault Location Analysis window. (See **Using the Fault Location Analysis Window** on page 19-3.)
2. Click the right mouse button and select **Confirm Fault** from the pop-up menu. The selected device is marked as Confirmed and all other devices in the list are marked as Incorrect. The Confirmed Fault changes from a yellow X to a red X in the Viewer. The other Incorrect faults disappear from the Viewer.

Marking Fault Locations as Incorrect

To mark a possible fault location as incorrect:

1. Select the device you want to mark as incorrect from the Possible Fault Location section on the Fault Location Analysis window. (See **Using the Fault Location Analysis Window** on page 19-3.)
2. Click the right mouse button and select **Mark Incorrect** from the pop-up menu. The selected device is marked as Incorrect and disappears from the Viewer.

Correcting a Fault Location

If none of the possible fault locations is correct, you can select the closest one and then correct the fault location details. The system creates a new fault location with the corrected information.

To correct a fault location:

1. Select the closest fault location from the Possible Fault Location section on the Fault Location Analysis window. (See **Using the Fault Location Analysis Window** on page 19-3.)
2. Click the right mouse button and select **Correct Fault...** from the pop-up menu. The Correct Fault Location window is displayed. The Status of the new fault location is set to Corrected Fault.
3. Enter the correct values for the following fields:
 - **Fault Type** - The specific fault type, such as Phase A to Ground or Phase C to Phase A.
 - **Fault Device** - The faulted object.
 - **Distance** - The distance and the upstream object.
 - **GPS(X,Y)** - The coordinates of the fault.
4. Click **OK**. All existing fault locations are flagged as incorrect, and a new location is added that matches your entries.

Viewing Fault Events in the Work Agenda

See the preceding section for details on opening the Fault Location Analysis window from the Work Agenda.

Fault Current Events appear in the Work Agenda as follows:

- The **Status** column displays “F-NEW.”
- The **# Out** column (number of customers experiencing outage) is 0.
- The **Evt Type** is “FAULT.”
- The **Pred Type** is “Revised Prediction.”
- No phases are listed as out.
- All device-related fields, such as the control zone information, appear as they would for any other event.

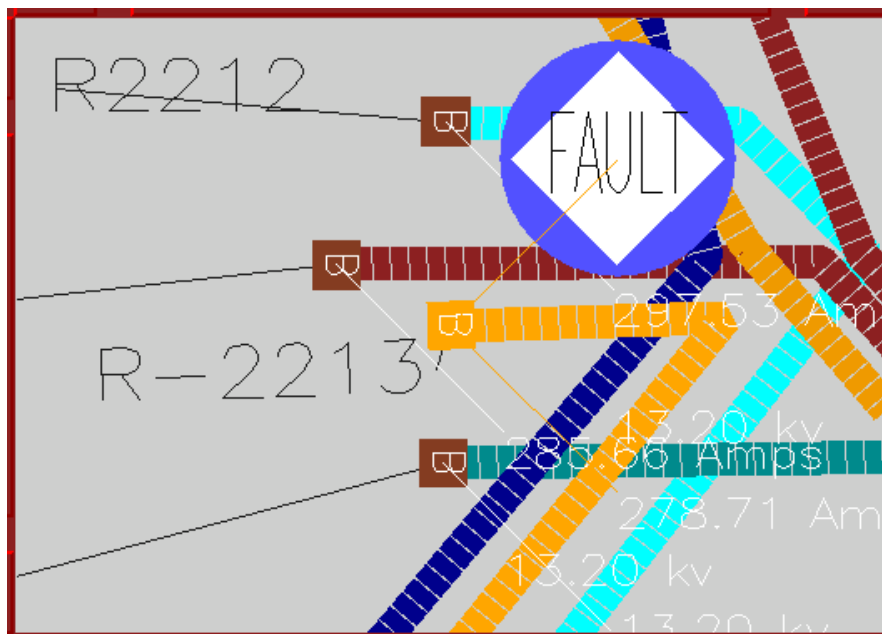
Viewing Fault Outages in the Viewer

You can select any device listed on the Fault Location Analysis window and display it in the Viewer. Right-click the device, then select **View...** from the pop-up menu. The following sections provide examples of how fault outages appear in the Viewer.

- **Fault Current Events in the Viewer**
- **Fault Indicator Call Symbols in the Viewer**

Fault Current Events in the Viewer

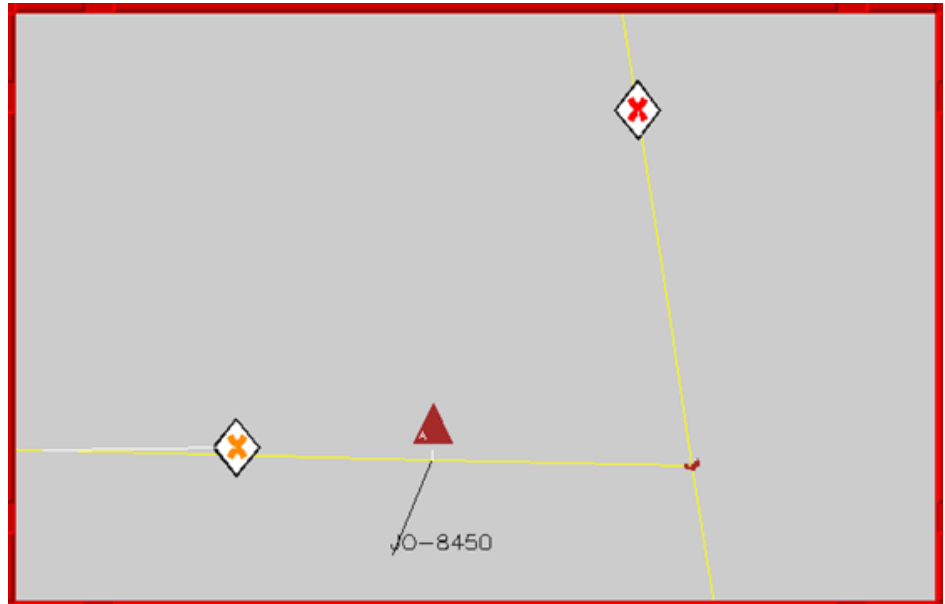
The following figure shows a fault current event as it appears in the Viewer:



Fault Indicator Call Symbols in the Viewer

Using fault current indication status measurements, device-specific fault current attribute data, and/or relay-calculated fault distances available via SCADA integration, the Fault Location Analysis tool identifies the faulted feeder section bounded by the last tripped fault current indicator status and the first (or set of first) downstream untripped fault indicator statuses correlated with the calculated fault distance.

Fault indicator symbols are displayed at the X/Y coordinates of the fault and have a leader line going to the midpoint of the conductor, as shown in the following figure:



Appendix A

Event Status and Event Type Codes

This appendix lists and describes coded information that appears in Oracle Utilities Network Management System screens, including:

- **Event Status Codes**
- **Event Type Codes**

Event Status Codes

Work Agenda Trouble Events Lists display the current status of each event listed. The event status is also displayed on the Call Information window. Below is a complete list of event status codes and their descriptions:

Status Code	Description
ASN	Crew is assigned to the event
C-CNL	Event has been cancelled by a “cancel call” trouble code, but a crew is still associated with the event. (You must then use the Cancel Event button to transition the event to CNL status.)
CMP	Event has been completed (job and event details are complete)
CNL	Event has been cancelled by a user (using the Cancel Event button in the Work Agenda window)
CRT	Acknowledged critical meet
ENR	Crew is en route to the event
F-ASN	Crew is assigned to the fault current event
F-CMP	Fault current event has been completed (job and event details are complete)
F-CNL	Fault current event has been cancelled
F-ENR	Crew is enroute to the fault current event
F-NEW	New fault current event
F-ONS	Crew is onsite at the fault current event
INC	Event has been completed, but information needs to be entered in the Event Details window

Status Code	Description
M-CMP	Momentary event has been completed (job and event details are complete)
M-INC	Momentary event has been restored, but information needs to be entered in the Event Details window
M-NEW	New unacknowledged momentary event
MNP	Maintenance pending
M-RCVD	Momentary event was received by mobile system and receipt was acknowledged by the MQ adapter.
M-SNT	Unassigned (acknowledged) momentary event manually sent to the mobile system
M-UAS	Unassigned (acknowledged) momentary event
NEW	New unacknowledged event
NFY	Notify alarm
ONS	Crew is onsite at the event
P-CMP	Planned event has been completed (job and event details are complete)
P-INC	Planned job has been completed, but information needs to be entered in the Event Details window
P-NEW	New unacknowledged planned event
P-RCVD	Planned event was received by mobile system and receipt was acknowledged by the MQ adapter.
P-SNT	Unassigned (acknowledged) planned event manually sent to the mobile system
P-UAS	Unassigned (acknowledged) planned event
RCVD	Order was received by mobile system and receipt was acknowledged by the MQ adapter.
RED	New critical meet
RSCH	Rescheduled meet
RST	Event has been restored and a crew is still associated with the event
S-ASN	Crew is assigned to the SCADA event
S-CMP	SCADA event has been completed (job and event details are complete)
S-ENR	Crew is en route to the SCADA event
S-INC	SCADA event has been completed, but information needs to be entered in the Event Details window
S-MNP	Maintenance pending (SCADA event)
S-NEW	New unacknowledged SCADA event

Status Code	Description
SNT	Unassigned (acknowledged) event manually sent to the mobile system
S-ONS	Crew is onsite at the SCADA event
S-RCVD	SCADA event was received by mobile system and receipt was acknowledged by the MQ adapter.
S-RST	SCADA event has been restored and a crew is still associated with the event
S-SNT	Unassigned (acknowledged) SCADA event manually sent to the mobile system
S-SUS	Crew has been re-dispatched to another event, but is still assigned to this SCADA event
S-UAS	Unassigned (acknowledged) SCADA event
SUS	Crew has been re-dispatched to another event, but is still assigned to this one
UAS	Unassigned (acknowledged) event
VFY	A probable service outage is in this state if the AMR system reports that the meter at the outage location has power. This state provides an indication for the operator to verify that the customer indeed is out of power.
W-ASN	Crew is assigned to the switching job
W-CMP	Switching job has been completed (the corresponding switching plan has been completed)
W-CNL	Switching job has been cancelled (the corresponding switching plan has been rescheduled)
W-ENR	Crew is en route to the switching job
W-ONS	Crew is onsite at the switching job
W-RCVD	Switching job was received by mobile system and receipt was acknowledged by the MQ adapter.
W-SNT	Unassigned (acknowledged) switching job manually sent to the mobile system
W-SUS	Crew has been re-dispatched to another event, but is still assigned to this switching job
W-UAS	Unassigned (acknowledged) switching job

Event Type Codes

Event Type codes are displayed on the Trouble Call Entry Lists. Below is a complete list of event type codes and their descriptions:

Event Type Code	Description
CSCO	confirmed secondary outage
CSVO	confirmed service outage
FUZZY	fuzzy event
NFY	notify alarm
NON	non-outage
PDO	probable device outage
PLAN	planned outage
PMO	probable momentary outage
PSO	probable service outage
RDO	real device outage
RMO	real momentary outage
MEET	meet
SWP	switching job

Appendix B

Color Coding

This appendix lists and describes color coding that appears in Oracle Utilities Network Management System screens, including:

- **Crew Status**
- **Conductor Symbolology**
- **Event Status**
- **Callback Status**
- **Feeder/Device Conditions**

Note: All color coding is configurable and your site may use different colors than those shown in this appendix.

Crew Status

The table below describes the default color coding used on the Crew Actions and Crew List windows to indicate crew status. These colors are also used for AVL crew symbols in the Viewer.

Color	Crew Status
Green	En Route, Onsite. In Web Trouble Management, Onsite status is displayed in the same green color as En Route status. In the Operator's Workspace Trouble Management, Onsite status is displayed in dark green, as shown below.
Dark Green	Onsite (Operator's Workspace Trouble Management only)
Yellow	Unavailable
Cyan	Assigned
Orange	Suspended
White	Available

Event Status

The table below identifies the color coding used on the Work Agenda list to indicate the event status.

Row Color	Event Status
White text on dark red background	NEW
White text on light red background	M-NEW
White text on red-orange background	P-NEW
White text on red background	S-NEW
White text on bright red background	RED
Red text on white background	NFY
Black text on yellow background	SNT
	UAS
Black text on pale yellow background	M-SNT
	M-UAS
Black text on gold background	P-SNT
	P-UAS
	W-SNT
	W-UAS
Black text on dark gold background	S-SNT
	S-UAS
Black text on cyan background	ASN
	S-ASN
	W-ASN
Black text on green background	ENR
	S-ENR
	W-ENR
Black text on dark green background	ONS
	S-ONS
	W-ONS
White text on blue background	RST
	S-RST

Row Color	Event Status
Black text on gray background	CMP
	P-CMP
	W-CMP
	S-CMP
	M-CMP
Black text on orange background	SUS
	S-SUS
	W-SUS
White text on purple background	INC
White text on orchid background	P-INC
Black text on plum background	S-INC
White text on violet background	M-INC
Black text on white background	MNP
	S-MNP
Black text on light green background	C-CNL
White text on brown background	CNL
	S-CNL
	W-CNL

Conductor Symbology

In the Viewer, conductor symbology changes color and line style (e.g., pattern, thickness) for different types of conductors and topology states. Conductor symbology is configurable. The following table shows the default color coding used for conductor symbology:

Color/Pattern	Description
Red	A Phase
Yellow	B Phase
Blue	C Phase
White	De-energization
Thick light blue	In Trace mode, indicates a conductor that is part of the path from a selected device
Thick dark pink	Grounded
Thick dark red	Different color codes for individual phases
Magenta	Loop, bi-directional flow

Color/Pattern	Description
Purple	Parallel
Gray	Partial energization
Solid	Overhead
Dashed	Underground

Callback Status

The Callback Status field on the Perform Callbacks List Window and the Perform Next Callback window is color-coded to indicate whether a callback attempt has been made and the result of the last attempt. The following table shows the default color coding used for callback status:

Color	Description
White	Not Called - indicates you have not yet called the customer (default). The callback remains in the callbacks list.
Blue	Restored - indicates the customer confirmed their service was restored. The callback is considered complete and is removed from the callbacks list the next time it is brought up.
Red	Not Restored - indicates you called the customer, and the customer indicated that service was not restored. The callback is considered complete and is removed from the callbacks list the next time it is brought up. The call is re-introduced into the Oracle Utilities Network Management System for re-analysis and restoration and a new callback will be generated when that event is restored.
Green	Indicates one of the following: No Answer - indicates you attempted to reach the customer, but nobody answered the telephone. The callback remains in the callbacks list. Busy - indicates you attempted to reach the customer, but the line was busy. The callback remains in the callbacks list.
Brown	Cancel - cancels the callback. The callback is considered complete and is removed from the callbacks list the next time it is brought up.

Feeder/Device Conditions

The Feeder Load Summary and Feeder Load Management windows use color coding to indicate violations or warnings associated with feeders and devices. The following table lists the feeder/device condition names and colors ranked from the worst problem to normal condition.

Condition Rank	Condition Name	Condition Color
0.	Normal	Black text on Green background
1.	Backfeed Warning	Black text on Yellow background
2.	Not currently used.	
3.	Under Voltage Warning	Black text on Yellow background

Condition Rank	Condition Name	Condition Color
4.	Over Voltage Warning	Black text on Yellow background
5.	Switch Overload Warning	Black text on Yellow background
6.	DistTrans Overload Warning	Black text on Yellow background
7.	Feeder Capacity Warning	Black text on Yellow background
8.	Conductor Overload Warning	Black text on Yellow background
9.	PowerTrans Overload Warning	Black text on Yellow background
10.	Not a valid violation type, used to distinguish between warnings and violations	
11.	Backfeed	Black text on Light Gray background
12.	Not currently used.	
13.	Under Voltage	Black text on Light Brown background
14.	Over Voltage	Black text on Gold background
15.	Switch Overload	Black text on Cyan background
16.	DistTrans Overload	Black text on Magenta background
17.	Feeder Capacity	Black text on Pink background
18.	Conductor Overload	White text on Orange background
19.	PowerTrans Overload	White text on Red background
20.	Model Error	Black text on Red background

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