Oracle Utilities Network Management System

OMS for Water User's Guide

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Preface

This guide describes how to use the Oracle Utilities Network Management System. It provides instructions for completing common tasks and provides descriptions of the fields, windows, buttons, and menus you will use to perform those tasks. The instructions and descriptions in this guide are based on the default product configuration for a user with full authority to use all functionality. Because the system is highly configurable, your system may look and behave differently.

Audience

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

Related Documents

For more information, see the following documents:

- *Oracle Utilities Network Management System Installation Guide*

- *Oracle Utilities Network Management System Quick Install Guide*

- *Oracle Utilities Network Management System Configuration Guide*

- *Oracle Utilities Network Management System Adapters Guide*

Integration Guides

The following guides provide additional information for use when integrating with other Oracle Utilities applications.

- *Oracle Utilities Network Management System – Mobile Workforce Management Interface Implementation Guide*

- *Oracle Utilities Network Management System – Mobile Workforce Management Interface User 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.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Chapter 1

Web Workspace

This chapter describes the Oracle Utilities Network Management System (NMS) Web Workspace application. It includes the following topics:

- **Getting Started with Web Workspace**

- **Using the Work Agenda**

- **Using the Viewer**

- **Using the Control Tool**

- **Condition Summaries**

- **Using the Alarms and Assets Lists**

- **Using the User Log**

Getting Started with Web Workspace

The **Web Workspace** is a real-time application that provides the toolsets and views that are the foundation of the NMS user environment. The common features and platform provided by the Web Workspace provide a cohesive user experience for NMS application modules, such as Outage Management or Web Switching Management. This section provides information on common Web Workspace features, including the following topics:

- **Launching the Web Workspace and Logging In**

- **Understanding the Web Workspace Window**

    - **Common Features**

    - **Menus and Toolbars**

    - **Annunciators**

- **Window Positioning and Sizing**

    - **Moving Windows**

    - **Adjusting Window Size**

- **Working with Tables**

- **Sorting and Filtering Data**

- **Printing**

- **Taking Authority for Control Zones**

- **Creating an Event**

Launching the Web Workspace and Logging In

Launching the Web Workspace

Depending on your system installation, Web Workspace is typically accessed by an URL (provided by your NMS implementation team) or through shortcuts installed on your desktop or in your application menu (*e.g.*, the Microsoft Windows® Start menu or Linux Applications menu). Use the installed shortcuts, if applicable, or open the URL in a web browser to launch the application. The NMS will begin downloading *Java* components of the Web Workspace to your computer. The Web Workspace Login window will open.

Logging In

1. To log in, enter the following information in the Login window:

    User ID: enter the user name provided to you by your system administrator.

    Password: enter the password provided to you by your system administrator.

    Validate: click the **Validate** button to verify your login credentials.

    > **Note:** If your user name and password are not entered correctly, the system will display a "Login Error" message.

    Once you have entered your user name and password, the **Validate** button will become activated.

2. Click **Validate** (or press **Enter** while in the password field) to validate your credentials.

3. Select **User Type** from the drop-down menu to determine what tools and functions will be available to you. See **User Types** on page 1-2 for more information.

4. Once the login criteria have been entered, click the **Login** button to complete the login process and open the Web Workspace. The Web Workspace *view* is based on the selected User Type.

5. The **Quit** button closes the Login window and exits the NMS.

User Types

User type determines which Web Workspace environment will be displayed when you log in.

*   **Administration:** provides the full Web Workspace complement of tools with additional tools and functions to change operational parameters.

*   **Crew Operations:** provides a limited workspace with only the tools necessary for crew administration functions.

*   **Full Operations:** provides operational access to all Web Workspace tools.

*   **Full Operations plus Switching:** provides operational access to all Web Workspace tools plus the Web Switching Management tools.

*   **Trouble Maintenance:** provides a limited workspace with tools necessary for outage management functions.

*   **Switching Request:** provides access to the Web Switching Request environment with only the tools necessary to create switching requests.

*   **View Only:** provides read-only access to the operational environment.

Understanding the Web Workspace Window

Web Workspace features and functionality are accessed through menus and toolbar buttons. A particular configuration of a user type's environment determines whether a tool is displayed as a window when you first log in to the system.
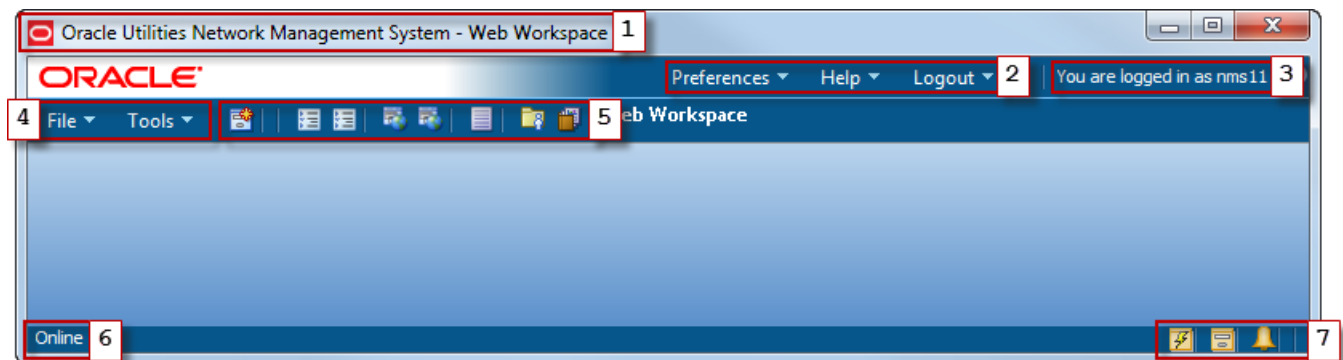
Web Workspace without any tools displayed.
Annotations:

1. Title Bar

2. Preference, Help, and Logout Menus

3. Login Information

4. File and Tools Menus

5. Toolbar

6. System Status Indicator

7. Annunciators

Common Features

There are several features that are common to nearly all Web Workspace windows:

- **Title Bars** display the name of the tool or dialog.

- **Menus** provide access to tools and user 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.

  - **Sort** and **Filter** menus allow you to modify how table data is sorted and filtered.

  - **Actions** menus provides access to features that are almost always specific to a particular window. Frequently used options on the Actions menu are often repeated as toolbar buttons.

  - **Help** menus provide access to information relevant to that window.

- **Toolbars** provide quick access to common functions. Toolbar buttons are used to perform an action or open a window. Button actions often correspond to **Action** menu options.

- **Right-Click Option Menus** provide many of the actions available through the Actions menus and toolbar buttons.

- **Annunciators** (or indicators) provide visual cues to system state or something that needs your attention.

- **Table columns** may be reordered by dragging the column (by its header) to a new position.

Menus and Toolbars

This section describes the menu and toolbar options. In the tables below, each menu item is listed along with submenu options, if available, and the default toolbar icon, if applicable; menu items without a default toolbar icon are indicated with a double dash (--) in the toolbar icon cell.

> **Note**: Menu and toolbar options vary depending on your user type, your system configuration, and licensed products.

File Menu

Menu Option	Submenu Option	Description	Toolbar Icon
New	Switching Sheet... (Ctrl+N)	Opens the **New Switching Sheet** tool that allows you to create a new switching sheet based on switching event type (for example, planned or emergency).	
	Safety Document...	Opens the **New Safety Document** tool that allows you to create a new safety document from a set of predefined types.	
	Event...	Opens the **Create Event** tool that allows you to create a new outage or non-outage event.	
	Damage Assessment...	Opens a new **Damage Assessment** document window. See **Creating Fuzzy Damage Assessments** on page 2-18 for information.	
Open	Switching Sheet... (Ctrl+O)	Allows you to open a switching sheet.	
	Switching Sheet Search...	Allows you to search for a switching sheet. By default, the search field searches against the switching sheet number and description fields. See **Open Switching Sheet using Switching Sheet Search** on page 3-64.	
	Safety Document...	Allows you to open a safety document.	
	Safety Document Search...	Allows you to search for a safety document. By default, the search field searches against the safety document number and description fields. See **From the Web Workspace Search Safety Document Dialog** on page 3-90.	

Tools Menu

Menu Option	Submenu Option	Description	Toolbar Icon
Work Agenda 1...		Opens the Work Agenda. See **Using the Work Agenda** on page 1-21.	
Work Agenda 2...		Opens a second Work Agenda.	
Viewer 1...		Opens the Viewer. See **Using the Viewer** on page 1-31.	
Viewer 2...		Opens a second Viewer.	
Condition Summaries...		Opens the Condition Summaries. Predefined filters include: • All Conditions • Notes • Pending Construction • Pending Decommission • Tags	
SCADA Summary...		Displays the SCADA Summary.	--
Alarms and Assets List	Abnormal Assets List...	Displays a list of off-nominal assets in the subscribed authority zones. See **Abnormal Assets List** on page 1-78.	--
	Asset Operations List...	Displays all recent operations performed in the user's control zones. See **Asset Operations List** on page 1-78.	--
	SCADA Alarms List...	Displays a list of all SCADA alarms in the subscribed authority zones. See **SCADA Alarms List** on page 1-78.	--
	System Alarms List...	Displays a list of system alarms. See **System Alarms List** on page 1-79.	--
Authority...		Opens the Authority tool, which grants control authority to users subscribing to discrete operations zones. See **Taking Authority for Control Zones** on page 1-17.	--
Crews...		Opens the Crew Actions tool, which shows the crews available in the subscribed control zone. See **Managing Crews with Web Trouble** on page 2-24.	--
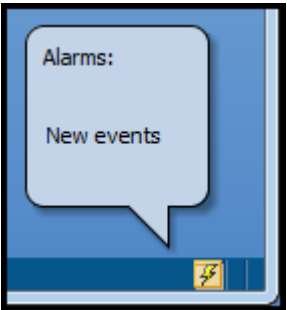
Menu Option	Submenu Option	Description	Toolbar Icon
Switching Overlaps...		Opens the Global Overlaps tool. See **Viewing Global Overlaps** on page 3-95.	
Miscellaneous Log...		Opens the Miscellaneous Log. See **Using the Miscellaneous Log** on page 3-94.	
User Log...		Opens the User Log, which displays a list of all single-user actions within a certain time period. See **Using the User Log** on page 1-81.	
Manage Documents...		Opens the Manage Documents window, which allows you to associate documents to objects. See **Associating Documents with Assets** on page 1-68.	

Preferences Menu

The **Preferences** menu allows you to control certain common features of the Web Workspace.

Menu Option	Description
Smaller Font (Ctrl+Minus Sign)	Decreases the font size in text and icons. Repeat to further decrease the font size.
Bigger Font (Ctrl+Plus Sign)	Increases the font size in text and icons. Repeat to further increase the font size.
Reset Font (Ctrl+0)	The application will reset the text and icons to use their default font size.
Darken Watermarks (Ctrl+W)	Make the watermarks more opaque.
Lighten Watermarks (Ctrl+Shift+W)	Make the watermarks more transparent.
Show Watermarks	Check to turn on watermarks. See **Watermarks** on page 1-8.
Save Preferences	Saves the current settings as the user's preference. See **Saving Workspace Preferences** on page 1-10 for details.
Restore Preferences	Restores the environment preferences to the default settings.
Audio Enabled	Un-check to turn off audible alarms.

Menu Option	Description
Alarm Popups	Check to turn on popup alarms.

Color Coding Options

The color coding options determine how table data and related views are color coded in tools that support color coding of data.

• **Disable Coloring**: disables table cell and row coloring.

• **Enable Cell Coloring**: enables table **cell** coloring.

• **Enable Row Coloring**: enables table **row and cell** coloring.

Help Menu

Menu Option	Description
Web Workspace Help (F1)	Launches the online help system and loads the Web Workspace content.
Web Switching Help	Launches the online help system and loads the Web Switching Management content.
Email Log Files... (Ctrl-Shift-M)	Gathers the environment's log files and attaches them to a new email message using your default email client. The log files can then be sent to your support team or contact for further analysis.
Set Debug... (Ctrl-Shift-D)	Launches the Set Debug dialog allowing you to set debug on or off within your current environment. This is used for debugging and analysis purposes. See **Setting Debug** on page 5-30 for more information.
Calculate Network Latency...	Runs a network diagnostic utility and returns the results in the **Network connectivity results** window.
About Web Workspace	Opens a window with environment and software information.

Logout Menu

The **Logout** menu includes the Logout User function. Once selected, you will be unsubscribed from any subscribed control zones and all open windows will close. The Web Workspace Login window is redisplayed. Click **Quit** to exit the system.

Annunciators

Annunciators are a combination of symbolic and text-based notifications of system statuses. In the base environment, annunciator alerts are displayed for:

- **Unacknowledged Outage Events** (⚡). See **Acknowledging Events** on page 1-30 for details on responding to new events.

- **Unacknowledged Non-Outage Events** (▤). See **Acknowledging Events** on page 1-30 for details on responding to new events.

- **Unacknowledged System Alarms** (🔔). See **Using the Alarms and Assets Lists** on page 1-76 for details on viewing and acknowledging system alarms.

- **System Offline**. Text notification that the system is offline.

    Note: Additional annunciators may be added on a per implementation basis.

Watermarks

Watermarks are used to show the environment that you are in. The semi-transparent text provides information about the system you are on. You may toggle watermarks on or off through the Preference menu, which also allows you to lighten or darken the watermark.

Window Positioning and Sizing

Web Workspace tool windows may be moved and sized in many ways within or outside of the Web Workspace primary window. The window positioning at startup is determined by the product or project configuration, but each user may move and size windows to support their workflow and preferences.

Moving Windows

To move a window, click the window tab and drag the window to the desired location either within the Web Workspace or on the desktop. When moving windows with the Web Workspace, the window can be docked to a side (top, bottom, left, or right) or to a tab connected to another pane.
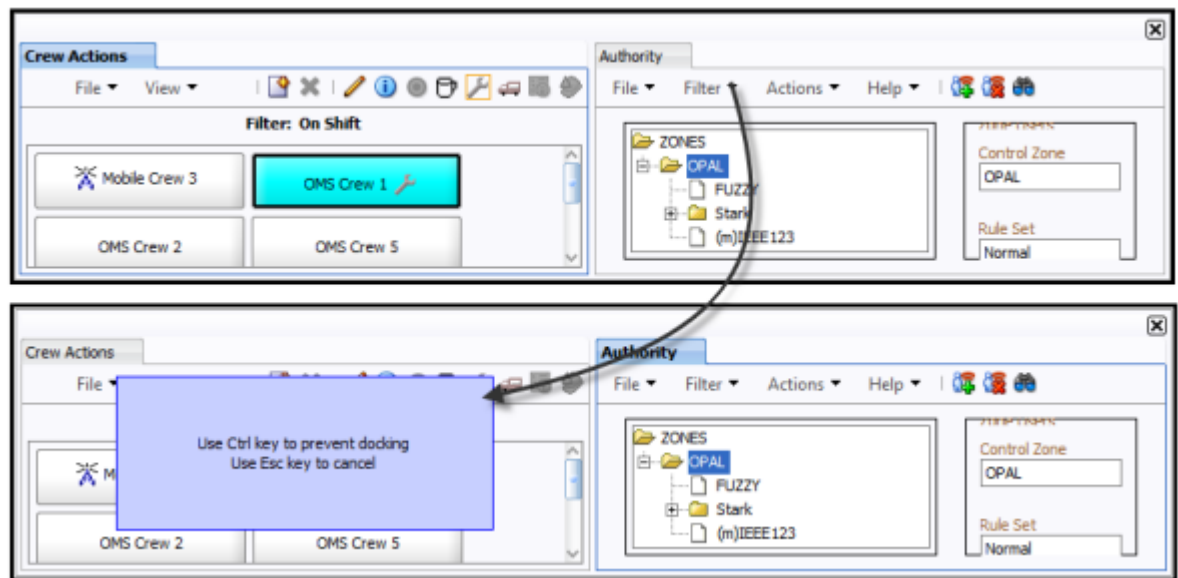
If you drop a window in the middle of an existing window, as shown above, it displays as a tab of the existing window:
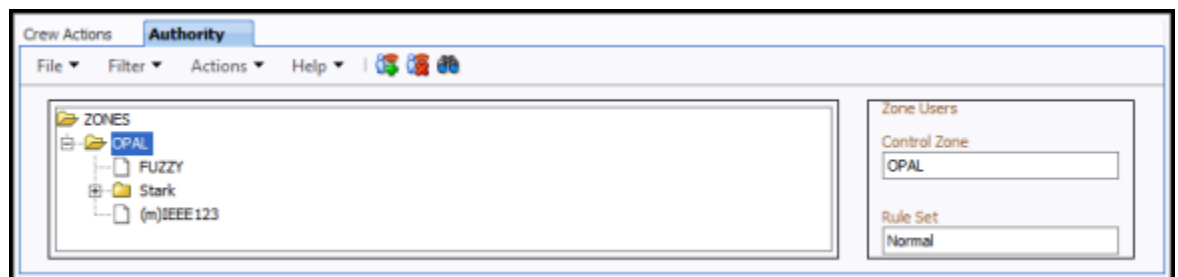
If you do not want a window (or window group) to dock to other windows or positions in the Web Workspace, drag the window away from other windows until it does not snap to a location; alternatively, if you press the Control key as you release the mouse, the window will not dock.

Adjusting Window Size

Resizing windows in NMS is equivalent to resizing an application window in Microsoft Windows or Linux. You may resize by clicking and holding a window edge and dragging until the window is the desired size; minimize by clicking the minimize button in the upper right corner of the window; maximize either by double-clicking the top of the window frame or by right-clicking and selecting **Maximize**. Depending on the windows state, right-click options will allow you to minimize, float, move, or dock the window. The Size right-click option displays the windows dimensions, in pixels.

Saving Workspace Preferences

Web Workspace starts with a standard configuration for window locations and sizes, font sizes, visible tools, and tool settings, such as column size and order. You can make adjustment to the workspace and then save those changes for future sessions.

To save your preferences, select **Save Preferences** from the Web Workspace **Preferences** menu.

Preferences are saved as follows:

Windows

The currently open windows are saved and reopened when you login. This feature is restricted to the following windows:

- Condition Summary
- Crew Actions
- Viewer 1
- Alarms and Assets List
- SCADA Summary
- Work Agenda 1

Table Attributes

- Column widths
- Column ordering
- Locked columns
- Current sort
- Current filter

Non-Docked Window Attributes

- Size
- Placement (does not apply to dialog boxes)

Viewer Settings

- Unload on Focus
- Fixed Size
- Search Type
- Search Case
- Search Max Results
- Spatial Landbase
- Declutter
- Predicted Highlight Enable
- Pipe State Highlight

> **Note:** to save user preferences for switching tools, each switching plan type (*e.g.*, emergency, planned, etc.) needs to be saved separately. Ensure that only one switch plan of each type is displayed when you save preferences.

Restoring Default Preferences

To restore the default environment settings, select **Restore Preferences** from the Web Workspace **Preferences** menu.

Working with Tables

Selecting and Unselecting Rows

Many tables in Oracle Utilities Network Management System applications and tools allow multiple rows to be selected for a subsequent action, such as acknowledging new events in the Work Agenda or new system alarms in the Alarms and Assets Lists.

Selecting a Single Row

To select a row, click anywhere in the row; the row will change to the selected highlight color.

Selecting Contiguous Rows

To select contiguous rows, click the first row, press **Shift**, and then click the last row to select the anchors and all rows in between.

Selecting Discontiguous Rows

To select discontiguous rows, select the first row, press **Ctrl**, and then click each additional row.

Unselecting Rows

To unselect a row, press **Ctrl** and then click any cell in the row. The highlight color will be removed. Note that the cell may have a highlighted border, but it is not in a selected state.

Copying Table Data

Many tables in Oracle Utilities Network Management System applications and tools allow data to be copied and pasted into other applications.

1. Select the row or rows to be copied.

2. Press **Ctrl+C** to copy the row data.

3. In the target application, such as a spreadsheet application, press **Ctrl+V** to paste the data.

Exporting Table Data

Many tables in Oracle Utilities Network Management System applications and tools allow data to be exported as comma separated values (csv) files. If the export option is available, it will typically be listed under the tool's File menu as **Export Table...** or the export table button ( ) will be available from the toolbar.

Sorting and Filtering Data

You can sort many Web Workspace data tables to display rows in a particular order or filter them to display a specific subset of the rows. Some of the Web Workspace tools also allow you to create your own user-defined sorts and filters. These options, if available, will be found in the tool's Sort and Filter menus or from an options menu when you right-click on the column heading.

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 Web Workspace tools 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 type will have their own set of sorts.

If a table supports user-defined sorts, select **Sort Dialog…** from the Sort menu or click the **Sort** button on the toolbar to display the Sort Dialog. You can also right-click the table header and then select **Sort...** from the pop-up menu.

The Sort Dialog displays the following items:

- The **Current Sort** drop-down menu presents a list of saved sorts for modification. When you select a sort from the list, the sort criteria are displayed.

- 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 **Help...** button display help for using the Sort dialog.

- The **Exit** button exits the Sort dialog.

- The **Current Sort** drop-down 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 or by right-clicking the table header and selecting **Sort...** from the pop-up 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.

Quick Sorting

You can sort the contents of a list by clicking on a column header. An icon indicates that the

column is being sorted; ascending (▲) or descending (▼) order.

Filtering

In addition to sorting, certain windows allow you to filter the data displayed. Filtering topics include:

- **Using the Filter Dialog**

- **Creating a User-Defined Filter**

- **Editing and Deleting Saved Filters**

- **Dynamic Filtering**

- **Auto Filtering**

Using the Filter Dialog

The Filter dialog 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 unless they have been saved; to save, select **Save Preferences** from the Web Workspace **Preferences** menu.

To display this dialog, select **Filter Dialog...** from the Filter menu. You can also right-click on the table header, and select **Filter...** from the pop-up menu.

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.

- **Filter Criteria**

    - **Column Name** displays the name of each column available in the table of data you are filtering.

    - The **Operator** column displays the type of filter.

    - The **Match 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.

- **Actions**

    - **Save...** opens a dialog box for naming and saving the current filter. Saving automatically applies the filter. You can subsequently retrieve saved filters through the Current Filter option menu and the Filter menu in the window.

    - **Delete** 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.

    - **Apply** applies the current filter settings to the table of data, but does not exit the Filter dialog box.

    - **Help...** displays help for the Filter dialog.

    - **Exit** closes 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 S**how Filter Dialog** from the Filter menu or by right-clicking the table header and selecting **Filter...** from the pop-up menu.

2. Click on the **Operator** drop-down menu of a column you want to filter by and select the option you want.

Operators

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 if the field value includes the some part of the filter value (*e.g.*, "Status" includes "tat"). **like** may also be used with Perl-style regular expressions. **Examples:** • To find values that match either X **or** Y, select **like** and enter X|Y in the **Match Value** field. • To find values that match X **and** Y, select **like** and enter (?=.*X)(?=.*Y) in the **Match Value** field. **Note:** There are many regular expression references, including books, web sites, and tutorials. For example: http://www.regular-expressions.info/tutorial.html.
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.

3. In the **Match Value** column next to the selected **Operator**, enter the desired filter value.

4. Repeat the two previous steps for any other columns you want to filter by.

5. Click **Save**. 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.

Dynamic Filtering
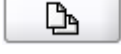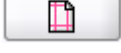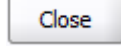
Some tables provide a row of blank filter boxes above the column headers. Enter all or part of the text you want to filter by in the appropriate filter box. The table data is dynamically filtered to display items that contain matching values as you enter the filter criteria. You can combine filter criteria by typing values in more than one column.

Auto Filtering

Some tables support auto filtering (also referred to as cell filtering), which allows you to filter the list by the value of any cell. To use auto filtering, right-click a cell containing the value you want to filter, and select the **Toggle Auto Filter** option. (When enabled, the menu option is checked.) The table is refreshed to display only rows where the value matches the selected cell. For example, if you click on a cell in the Pressure Zone column with a value of "2413" and enable auto filter, the table will refresh to display only events for Pressure Zone 2413. Click the option again to turn off cell filtering.

Printing

Printing is an option from several of the Web Workspace and Web Trouble windows. 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
◀	Used to preview the previous page in a multi-page output.
▶	Used to preview the next page in a multi-page output.
🔍	Used to zoom out on the contents of the preview.
🔍	Used to zoom in on the contents of the preview.
▭	Used to scale out the font used for the print output.
▭	Used to scale in the font used for the print output.
▯	Toggles the page orientation of the output between portrait and landscape.
▯	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.
▯	Reverts the preview window back to its default settings.
🖨	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.

Taking Authority for Control Zones

The Authority tool is used to manage permissions to view data and perform operations in the system. Permissions are granted to operate in *Control Zones*, which are discrete sections of a utility's distribution system. *Control Groups* are groups of control zones. You must subscribe to a control zone or a zone group to see events, manage crews, or perform asset operations in that section. Once subscribed, you can examine and change the assignment of control zones, view control areas within the distribution system, and identify which users have authority over each section. This section provides information on using the **Authority tool**, including the following topics:

- **Using the Authority Tool**
- **Subscribing to a Control Zone**
- **Subscribing to an Authority Group**
- **Unsubscribing from a Control Zone**
- **Searching for a Zone**

Using the Authority Tool

If the Authority tool is not visible in the Web Workspace, select **Authority...** from the Web Workspace **Tools** menu.

Authority Tool Fields

The Authority tool has the following fields:

- The **Zones** area displays control zones or control groups.
- **Zone Users** displays the users that are currently subscribed to the selected control zone. If no user is subscribed to the selected control zone, the Zone User will be `system`.
- **Control Zone** displays the currently selected control zone.
- **Rule Set** displays the rule set currently being used.

    Note: Rule Sets are operating conditions, such as *Normal* or **Storm**, that are typically set by Administrators or Shift Supervisors.

Authority Tool Menus

File Menu

Menu Option	Description	Toolbar Icon
Exit	Closes the Authority tool window.	--

Filter Menu

Menu Option	Description	Toolbar Icon
All Zones	Shows all Control Zones in the tree structure.	--
My Zones	Shows all Control Zones controlled by you.	--
Users' Zones	Shows Control Zones that are controlled by users/ operators.	--
System Zones	Shows control zones that are controlled by the System.	--
Zone Groups	Shows the Zone Group table, which allows you to subscribe to or view zone groups.	--

Actions Menu

Menu Option	Description	Toolbar Icon
Subscribe...	Opens the Subscribe window that allows you to subscribe to Control Zones or Control Groups.	
Unsubscribe...	Allows you to unsubscribe from subscribed control zones.	
Zone Search	Allows you to search for a control zone in the control hierarchy.	
Change Rule Set...	Allows you to change the operations rule set.	--

Help Menu

Menu Option	Description	Toolbar Icon
Authority Help	Opens the online help system to the Authority tool help content.	--

Subscribing to a Control Zone

With the Authority tool filter set to All Zones, the Authority tool lists all control zones in a hierarchical tree view. You may subscribed to an individual control zone, which is represented by a page icon ( ), or a zone collection, which is represented by a folder icon( ).

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

1. Expand the list of Control Zones to locate the zone you want to control.

2. Select the row for the zone or zone folder. The zone will populate the Control Zone field.

   • To select multiple adjacent zones, press **Shift** and click the first and last zones to select all of the zones in that range; to select multiple non-adjacent zones, press **Ctrl** and click each zone individually.

3. Click the **Subscribe** button ( ), select **Subscribe...** from the **Actions** menu, or right-click and select **Subscribe...** from the options menu. The Subscribe dialog box opens.

4. Click **Subscribe** in the dialog box. You are now subscribed to the selected zones.

Subscribing to an Authority Group

To subscribe to a Authority Group, first select Zone Groups from the Authority tool's Filter menu to view the Authority Group table and then complete these steps:

1. Select one or more rows from the Authority Group table. If the list of Authority Groups is long, you may use the filter box above the Authority Group title to find the desired group.

2. Click the **Subscribe** button ( ), select **Subscribe...** from the **Actions** menu, or right-click and select **Subscribe...** from the options menu. The Subscribe dialog box opens.

3. If applicable, deselect any control zones in the Authority Group that you do not wish to subscribe to.

4. Click **Subscribe**. You are now subscribed to the selected zones.

Unsubscribing from a Control Zone

When you are finished working in a control zone, you can unsubscribe from the control zone.

> **Note:** remember that you are automatically unsubscribed to all of your control zones when you logout.

To unsubscribe, complete these steps:

1. Select **My Zones** from the Filter menu.

2. Select the row containing the zone that you want to unsubscribe from. The zone will populate the Control Zone field.

3. Click the **Unsubscribe** button ( ) in the toolbar, select **Unsubscribe...** from the **Actions** menu, or right-click and select **Unsubscribe...** from the options menu. The Unsubscribe dialog box opens.

4. Click **Unsubscribe** 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 (🔍) in the toolbar or select **Zone Search...** from the Actions menu. The 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 **Find Next** to locate the next control zone that matches your search criteria.

4. When you locate the zone you want, click the **Cancel** button to close the Search Tool dialog box.

Creating an Event

If a crew in the field discovers an event that has not been identified by a customer, you may use the **Create Event** tool to add the event to the NMS.

To open the Create Event window, select **New** and then **Event...** from the Web Workspace **File** menu. Alternatively, you may click the 🗒️ button on the Web Workspace toolbar.

The Create Event window displays the following fields and buttons:

*   The **Selected Asset** field displays the name of the asset 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** and **Non-Outage** options 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 asset and closes the Create Event window.

*   The **Help** button displays help for the current window.

*   The **Cancel** button closes the Create Event window without creating a new event.

Using the Work Agenda

The Work Agenda displays event (or work) data. These events vary based on the modules and interfaces that have been implemented, but may include switching actions (with Switching Management), outage events (with Outage Management), etc. Events may be in various states, such as *New*, *In Progress*, *Incomplete*, or *Complete*.

This section includes the following topics:

- **Opening Multiple Work Agenda Windows**

- **Work Agenda Views**

- **Work Agenda Menu and Toolbar Features**

- **Work Agenda Data Fields**

- **Acknowledging Events**

Opening Multiple Work Agenda Windows

You can open more than one Work Agenda. To open a new Work Agenda, select the **Work Agenda 1** or **Work Agenda 2** option from the Web Workspace **Tools** menu. The new Work Agenda displays as a tab next on the Web Workspace window, to the right of any existing Work Agenda tabs.

When you select a row in one Work Agenda window, the system automatically selects the row for that event in all other Work Agendas (if the row is not being filtered).

All Work Agendas are subscribed at the same level as the original Work Agenda and other tools, but can have their own dynamic sorts and filters applied. The selected events are shared across the Work Agendas.

Work Agenda Views

Work Agenda *views* are filters based on event type and/or status. These filtered views are referred to as *lists* and the list name is displayed on the Work Agenda tab. For example, in the standard NMS product offering, the Web Workspace starts with Work Agenda open in the **To Do** list view, which displays all new and unassigned events that require attention, and the tab is labeled "Work Agenda: To Do."

> **Note:** the Work Agenda does not display any events until you take authority of a control zone (see **Taking Authority for Control Zones** on page 1-17).

Each row of the Work Agenda contains information about an event. A summary row at the top of the Work Agenda displays summary counts for all of the events listed in the current view.

The Work Agenda is configured with several different views that can be selected through the Filter menu or toolbar icons.

Work Agenda Menu and Toolbar Features

This section lists and describes the menu options and toolbar icons available in the Work Agenda.

File Menu - The table below describes the options available on the File menu.

Menu Option	Description	Toobar Icon
Export Table...	Opens a dialog to allow you to save the current table view data to a comma separated value (csv) file.	
Print	Displays the Print Preview dialog so you can view or print the list.	
Print Reading Pane	Displays the Print Preview dialog so you can view or print the Reading Pane.	
Print Preview Calls...	Opens the Report dialog that allows you to choose a preview type (*e.g.*, PDF, HTML, etc.); click **Preview....** to display the calls report for the highlighted rows.	
Print Calls...	Opens the Report dialog that allows you to choose a report type (*e.g.*, PDF, HTML, etc.) and printer for the highlighted rows; click **Print** to send the report to the selected printer.	
Email Calls...	Opens the Report dialog that allows you to choose the type of report (*e.g.*, PDF, HTML, etc.) to be generated for each highlighted row; click **Email...** to attach the calls to a new email message (using your default email application) that may then be sent to your chosen recipients.	
Exit	Closes the Work Agenda window.	--

Sort Menu - The table below describes the options available on the Sort menu.

Menu Option	Description	Toobar Icon
Sort Dialog...	Opens the Sort dialog, allowing you to create, modify, apply, and save user-defined sorts. See **Using the Sort Dialog Box** on page 1-12.	--
Default	Applies the default sort.	--

Filter Menu - The table below describes the options available on the Filter menu.

Menu Option	Description	Toobar Icon
Outages	Displays all outage events.	--
Non Outages	Displays all non-outage events.	--
Both	Displays both outage and non-outage events.	--
Filter Dialog...	Opens the Filter dialog where you can create, modify, apply, and save user-defined filters. See **Using the Filter Dialog** on page 1-13.	--
All	Displays all events of any status. **Note:** statuses are displayed in the Work Agenda **Status** column; see **Event Status Codes** on page B-1 for a complete list of status codes and descriptions.	
Completed	Displays all completed and cancelled trouble events. **Statuses:** `CMP, P-CMP, S-CMP, W-CMP, CNL, S-CNL, and W-CNL.` **Note:** See **Event Status Codes** on page B-1 for event status descriptions.	
Default	Applies the filter for the currently selected view.	--
In Progress	Displays most trouble events that have crew resources associated with them and any trouble event alarms. **Statuses:** `ASN, S-ASN, W-ASN, ENR, S-ENR, W-ENR, S-ONS, W-ONS, NFY, ONS, RSCH, RST, S-RST, SUS, S-SUS, W-SUS, and VFY.` **Note:** See **Event Status Codes** on page B-1 for event status descriptions.	
Incomplete	Displays all incomplete trouble events and events that have maintenance work pending. Incomplete events are events that are complete in the field but still require that **Event Details** be completed. **Statuses:** `INC, P-INC, S-INC, MNP, and S-MNP.` **Note:** See **Event Status Codes** on page B-1 for event status descriptions.	
Switching	Displays all events that have an associated planned switching sheet in a **Scheduled** (or later) status.	--
To Do	Displays trouble events that require attention and any trouble event alarms. **Statuses:** `CRT, C-CNL, NEW, P-NEW, S-NEW, NFY, RED, RSCH, SNT, P-SNT, S-SNT, W-SNT, UAS, P-UAS, S-UAS, W-UAS, VFY` **Note:** See **Event Status Codes** on page B-1 for event status descriptions.	

Actions Menu

The table below describes the options available on the Actions menu. It also indicates whether the option displays in a pop-up menu when you right-click a row in the Work Agenda.

Menu Option	Description	Toolbar Icon	Right-Click Y/N
Reading Pane	Splits the Work Agenda table to display a panel with the selected row's details.		N
Acknowledge	Acknowledges the selected event.	✔	Y
View...	Opens Viewer 1 if not already open, and then focuses Viewer 1 on the asset from the selected Work Agenda row.	◎	Y
Trouble Info...	Opens the Trouble Info window with information about the selected event.	☎	Y
Event Details...	Opens the Event Details window with information about the selected event.	ⓘ	Y
Referral...	Opens the Work Queue dialog, allowing you to select a work group to refer the event to and enter any necessary remarks.		Y
Release Crews...	Opens the **Release Crews** dialog box, which allows you to release assigned en route or onsite crews from an event. See **Releasing Crews from an Event Selected in the Work Agenda** on page 2-38 for more information.	--	Y
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).	--	N
Cancel Event...	Cancels the selected event. A dialog box opens prompting you for a reason for the cancellation.		Y
Group Events...	Opens the Group Events dialog box, which allows you to manually group, relate, and un-relate events.	--	N
Associate Event...	Allows you to associate the selected fuzzy event to an asset.	--	N
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, 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*.	--	N
Find Selection	Scrolls the currently selected event back into view should it scroll off of the list.	--	N

Menu Option	Description	Toolbar Icon	Right-Click Y/N
Auto Filter	Allows you to quickly filter the table by the selected cell value.	--	Y (toggle)
Auto Filter Off	Turns off any auto filter that has been applied.	--	Y (toggle)
Load Completed Events	By default, completed events are not loaded into the Work Agenda on startup for performance reasons. This action will open the Load Completed Events dialog.	--	N
Load Completed Events - Range...	Opens the Load Completed Events - Range dialog box, which allows you to filter completed events by a start and end date.	--	N
Load Completed Event…	Opens the Load Completed Event Dialog, which allows you to load a specific completed event by specifying its Event number (index).	--	N
Event Log...	Opens the Event Log window for the selected event.	--	Y
Switching...	Opens the **Open or Create New Switching Sheet** dialog, which allows you to create a new switching sheet or open a switching sheet associated with the selected event. See **Open or Create New Switching Sheet** on page 3-66 for more information.	--	N
Update ERTs...	Opens the Update ERT dialog so you can enter a new ERT for all selected events.	--	N
System-Wide Default ERT...	Opens the System-Wide Default ERT (estimated restoration time) dialog, which allows you to view and modify the system-wide default restoration time value. (Use the Configuration Assistant to set restoration times for specific control zone/asset class combinations.)	--	N
Damage Assessment…	Opens the Damage Assessments tool, which displays a list of damage assessments associated with the selected event and allows you to add additional damage assessments. See **Using the Damage Assessments Window** on page 2-18.	--	Y
Undo Grouping	Ungroups and repredicts all calls from an event. It may be used to undo the results of manual grouping or repredict upstream/downstream. This action is not allowed for events with crews. See **Ungroup Events** on page 2-13.	--	N
Show Event Note Balloon	Enables a balloon popup that displays event notes, if they exist.		Y

Help Menu - The table below describes the options available on the Help menu.

Menu Option	Description	Toobar Icon
Work Agenda Help (**F1**)	Opens the online help system to the Work Agenda tool help content.	--

Work Agenda Data Fields

The Work Agenda displays data in a summary row and an events list table.

Summary Row

The summary row tabulates data for the events in the displayed (filtered) events list.

- The **Total Events in View** field displays the number of events.

- The **Est Customers Out** field displays the number of customers estimated to be affected.

- The **Calls** field displays the number of calls received.

- The **Priority Calls** field displays the number of priority calls received.

- The **Emergency Customers Out** field displays the number of impacted emergency customers.

- The **Medical Customers Out** field displays the number of impacted medical customers.

- The **Key Customers Out** field displays the number of impacted key customers.

- The **Crews En Route/Onsite** field displays the number of crews en route or onsite.

The last three columns are based on the total counts (in your subscribed control zones) and, unlike the other Summary Row columns, ignore any filters:

- The **Priority To Do** field displays the number of priority jobs that are in the To Do list.

- The **Normal To Do** field displays the number of normal jobs that are in the To Do list.

- The **In Progress** field displays the number of in progress jobs.

Events List

The Events List provides a tabular view of events. The filter and sort criteria are displayed above the table; the Work Agenda tab displays the selected list view/filter (*e.g.*, To Do, All, In Progress, etc.).

Columns

- The first column displays event status symbols (*e.g.*, ✔ for Acknowledged events).

- The **Status** column displays the status assigned to the event. See **Event Status Codes** on page B-1 for a complete list of status codes and descriptions.

- The **Event #** column displays the number the system has assigned to the event.

- The **Pressure Zone** column displays the name of the pressure zone associated with the event.

- The **E/H** column indicates whether the event is an extreme emergency (**E**) or has hazardous (**H**) conditions.

- 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 **Run CMI** column contains the current *customer minutes interrupted* value for the event. Note that this value is automatically updated once a minute. By default, the CMI is 0 for restored events, but this can be customized

- 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 **Asset** column contains the name of the asset 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 pressure zone location of the asset if the event is an asset outage.

- The **Crew** column contains the crew ID of associated crews.

- 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 values for the ERT Source, from highest precedence to lowest, are as follows:

  - **C:** User-entered via applications or tools (for example, mobile interface, Work Agenda, Event Details, or Crew tools) other than Storm Management.

  - **G:** Storm Management published global ERT from the ERT Override dialog.

  - **D:** Storm Management published global ERT delay from the ERT Override dialog.

  - **P:** Storm Management non-published global ERT from the ERT Override dialog.

  - **M:** Maximum ERT exceeded. The Storm Management calculated ERT is beyond a set threshold for maximum ERT; no ERT is shown.

  - **O:** Storm Management onsite ERT calculated when the event status goes to en route and updated when the status changes to onsite.

  - **S:** Storm Management calculated ERT based on outages and crews in Storm Management

  - **I:** Initial default ERT, based on the system-wide default ERT (if set) or else configured default ERT based on asset class and control zone

  - **N:** none (no ERT)

- The **Prediction Type** column contains the type of prediction (*e.g.*, New, Revised, Asset 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 B-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 **Lift Station** column contains the control zone Lift Station where the event occurred.

- The **Plan #** column contains the switching sheet number associated with the event, if any. The switching sheet number is prefixed by the switching sheet type (such as "Plan" or "Emer").

- 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
  - 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 **Dmg Asmt** column displays whether a damage assessment is needed and, if so, the status of the damage assessment. Possible values are:

  - **None** – damage assessment is not required. This is the initial state for new events.

  - **Needed** – damage assessment is required for the event, but not yet started.

  - **Started** – damage assessment has been started for this event.

  - **Assessed** – damage has been assessed. .

- The **Appt Type** column indicates the type of appointment scheduled using the types in the Web Call Entry application.

- The **Appt Range** column indicates the window of time given for a scheduled meeting.

- The **Appt Date** is the date an appointment has been scheduled for a customer meeting.

- The **Wgt Out** column displays the sum of weighted priority values for all the customers experiencing an outage for the event. See **Using the Customer Administration Weighted Priority Editor** on page 5-31 for more information on weighted priority.

Filtering, Sorting, Selecting, and Locking Columns

When you right-click the events table header, a pop-up menu displays a list of options that allow you to perform the following functions:

Menu Option	Description
Filter...	Displays the Filter Dialog so you can create, modify, apply, and save user-defined filters. See **Using the Filter Dialog** on page 1-13.
Sort...	Displays the Sort Dialog so you can modify the default sort. See **Using the Sort Dialog Box** on page 1-12.
Select Columns...	Opens a dialog that displays a list of columns that can be displayed in the Work Agenda table. A checkmark appears next to columns that are currently displayed. To remove a column from the table, uncheck the box. To add a column that is not currently displayed, check the box. Click OK to exit. **Note**: These settings are applied immediately and affect only the current user session. To save these settings as the default view for the Work Agenda (for the currently logged-in user), select **Save Preferences** from the Web Workspace **Preferences** menu.
Unlock Columns	When the Work Agenda is first launched, the first four columns are locked in place so they stay in view as you scroll the table to the right. • You may unlock the columns by choosing **Unlock Columns** from the options menu. • With the columns unlocked, you may lock columns by right-clicking the column you wish to be the right-most frozen column.

The Work Agenda table supports **Quick Sorting**, **Dynamic Filtering**, and **Auto Filtering**.

Using the Work Agenda Reading Pane

The Work Agenda Reading Pane provides a summarized view of data for an event selected in the Work Agenda or Viewer.

Fields:

- **Event Information**

    - **Event #**: displays the number the system has assigned to the event.

    - **Start Date:** displays the date and time the event began.

    - **Est Restore Date:** the estimated restoration time (ERT) for the event.

    - **# Out:** the total number of customers experiencing an outage for the event.

    - **# Emergency:** contains the number of emergency customers experiencing an outage for the event.

    - **#Medical:** contains the number of medically urgent customers experiencing an outage for the event.

    - **# Key:** contains the number of key customers experiencing an outage for the event.

    - **# Calls:** contains the number of calls received for the event.

    - **Asset:** contains the name of the asset associated with the event.

    - **Zone:** contains the affected Control Zones.

- **Clues:** contains any clues associated with the event.

- **Switching Plan...:** click to open or create a new switching plan. Associated plans are listed in the field next to the button. See **Web Switching Sheets** on page 3-3.

- **Event Crews:** provides a crew data table with information about crews assigned to the event. See **Managing Crews with Web Trouble** on page 2-24.

- **Call Comments:** lists call comments.

- **Operations Event Note:** lists operations event notes. See **Using the Event Log** on page 2-23.

Acknowledging Events

To acknowledge an event, complete these steps:

1. Select the row of the event with NEW, S-NEW, P-NEW, or RED status in the Work Agenda Events List.

2. Click on the **Acknowledge** toolbar button ( ) or select **Acknowledge** from the Actions menu. The event becomes acknowledged and its status changes accordingly.

Using the 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**
- **Displaying Asset Details**
- **Viewing Asset Attribute Information from the Viewer**
- **Viewing the Color Legend**
- **Searching and Loading Viewer Maps**
- **Navigating in the Viewer**
- **Viewer Focus**
- **Using Lens Windows**
- **Real-Time and Study Mode**
- **Selecting AssetsIdentifying Symbology**
- **Hiding and Displaying Viewer Objects**
- **Executing Traces**
- **Using the Commissioning Tool**

Starting the Viewer

To open a Viewer, select the **Viewer 1...** option on the Web Workspace **Tools** menu. To start a second Viewer, select **Viewer 2...** After you have opened the Viewer, selecting the menu option will change the focus to that Viewer.

Understanding the Viewer

The following diagram shows the functional areas of the Viewer:
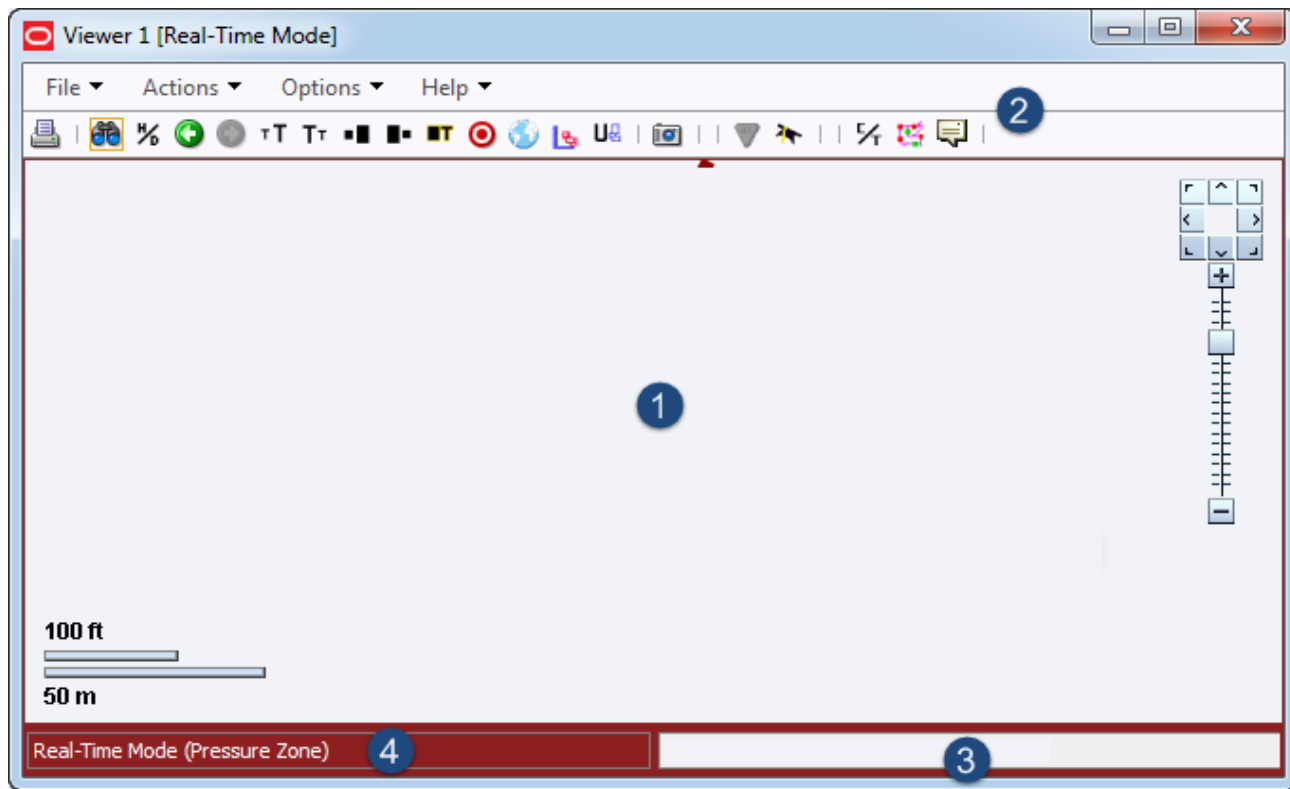
Viewer Functional Areas Legend:

1: **Drawing Area**

2: **Menus and Toolbar**

3: **Message Area**

4: **Real-Time and Study Mode Indicator with View Setting**

Drawing Area

The Viewer's drawing area displays dynamic maps that reflect the status of the system. The lines (used to represent pipes) and the icons (used to represent assets and conditions) are called *symbols*; the conventions that govern symbols are referred to as *symbology*.

Certain condition symbols, such as event type or note indicator, provide tooltips indicating the symbol's meaning. For example, as shown in the illustration above, the Note symbol's hover text is *Operator Note*.

If configured, the Viewer will dim the parts of the model that are outside of the user's authority. In those sections, the user will not be able to operate or otherwise modify those assets without taking authority using the Authority tool (see **Taking Authority for Control Zones** on page 1-17).

Message Area

The Viewer's message area displays asset aliases, pressure zone names, and lift station names.

Menus and Toolbar

The Viewer's menus and toolbars provide access to common functions.

File Menu

Option	Description	Toolbar Button
Print	Opens the Print Preview window, which allows you to print the contents of the Viewer window.	🖨
Exit	Exits the Viewer.	--

Actions Menu

Option (Keyboard Shortcut)	Description	Toolbar Button
Search	Opens the Search dialog box, which allows you to enter search criteria and execute a search in the Viewer.	🔍
Hide/Display...	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** on page 1-48.	H/D
Back	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 similarly to a web browser's back button, storing a dozen "views." However, the loaded maps, the hide/display layers, and other options will use the current settings.	◀
Forward	Moves to the next view if the **Back** button has been used. It functions similarly to a web browser's forward button. However, the loaded maps, the hide/display layers, and other options will use the current settings.	▶
Show Lens	Opens a Lens window zoomed in on selected asset. See **Using Lens Windows** on page 1-45.	--
Zoom In (**Z**)	Zooms in on the map to show a smaller area in more detail.	--
Zoom Out (**Shift+Z**)	Zooms out on the map to show a larger area.	--
Text Bigger (**Shift+T**)	Increases the text font size.	ᴛT
Text Smaller (**T**)	Decreases the text font size.	Tᴛ
Symbols Bigger (**Shift+S**)	Increases the size of symbols.	▪■
Symbols Smaller (**S**)	Decreases the size of symbols.	▪■

Option (Keyboard Shortcut)	Description	Toolbar Button
Attributes Farther (**Shift+A**)	Displays attributes (*e.g.*, flags, note symbols, etc.) away from the asset. Each subsequent action moves the attribute farther away.	--
Attributes Closer (**A**)	Displays attributes closer to the asset.	--
Reset Scale (**R**)	Resets the size of symbols and text to its default size.	∎T
Fixed Size	This mode will keep the symbol and text sizes the same regardless of the zoom level.	--
Focus	Focuses the Viewer on selected assets or assets associated with selected events. See **Viewer Focus** on page 1-44 for details.	◉
View Browser Map	Opens a web browser map to display the geographic area.	🌐
Pointer Coordinates...	Opens a dialog that displays the geographic coordinates for a selected object.	--
Load Maps (**M**)	Allows you to explicitly load additional maps to display more of the surrounding area or additional detail.	🗺
Unload Maps (**Shift+U**)	Unloads all maps, not just those in the visible drawing area.	U🗺
Unload Maps on Map Load	Selection that sets the Viewer to unload previously loaded maps before loading another map.	--
Commissioning Tool...	Opens the Commissioning Tool, which allows you to commission an asset that is currently in construction, or to decommission assets currently marked for removal.	--
Save View Area...	Saves the viewing area after prompting for a name for the saved area. If a view area already exists with that name, you will be asked if you want to replace it.	📷
Delete View Area...	Deletes the viewing area after prompting for confirmation.	--

Options Menu

Option	Description	Toolbar Button
Big Symbols (**Shift+B**)	Allows you to toggle Big Symbols on or off. Displays a checkmark if big symbols are currently displayed.	--
Real Time	If you are currently in Study mode, select this to switch to real-time mode. If you are currently in real-time mode, this is grayed out. For more information on real-time mode, see **Real-Time and Study Mode** on page 1-45.	
Study	If you are currently in real-time mode, select this to switch to Study mode. If you are currently in Study mode, this is grayed out. For more information on study mode, see **Real-Time and Study Mode** on page 1-45.	
Reset Study Session...	Resets the study session to either the current real-time model or the nominal model.	--
Close Study Session	Closes the current study session.	--

Help Menu.

Option	Description	Toolbar Button
Viewer Help (**F1**)	Opens online help content for the Viewer.	--
Color Legend	Opens the Viewer Legend window that displays information about the current view.	--
Highlight Legend	Opens the Viewer Highlight Legend window that displays information about the current view.	

Additional Toolbar Options

The following toolbar options do not have corresponding menu options:

Option	Description
⌐⁄ᴛ	The **Control Tool** button opens the Control Tool for the selected asset. The Control Tool may also be opened by double-clicking an asset or by right clicking the asset and selecting **Control Tool...** from the options menu. (See **Using the Control Tool** on page 1-56.)
	The **Trace** button opens the Trace tool window, set to the current asset. The Trace tool may also be started by right clicking the asset and selecting **Trace...** from the options menu. (See **Executing Traces** on page 1-49.)
	The **Asset Details** button toggles asset details on or off. Asset Details may also be toggled on or off by right clicking the asset and selecting **Asset Details...** from the options menu. (See **Displaying Asset Details** on page 1-40.)

Saving Viewer Preferences

When the Viewer options have been adjusted to render symbols, text, and window information as desired, select **Save Preferences** from the Web Workspace **Preferences** menu to save the options for subsequent sessions.

Context-Sensitive Pop-Up Menu Options

When you right-click certain objects in the Viewer window, a pop-up menu displays a list of options available for the object.

Crew Options

The following options are displayed when you right-click a crew symbol in the Viewer window; these options are only available for crews with AVL (Automatic Vehicle Location) systems.

Menu Option	Description
Assign	Assigns the crew selected in the Viewer to the event currently selected in Work Agenda. See **Assigning a Crew** on page 2-30 for more information.
En Route	Puts the crew selected in the Viewer en route to the event currently selected in Work Agenda. This is enabled only if the selected crew is an on-shift, available, non-mobile crew that is not currently en route or onsite. See **Placing a Crew En Route Using the Crew Actions Window** on page 2-30 for more information.
Release Crew	Releases the crew selected in the Viewer from the en route/onsite event selected in the Work Agenda. See **Releasing Crews from an Event** on page 2-38 for more information.
Update Availability...	Opens the Update Crew Availability dialog for the selected crew. See **Changing Crew Availability** on page 2-31 for more information.
Crew Info...	Opens the Crew Info dialog for the selected crew. See **Crew Info** on page 2-34 for more information.
Active Job Info...	Opens the Active Job Info dialog for the selected crew. This is enabled only if an en route or onsite crew is selected. See **Active Job Info** on page 2-36 for more information.

Event Options

The following options are displayed when you right-click an event symbol in the Viewer window:

Menu Option	Description
Event Details...	Opens the Event Details window for the event. See **Event Details** on page 2-1.
Trouble Info...	Opens the Trouble Info window for the event. See **Using the Trouble Info Window** on page 2-42.
Event Log...	Opens the Event Log window for the event. See **Using the Event Log** on page 2-23.
Damage Assessment...	Opens the Damage Assessment window. See **Working with Damage Assessments** on page 2-14.
Crew Info...	Opens the Crew Info window for the crew assigned to the selected event. See **Crew Info** on page 2-34.
Active Job Info...	Opens the Active Job Info window for the crew assigned to the selected event. This is enabled only if one crew is assigned to the event and is en route or onsite. See **Active Job Info** on page 2-36 for more information.

Menu Option	Description
Show En Route Location...	Shows the AVL location of the crew that is currently en route to the selected event. This option is only enabled when one crew is assigned to the event.
Release Crews...	Opens the Release Crews8 dialog. Enabled when one or more crew is assigned to the event. See **Releasing Crews from an Event Symbol in the Viewer** on page 2-39.

Asset Options

Depending on the asset type, the following options may be displayed when you right-click an asset in the Viewer window:

Menu Option	Description
Control Tool...	Opens the Control Tool for the selected asset. See **Using the Control Tool** on page 1-56.
Asset Details...	Displays the Asset Details balloon above the selected asset. See **Displaying Asset Details** on page 1-40.
Attributes...	Opens the Attributes window, which displays information about the selected asset. See **Viewing Asset Attribute Information from the Viewer** on page 1-41.
Open...	Initiates the Control Tool's Open command. See **Control Tool Actions** on page 1-57.
Close...	Initiates the Control Tool's Open command, if applicable. See **Control Tool Actions** on page 1-57.
Customer List...	Displays the Trouble Info Customers List. See **Customers View** on page 2-46 for more information.
Damage Assessment...	Opens the Damage Assessments window, which displays a list of damage assessments associated with the asset and allows you to add new damage assessments. See **Using the Damage Assessments Window** on page 2-18.
Toggle Call Display	Toggles call display on or off. When enabled, a symbol is displayed in the Viewer window for any asset that have calls associated with an event. Events with calls and clues will show the call symbol and the clue symbol.
Trace...	Opens the Trace tool, which allows you to display the path from a selected asset to other assets based on specific criteria. See **Executing Traces** on page 1-49.

Displaying Asset Details

Asset Details provides information about assets selected in the Viewer. Asset Details is enabled by clicking the **Asset Details** button (🖳) in the Viewer's toolbar or by right-clicking an asset and selecting **Asset Details...** from the options menu.
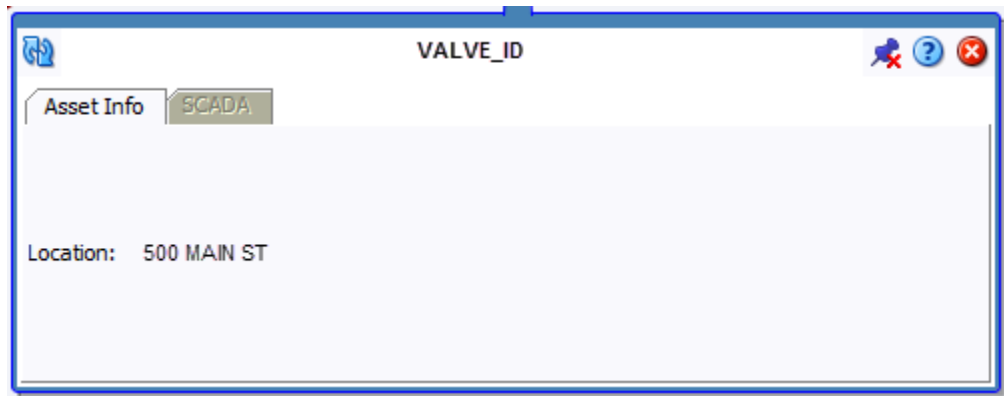
Note: the Viewer's Asset Details button (🖳) is highlighted when enabled.

When Asset Details is enabled, selecting an asset will automatically launch a balloon-style callout window attached to the asset in the Viewer. Selecting a different asset will close the first window and open a window for the newly selected asset. To keep a window open, you may "pin" it by clicking the pin button (📌). You may unpin the window by clicking the unpin button (📌) or close it by clicking the close button (❌). Asset Details windows may be dragged to a different location in the Viewer or resized.

The Asset Details tabbed data views provide relevant information based on the object selected. Data is refreshed whenever you select a different tab, but you may manually refresh the data by clicking the refresh button (🔄). Click the Help button (❓) to display help for the active tab.

The Asset Details tabs provide the following information:

- **Asset Info:** The information contained in the Asset Info tab varies depending on the type of asset and its current condition, but may include the following types of information:

    - Event information, such as number of customers affected, when the event began, estimated restoration time, event type, event number

    - Event Note

    - Location

    - Asset Notes

    - Crew information

- **SCADA:** The SCADA tab displays SCADA asset data. It is only enabled for SCADA assets in systems that have implemented SCADA Extensions.

Viewing Asset Attribute Information from the Viewer

You can access attribute information related to a asset using the Viewer. Asset attributes include physical and reference information about an asset, such as location and rating.

To view asset attributes from the Viewer, complete these steps:

1. Right-click an asset in the Viewer.

2. From the options menu, click the **Attributes…**. The Attributes window opens.

About the Attributes Window

The Attributes window is tabular and allows standard sorting and filtering; see **Sorting and Filtering Data** on page 1-11.

The information in the Asset Information is view-only. Once the asset attribute window is open, selecting another asset in the Viewer will update the information for the selected asset.

See also **Viewing Asset Attribute Information from the Control Tool** on page 1-63.

Viewing the Color Legend

To see the color legend for the view, select **Color Legend...** from the Viewer **Help** menu.

Searching and Loading Viewer Maps

The Viewer *Search* functionality allows you to quickly focus the Viewer on an area or object.

- Search Type Option

- Search Case Option

- Search Result Limit

- Customer Information Section

  - Account #

  - Name

  - Address

  - Telephone

  - Meter Number

- Intersection

  - Street 1

  - Street 2

- Pressure Zone Name

- Asset ID

- View Area

- Crew ID

- Event #

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 or from the Actions menu. The Search dialog box opens.

2. Select the **Search Type** 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.

4. Enter your search result limit in the **Search Result Limit** field (default value is 100).

5. Click the desired search field and either enter search criteria **or** leave the field blank to return all possible values (up to the search result limit).

6. Press **ENTER** or click the **Search** button.

7. If there is *only one match*, the Viewer will shift focus to the search result. If there are multiple matches, a Search Results dialog box displays the search results and the Search dialog box closes.

   For example, an Intersection search using the term Oaklynn returns six matches.
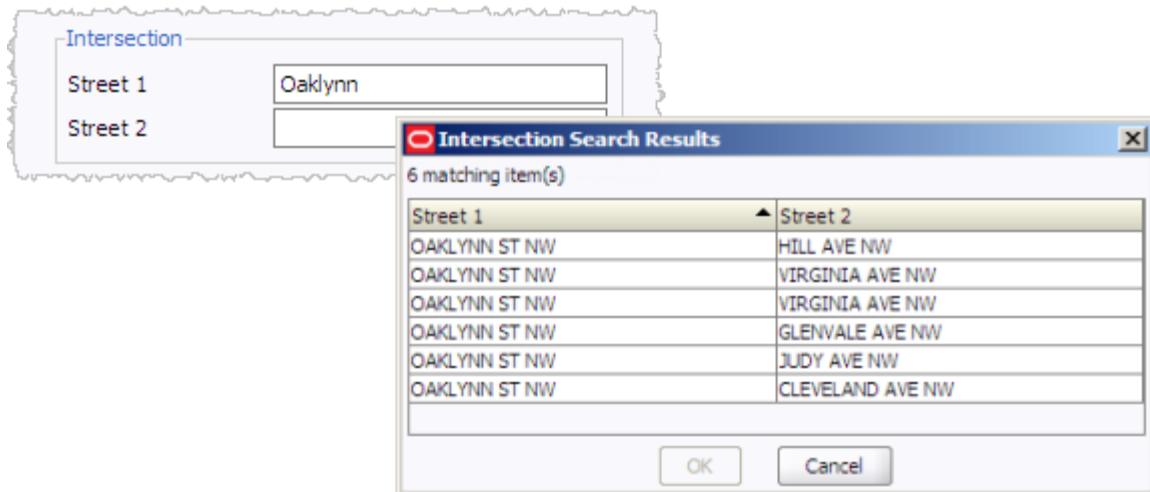
8. If there are multiple matches, select a row in the Search Results dialog box and click the **OK** button. The object appears centered in the Viewer and the Search Results dialog box closes.

   Note: 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 and Unloading 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.

• Press the **M** key.

• Click the **Load Maps** button ( ).

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 **Shift+U**.

• Click the **Unload Maps** button ( ).

> **Note:** unless your system is configured to unload maps with each focus, any loaded maps will continue to be loaded until you explicitly unload maps or you switch mode (*i.e.*, from study to real-time or from real-time to study).
>
> If there are more assets displayed than the configured maximum, which is 500,000 in the product configuration, the viewer will unload the maps that have the oldest access time to get the total under the limit.

Navigating in the Viewer

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

• Pan left, right, up, down, or diagonally in the map using the pan compass.

• Use the Plus (**+**) and Minus (**–**) buttons on the zoom slider to zoom in and out. You can also drag the zoom slider toward the **+** to zoom in or toward the **–** to zoom out. The scale indicator displays the current zoom scale. The scale is hidden if a schematic view, such as a lift station, is selected.

• Navigate using your mouse controls, as described in the next section.

Navigating Using Mouse Controls

There are various mouse controls you can use to navigate within the Viewer. The following table shows all of the mouse commands for the Viewer.

To…	Do this…
Select an object	Click the object.
Select multiple objects	Shift-click and drag to extend the selection rectangle around the area with the object you want to select. The **Select Asset** dialog will open listing all of the assets in the selection area.
Box Zoom	Box Zoom allows you to focus on an area. Click and hold the middle mouse button to begin drawing the rectangle and release it to complete drawing the rectangle; the Viewer will display the area selected at a zoom level that allows the area to fill the Viewer drawing area.
Zoom out	Scroll upward with the scroll wheel, if available.
Zoom in	Scroll downward with the scroll wheel, if available.

To…	Do this…
Open the Control Tool	Double-click the object.
Move the map	Click and drag the map to a new location.

Scaling Symbols and Text

To make the symbols for disconnects, breakers, and conditions prominent while zoomed out, select **Symbols Bigger** button (■■). The symbols remain large even as you zoom out, but will still disappear at standard declutter levels. Conversely, you may make the symbols smaller by clicking the **Symbols Smaller** (■■). To make text annotations, such as asset ID, larger, click the **Text Bigger** button (ᴛT). To make text smaller, click the Smaller Text (Tᴛ). To reset symbols and text to their standard sizes, click the **Reset Size** button (■T).

Displaying Pointer Coordinates

To view the coordinates of a point in the Viewer, click and select Pointer Coordinates... from the Viewer's **Actions** menu. The Pointer Coordinates dialog will open with the following information:

- **Window X/Y:** the position in the current drawing area view.

- **Coordinates (X/Y) (Geographic Coordinate System):**

- **Latitude/Longitude:**

- **Distance from Previous Coordinate (Feet):**

> **Note:** the keyboard accelerator (**C**) is very useful for quickly opening the Pointer Coordinates window.

Viewer Focus

The Viewer's **Focus** option is context aware and will function according to your selection.

- If you select an object in the Viewer, clicking the Viewer Focus button will focus on that object.

- If you select an event in the Work Agenda and click the Viewer Focus button, the Viewer will focus on the asset/object associated with the event.

Focus on Viewer Selection

If you select an object in a geographic view in the Viewer and click the Focus button, the Viewer will center the object and zoom in/out as necessary. If the object is part of a schematic diagram view, the first Focus action will display the object in the diagram view. Each successive click will cycle the Viewer through alternate views, if available, until it cycles back to the geographic view.

Focus on Selection Made in another Window

When you make a selection of an event in another window (*e.g.*, the Work Agenda) and click the **Viewer Focus** button, the Viewer will find the asset and focus the drawing area on it.

Using Lens Windows

The Viewer's Lens functionality allows you to start a "mini-Viewer" window that is focused and zoomed in on a selected asset. To start a Lens window, select an asset in the Viewer and select **Show Lens** from the Viewer's **Actions** menu. The Lens window will open zoomed in on the asset.

Behaviors of the Lens Window and Viewer Lens Area

The area displayed in the Lens window is indicated by a red rectangle in the Viewer's Drawing Area. The red rectangle may be moved directly in the Viewer by clicking and dragging. As the rectangle moves, the Lens window will update to show the area inside the rectangle. Likewise, panning and zooming in the Lens window will be reflected by position and size of the rectangle in the Viewer.

When the Lens is started, its text size, symbol size, attribute size, coloring rule, and big symbols settings are all synchronized with the Viewer; thereafter, the Lens settings are independent. If you want to resynchronize the Lens settings with the Viewer settings, close and reopen the Lens. Note that real-time/study mode and tracing are always synchronized between the Viewer and the Lens.

Real-Time and Study Mode

NMS 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, network, 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, network, and condition 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. You can reset the study session to current real-time by using the Study Session Control tool. In addition, some Web Switching Management actions can also cause study session resets. Please refer to the Web Switching Management chapter for more information.

> **Note:** It is recommended that you reset study sessions to real-time as often as makes sense (*e.g.*, when starting a new switching plan, testing a new 'what if' scenario, etc.). This is especially important during high load periods (*e.g.*, a storm).

Switching to Study Mode

To toggle the Viewer to study mode, do one of the following:

• Select **Study** from the Options menu, or

• Click the study mode 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 the real-time button (🔻) on the toolbar.

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

Selecting Assets

Asset Selection

To select an asset in the Viewer, click the asset symbol. (Note that the Viewer will select the highest priority asset that is closest to the mouse but still within the configured selection-radius.)

Problems with asset selection may occur if the selection-radius is set too high and if an area has a multiple assets in close proximity. If that is the case, you may want to select multiple assets using Box Selection and choose the asset from the **Select an Asset** window.

Box Selection

Box selection is used to select an asset from an area containing multiple assets. To perform a box selection, Shift-click and drag in the Viewer drawing area to create a rectangular selection box. When you release the mouse, the **Select an Asset** window opens and is populated with all assets within the selection area. Select any asset in the list to highlight it in the Viewer; highlighting changes the asset symbology to the selection color, but the asset is not selected until a selection action is initiated.

Select an Asset provides the following actions:

- **Select** - selects the highlighted asset and closes the window.

- **Control Tool** - selects the highlighted asset, opens its Control Tool, and closes the window.

- **Asset Details** - selects the highlighted asset, opens the Asset Details window above the asset in the Viewer, and closes the window.

- **Cancel** - closes the window. The last highlighted asset, if any, will remain highlighted in the Viewer, but will **not** be selected for subsequent Viewer actions.

Polygon Selection

Polygon selection is an advanced form of box selection. To begin a polygon selection, press the Alt key and click the Viewer drawing area to place the first anchor point; continue to press Alt and click to add additional vertices. To complete the polygon, press Alt and right-click to connect the last vertex to the first vertex. Once the selection polygon is complete, the **Select an Asset** window will appear listing all assets that were inside the area.

Multiple Selections

If you are in Supply Points mode, you can use Box Selection or Polygon Selection to select multiple supply points. To add a supply point to your selection press the Control key and click the supply point; likewise, to remove a supply point from your selection, press Control and click a selected supply point. You may also add multiple supply points to your selection by pressing the Control key while performing a box selection.

Identifying Symbology

Asset Symbology

Changes in the status of an asset (*e.g.*, valves, pumps etc.) are reflected by changes in symbology. For example, a closed valve is a different color and shape than an open valve.

Condition Symbology

Dynamic conditions on an asset (*e.g.*, "predicted service outage," "crew on-site," "notes," etc.) are indicated with specific symbols attached to the asset to which the conditions apply.

Condition symbols display in specific areas around an asset or object. The following table provides examples of where condition symbols display in relation to the asset they are attached to. The following figure displays the Viewer with probable asset outage, crew on-site, note and tag conditions.

Area	Symbols
Above Left	Tags
Above Right	Probable Service/Asset Outages Real Outages
Below Left	En route/Onsite Crews
Below Right	Notes Call Clues

Work Agenda Interaction with Event Condition Symbols

When you select a condition symbol for an event, such as a predicted service outage symbol, the corresponding row in the Work Agenda will be highlighted and the Work Agenda table will scroll to display the row, if necessary. If the event is not in the Work Agenda filtered view, the Work Agenda will not change to a filter that would show the event and the selection will be cleared; for example, if the Work Agenda is set to show completed events, selecting an active event symbol will not change the Work Agenda to the "To Do" view to show the event.

Related

- **Work Agenda Views** on page 1-21

Pipe Symbology

Pipe symbology changes color, dash patterns, and thickness for different types of pipes and topology states.

SCADA Symbology

For systems with SCADA Extensions, the Viewer provides many visual cues about SCADA assets and their statuses.

Hiding and Displaying Viewer Objects

The Viewer's Hide/Display tool allows you to display only those map elements (e.g., layers, objects, crew types) that are of interest to you. To change visibility of components displayed in the Viewer, complete these steps:

1. Click the Hide/Display (**H/D**) toolbar button. (Alternatively, you may select Hide/Display... from the Actions menu.)

2. Select the elements that you want displayed; unselect those elements that you do not want displayed.

   Note: Hide/Display is a configurable feature of NMS so your dialog may have different options.

3. Hide/Display options may include:

   • **Layer Groups:** defined groups of single layers listed in the **Layers** pane.

   • **Layers**

   • **Highlighting**

     • Predicted Impacted - adds a glow around an object that is predicted to be off supply.

     • Confirmed Impacted- adds a glow around an object that is confirmed to be off supply.

     Note: if more than one highlighting color matches, the following order of importance is used:

       1. Predicted impacted

       2. All other highlighting (following the configured pipe coloring priority).

     To see the color legend for highlighting glows, select **Highlight Legend...** from Viewer's **Help** menu.

   • **Crew Types**

   • Declutter (On/Off) - see **Decluttering the Viewer** on page 1-48 for details.

   • Hide Conditions with Assets (On/Off) - see [TODO] **Hiding Conditions with Assets** on page 1-49 for details.

   • Spatial Landbase Menu - allows you to chose which Spatial Landbase to use. The options available will depend on your installation.

   • Network Level

   • The Pending Assets menu allows you to choose to display construction pending, decommissioning conditions, and inactive assets. Options are:

     • Hide Pending Assets (the default)

     • Show Pending Assets

4. Click the **Close** button to close the Hide/Display dialog.

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 in enabled by default, but you can turn it off by unchecking the Declutter (On/Off) option in the Hide/Display dialog.

Hiding Conditions with Assets

The Hide Conditions with Assets option, which is checked (*i.e.*, "on") by default, will hide all conditions when their associated assets are hidden, either due to other Hide/Display options or decluttering. When not checked, the conditions will always display, even when their assets do not.

Executing Traces

The trace feature allows you to display the path from a selected asset to other assets based on specific criteria. The trace path is displayed on the Viewer by changing all pipes 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**

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
To Source	Traces from the selected asset to its source.
All Connected	Traces from the selected asset to all connected assets, stopping only at sources.
To Valve	Traces from the selected asset to upstream and downstream valves.
To Asset Class	Traces from the selected asset to a asset class.
To Closed Points	Traces from the selected asset to all directly-connected closed points on the pressure zone.

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 asset.

    - **Downstream** - Constrains the trace to be only downstream of the selected asset.

    - **All** - Allows the trace to be both downstream and upstream of the selected asset.

        Note: Tracing all connected asset 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 asset.

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 **Asset Details** section displays the following asset information:

- Asset type

- Asset handle

- Network Component Group (NCG)

- Map containing the asset

- Display group

The **Symbol Details** section displays the following symbol information:

- Symbology class

- Symbol ID

- Coloring status

- Valid statuses

- Coloring rule

The **Connectivity Details** section displays the following connection information:

- Pressure zones

- Current statuses

- Nominal statuses

- States

- 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 1-52.

Trace Dialog Toolbar

Toolbar Icon	Description
	The **Trace** button executes the trace.
	The **Clear** button erases the trace color from the Viewer and returns to normal color.
	The **Refresh** button performs the trace again. This is useful if assets have been operated or the model was rebuilt.
	The **Trace Focus** button focuses the Viewer on the entire extent of the trace.
	The **Endpoint** button focuses the Viewer on the endpoint asset of the trace. It is disabled if the trace is in all directions (since there will not be a single endpoint).
	The **Help** button displays online help for the Trace function.

Executing a Trace

To execute a trace, complete these steps:

1. Select the asset you want to trace from and click the Trace button ( ). (See **Using the Trace Dialog Box** on page 1-49 for field descriptions.)

2. Select the trace type, direction, and mode for the trace, as described in the following table:

To trace...	Do this…
To all connected assets	Select "All Connected" from the drop-down and then click the **Trace** button. The Viewer traces from the asset to all connected assets stopping only at a source.
To connected valves	Select "To Valve" from the first drop-down and then select the direction from the second drop-down. Click the **Trace** button. The Viewer traces from the asset to the nearest valve in the specified direction.
To the source	Select "To Source" from the first drop-down. Click the **Trace** button. The Viewer traces from the asset upstream to the source.
To a specific asset class	Select "To Asset Class" from the first drop-down. The Asset Class field and **Search** button will be displayed. Click the Search button to open the Select Class dialog. Expand the object tree and select the asset class that you wish to trace to. Click **Ok** to populate the Asset Class field. Click the **Trace** button. The Viewer traces to that asset class.
Upstream	Select "To Valve" from the first drop-down, and then select "Upstream" from the second drop-down. Click the **Trace** button.

To trace...	Do this…
Downstream	Select "To Valve" from the first drop-down, and then select "Downstream" from the second drop-down. Click the **Trace** button.
Both upstream and downstream	Select "To Valve" from the first drop-down, and the select "All" from the second drop-down menu. Click the **Trace** button.
Using statuses currently displayed in the Viewer	Select "Current Session" from the third drop-down menu. Select the tracing option (All Connected, To Valve, etc.) 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 Valve, etc.) and the direction, then click the **Trace** button.

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. In the Viewer drawing area, select the asset you want to trace from and click the **Trace** button.

2. Click the **Advanced** button ( ) in the bottom-right corner of the Trace dialog. The dialog expands to display detailed connection information.

3. In the Connections box at the bottom of dialog, click the + sign to expand a node and display all connection branches.

4. 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 1-50 for more information.

5. Repeat steps 4 and 5 needed to inspect more connections.

Using the Commissioning Tool

The Commissioning Tool allows you to commission an asset that is currently in construction or decommission assets currently marked for removal.

To open the Commissioning Tool, select **Commissioning Tool...** from the Viewer's Actions menu. The Commissioning Tool displays two panels:

- The **Waiting for Approval Panel** displays a table of assets that need to be approved and indicates their current statuses (To Commission or To Decommission).

- The **Approved Panel** displays a table of assets approved for removal and indicates their current statuses (Commissioned or Decommissioned).

    If no pending assets are currently selected, both panels will be empty.

The tables may be sorted by either the Asset or Status column and may be filtered using the filter fields at the top of the table columns (see **Sorting and Filtering Data** on page 1-11). The status bar at the bottom of the Commissioning Tool window indicates the current real-time or study mode status.

You can perform the following actions on the assets displayed in the Commissioning Tool window:

Task	Description
Approve the selected assets.	Select one or more assets in the Waiting for Approval list and click the approve button (✔); alternatively, you may use the right-click menu option. The assets are moved to the Approved list and their symbols in the Viewer change from red or green to gray.
Focus on the asset in the master Viewer window.	Select a single asset in either list and click the Focus button (◉); alternatively, you may use the right-click menu option.
Remove selected asset from the list.	Select one or more asset in either list and click the Remove button (✖); alternatively, you may use the right-click menu option.
Undo the approval for the selected assets.	Select one or more assets in the Approved list and click the Undo button (↩); alternatively, you may use the right-click menu option. The assets are moved to the Waiting For Approval list and their symbols in the Viewer change from gray back to red or green.

Commissioning and Decommissioning Assets

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

1. In the Viewer, load the pending asset changes you wish to modify. You can select multiple assets.

2. Enable the **Show Pending Assets** option in the Hide/Display dialog.

3. Switch to study mode if you don't want to affect the real-time model.

4. Select **Commissioning Tool...** from the Viewer's Actions menu. Selected assets pending approval are listed in the Waiting for Approval panel.

5. Select the assets you want to commission or decommission, then click the **Approve** (✔) button.

Note:

- Assets being decommissioned are no longer part of the model and are immediately colored as disconnected.

- Commissioned assets immediately become part of the model and connections are recalculated (*i.e.*, a newly commissioned asset attached to a supply will color as supplied).

Selecting Pending Assets

When you select an asset in the Viewer that is pending construction or decommission, the asset is listed in one of the panels in the Commissioning Tool. To select multiple objects, shift-click and drag until the selection box surrounds the objects.

> **Note**: use the **Show Pending Assets** option in the Hide/Display dialog to display or hide pending assets.

The Viewer displays the following commissioning-related conditions:

Symbol	Description
	Unapproved pending construction.
	Approved pending construction.
	Unapproved pending decommission.
	Approved pending decommission.

Using the Commissioning Tool with Web Switching Management

The Commissioning Tool will generate switching steps for each commissioning/decommissioning asset action when Web Switching Management is licensed. Commissioning/decommissioning actions will always be recorded in Real-Time mode. The actions will either go into the Miscellaneous Log or a switching sheet recording Real-Time operations.

Non-complete Commissioning and Decommissioning steps can be executed over and over again in Study mode within the switching sheet they were recorded into. In Real Time, the steps can only be Instructed and Completed one time which will initiate the action against the Real Time model. Completing the step in study mode will only cause the action to be completed in the user's study session.

For performance purposes, Commissioning and Decommissioning steps should be completed in groups by highlighting multiple steps during step execution operations. This will force the requests to be packaged and processed as a batch request. The batch processing will only work if the Commissioning and Decommissioning steps are contiguous in the steps list without any other type of step mixed in. You can still highlight a larger group of steps containing a mixture of step actions and execute them, but each contiguous group of Commissioning and Decommissioning steps will be processed as a batch request.

An error will be generated when completing a commissioning/decommissioning step where the asset has not been setup for commissioning or decommissioning. This error will cause the step to not complete and will halt step execution.

A warning scenario will be generated when completing a commissioning/decommissioning step where the resulting action has already been applied to the asset in question. The user will have the option of ignoring the warning, which will cause step execution to continue. If the warning is not ignored, then step execution will be stopped.

Using the Control Tool

The Control Tool lets you perform actions on assets. 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 assets include tagging an asset, placing a note on an asset, re-predicting an outage upstream or downstream from an asset, and opening and closing an asset.

Control Tool topics include:

- **Understanding the Control Tool**
- **Operating Assets**
- **Tagging Assets**
- **Highlighting Events in the Work Agenda**
- **Repredicting Upstream/Downstream**
- **Viewing Documents Associated with an Asset**
- **Adding Notes**
- **Viewing Asset Attribute Information from the Control Tool**
- **Viewing Associated Customers**
- **Toggling Call Display**
- **Viewing Associated Customers**
- **Using the Look Ahead Dialog**
- **Associating Documents with Assets**
- **Associating Damage Assessments to an Asset**
- **Completing and Instructing Actions**

For related topics, see also:

- **Web Switching Management** on page 3-1
- **Working with Safety Documents** on page 3-74

Understanding the Control Tool

The Control Tool lets you perform asset operations based on the current status of the asset. For example, if an asset is already open, you can close it. If the asset is closed, you can open it.

You can access the Control Tool from the Viewer by double-clicking an asset or by selecting an asset and then clicking the **Control Tool** button (⌁) on the Viewer toolbar. If you click the Viewer drawing area without selecting an asset, the system selects the nearest asset.

The name of the asset is displayed at the top of the Control Tool. On the left side of the screen are a set of buttons for the options you can perform. The options that appear differ depending on the type of asset that the Control Tool was opened from (pipe, valve, pump, etc.).

Control Tool Actions

Control Tool operations and functions are performed by clicking the buttons displayed on the Control Tool. The following table describes common Control Tool buttons and the actions they perform.

Option	Description
Operate...	Allows you to perform asset operations; options available depend on the asset and asset state: • Close • Open • Instruct Close • Instruct Open • Close and Tag • Instruct Close and Tag • Remove Tag and Open • Instruct Remove Tag and Open • Undo Close
Main Break	Inserts a main break condition into the model.
Main Break Repaired	Removes the main break condition from the model.
Tag...	Allows you to Place Tag, Instruct Place Tag, Remove Tag, and Instruct Remove Tag.
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 asset.
Repredict Downstream	Allows you to manually repredict the outage to the next predictable downstream asset.
Repredict to Here	Allows you to manually repredict downstream outages to the selected asset.
View Documents...	Allows you to view documents associated with assets.
Note...	Allows you to place notes on assets.
Attributes...	Displays the Assets Attributes window, which lists information about the selected asset's properties. See **Viewing Asset Attribute Information from the Control Tool** on page 1-63.

Option	Description
Damage Assessment…	Opens the Damage Assessments window, which displays a list of damage assessments associated with the asset selected in the Viewer and allows you to add new damage assessments. See **Using the Damage Assessments Window** on page 2-18.
Toggle Call Display	Toggles the call display on or off. When enabled, a symbol is displayed in the Viewer window for any assets that have calls associated with the event. This option is only available on Control Tools that are opened from a predictable outage asset, such as a valve or pump, which has an open associated event.
Customer List...	Displays the customers downstream from an asset.
Switching Plans...	Allows you to open a switching plan associated with the asset. If multiple plans are associated with the asset, the Asset to Sheet Operation List displays a list of switching sheets and associated operations. Each operation represents a step in the switching sheet. Select a sheet operation and click **Open**. See **Web Switching Management** on page 3-1 for more information on using Web Switching Management.
Safety Documents...	Allows you to open or create safety documents associated with the asset. See **Opening Existing Safety Documents** on page 3-90 or **Create a New Safety Document from the Control Tool** on page 3-101.
Generate Isolate Steps...	**Allows you to generate a set of steps in the active switch sheet to isolate the selected pipe. These will appear in a new "Isolate" steps block. Sub-options allow you to ignore assets with certain conditions on them.**
SCADA Summary...	Opens the SCADA Summary window.
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. Note that this will also affect reported outage times.
Help	Displays Control Tool help.
Exit	Closes the Control Tool.

Operating Assets

You can open or close an asset in the Viewer to reflect the current state of the asset in the field. The Control Tool's available asset operation options depend on the status of the asset. For example, a Control Tool opened from an open asset will only allow you to close the asset. In real-time mode, you must have authority over the control zone where the asset is located in order to operate the asset.

Closing an Asset

To close an asset:

1. Open the Control Tool for an open asset.

2. Click **Close**. The asset closes.

Undoing the Close Operation

You can undo a Close operation, which is different than opening an asset. With the Undo Close 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.

Opening an Asset

To open an asset:

1. Open the Control Tool for a closed asset.

2. Click **Open**. The asset opens.

Instructing Actions

Many **Operate** options, such as **Open** or **Close**, will have an **Instruct** version (for example, **Instruct Open**). These do not perform the action in the model, but instead place an Instruct condition in the model, which indicates that another party (usually a crew) has been instructed to perform the action.

Instructed actions display the Look Ahead and other warnings and errors, much like the traditional actions, with one important difference. If the action is to be recorded into a sheet, the Look Ahead and its associated errors and warnings display data as if the instructed steps in that sheet were already completed. This allows you to instruct actions in the Control Tool that are dependent upon instructed actions in the current sheet. This will also give you the correct customer count as if the instructed steps were already executed.

This considers all instructed steps in the single active sheet only if recording is on and the mode matches the Control Tool's, and then applies them to the model in the order that they were instructed (using the Instructed Date field.)

These instructed actions can then be completed, either in the sheet or in the Instructed Actions panel of the Control Tool.

Instructed Actions Panel

The Instructed Actions panel provides a way of recording results of instructed actions from the Control Tool rather than through an Emergency Switching Sheet, Standalone Safety Document, or the Miscellaneous Log. When an action is instructed, the panel's buttons are enabled so you can record the response.

To record instructed actions results:

1. Open the Control Tool for an asset.

2. Click the **Operate...** button.

3. Select an instruct operation, such as "Instruct Open." The Instructed Actions pane will become sensitized.

4. At this point, the crew would be instructed to open the asset and would report back whether:

- they completed the action

- they aborted the action

- the action failed

5. Click the button corresponding to the result.

You may also click the **Show Sheet** button to open an associated Emergency Switching Sheet or Standalone Safety Document (if one exists) or the Miscellaneous Log if there is not an existing Emergency Switching Sheet or Standalone Safety Document.

> **Note:** this example assumes a crew is in the field being instructed to perform certain operations. The sequence of events is designed to be illustrative of the Control Tool actions rather than a suggested workflow for field operations.

Related

- **Emergency Switching** on page 3-66.

- **Using the Miscellaneous Log** on page 3-94.

- **Using Stand Alone Safety Documents** on page 3-101.

Tagging Assets

You can tag assets in the Viewer window that are physically tagged in the field. Tags placed on assets in the system prevent users from performing open or close operations on the asset. When you place a tag on an asset, a tag symbol appears attached to that asset in the Viewer. You can place multiple tags on a single asset. When you do, the number of tags on the asset appears in parentheses next to the tag in the Viewer. You must have authority over the control zone where the asset is located in order to tag the asset.

Placing a Tag

To place a tag on an asset:

1. Open the Control Tool for the asset.

2. Click the **Place Tag** button. A tag symbol displays next to that asset in the Viewer. If a tag symbol already existed (the asset 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 an asset:

1. Open the Control Tool for the asset.

2. Click the **Remove Tag** button. The Remove Tag dialog box opens, displaying a list of the tags on that asset, 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.

Highlighting Events in the Work Agenda

If an event is associated with a selected asset, 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 an asset, only the first one found will be highlighted. See also **Work Agenda Interaction with Event Condition Symbols** on page 1-47.

Repredicting Upstream/Downstream

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

- If the asset is suppled, the problem is actually one or more downstream outages.

- If the asset is not supplied, 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 asset. When repredicting downstream, the system distributes the event to one or more assets. 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 customer point is not actually where the trouble is located. Using the Control Tool, you can repredict the outage upstream to a different valve. When you repredict the outage, the valve displays a "PDO" (predicted outage) symbol. The original predicted service outage displayed in one of Work Agenda's Trouble Events list windows changes to a predicted outage located at the valve.

Viewing Documents Associated with an Asset

To view documents associated with an asset, complete these steps:

1. Open a Viewer window. Locate an asset that has an associated document you wish to view. (Assets with associated documents have a "**DOC**" condition symbol.)

2. Double-click the asset to bring up the Control Tool.

3. Select the **View Documents…** option from the Control Tool.

   - The Manage Documents window appears, which lists any associated documents for the selected asset.

      - Select the document and click the **View Document** button to open the document for viewing.

      - Click **Exit** to close the Manage Documents window.

For instructions on associating documents to assets, see **Associating Documents with Assets** on page 1-68; note that this function is available only to administrative users.

Adding Notes

The Control Tool allows you to place notes on assets. Note text is displayed in the **Displaying Asset Details** balloon dialog in the Viewer or the note may be opened by selecting **Note...** on the Control Tool, which will open the **Condition Data** dialog. All notes for the selected asset are listed in the **Conditions** field. You may add a note or edit an existing note in the **Condition Text** field.

Condition Data Dialog Box

The Condition Data dialog displays the following fields and buttons:

- **Fields**

    - The **Condition Type** field displays the condition type of note.

    - The **Object** field displays the object class of the asset.

    - The **Object Name** field displays the name or ID of the asset.

    - The **Conditions** field lists the notes that have been entered for the asset.

    - The **Condition Text** field displays the text of the selected note.

- **Buttons**

    - The **New** button allows you to enter a new note for the asset.

    - The **Edit** button allows you to edit the text of the selected note.

    - The **Delete** button deletes the selected note.

    - The **Cancel** button closes the Condition Data dialog.

Creating a Note

You can create one or more notes for an asset using the Control Tool. Once you save a note, a note symbol displays in the Viewer next to the asset. If you create multiple notes for an asset, 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 asset.

2. On the Control Tool, click the **Note…** button. The **Condition Data** dialog opens.

3. Click the **New** button. The Condition 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 text is displayed in the Conditions field. A note symbol appears in the Viewer next to the asset. If a note already existed, a number appears in parentheses next to the note symbol with the current number of notes.

Editing a Note

To edit an existing note from the Control Tool, complete these steps:

1. In the Viewer, open the Control Tool for the asset.

2. Click the **Note…** button. The Condition Data dialog opens with existing notes listed in the Conditions field.

3. Select the note that you want to edit. The note text will display in the Condition Text field.

4. Click the **Edit** button. The Condition 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.

Deleting a Note

You can delete a note once it no longer applies to the asset or the event.

To delete a note, complete these steps:

1. In the Viewer, open the Control Tool for the asset.

2. Click the **Note…** button. The Condition Data dialog opens with existing notes listed in the Conditions field.

3. Select the note that you want to delete.

4. Click the **Delete** button. The note is deleted from the Condition Data dialog. If it was the only note for the asset, then the note symbol disappears from the Viewer. Otherwise, the note flag remains, but the number of notes (shown in parentheses next to the note) is decremented by one if there were three or more notes or removed if there were two notes.

Viewing Asset Attribute Information from the Control Tool

You can access attribute information related to an asset using the Control Tool. Asset attributes include physical and reference information about an asset, such as location and rating.

To view asset attributes using the Control Tool, complete these steps:

1. Open the Control Tool for an asset.

2. Click the **Attributes…** button. The Attributes window opens.

See also **Viewing Asset Attribute Information from the Viewer** on page 1-41.

Toggling Call Display

You can view the calls associated with an event in the Viewer by clicking the **Toggle Call Display** button. A symbol appears attached to any points 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 from the asset and click the **Toggle Call Display** button again.

Viewing Associated Customers

To view the customers on and downstream from an asset, 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 asset. See **Using the Trouble Info Window** on page 2-42 for more information.

> **Note:** You cannot toggle over to the Calls view when you open the Trouble Info window from this Customer List option.

Viewing Customers

To view meters downstream from an asset, click the **Customer List…** button on the Control Tool. The Customers view of the Trouble Info window opens, listing all meters downstream from the asset. If the selected asset is off supply, the list will display all customers downstream from it in the nominal model configuration. From this page, you can initiate a ping request, as well as monitor previous ping results. See **Using the Trouble Info Window** on page 2-42 for more information.

Using the Look Ahead Dialog

The Look Ahead dialog provides information concerning the results of performing a requested asset operation. The Look Ahead dialog uses system status and topology tracing to "look ahead" of the requested operation and determine its consequences.

The Look Ahead dialog displays whenever a switching operation is initiated from the Control Tool in all portions of the distribution system. After determining the consequences, the Look Ahead dialog either displays the appropriate dialog box or gathers additional data for display. You can use the information displayed in the Look Ahead dialog to decide whether to continue with the operation.

This section includes the following topics:

- **Understanding the Look-Ahead Process**
- **Drop Count Tab**
- **Pickup Count Tab**
- **View Conditions Tab**
- **View Abnormal Tab**
- **View Critical Tab**

Understanding the Look-Ahead Process

The Look Ahead dialog 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 dialog.
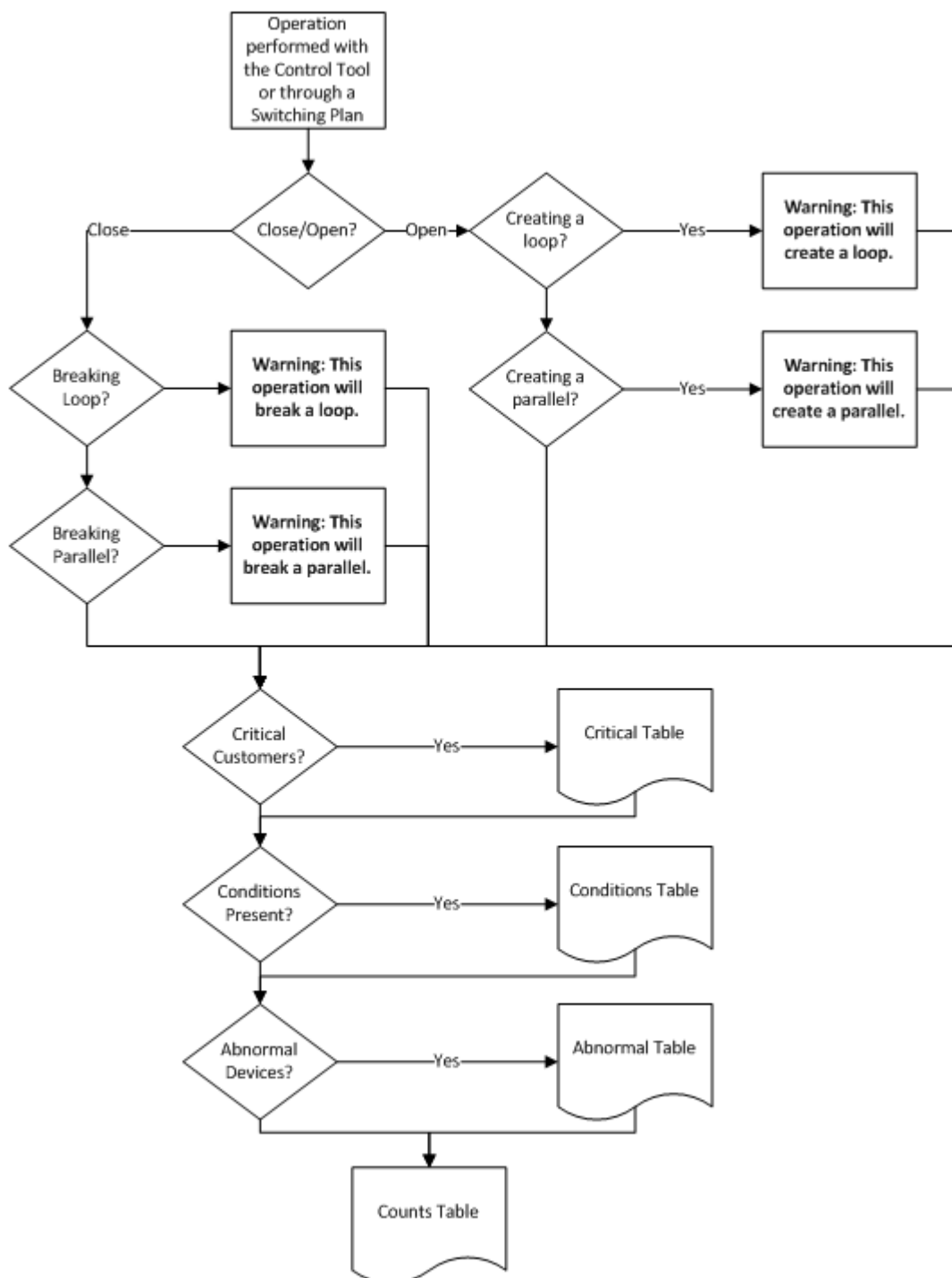
The Look Ahead dialog displays a warning if an operation will create or break loops or parallels. Counts, conditions, and abnormal asset information are not available when dealing with loops and parallels.

The Look Ahead dialog displays whenever a switching operation is initiated from the Control Tool in supplied, as well as un-supplied, portions of the distribution system. If the operation will outage or restore the system, additional data is gathered and displayed in the Look Ahead dialog.

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 an asset until you view any abnormal assets or conditions (see **View Abnormal Tab** on page 1-67).

> **Note**: If you attempt to close a valve in an outage area, the system displays the Create Nested Outage dialog box before displaying the Look Ahead dialog. Do one of the following:
>
> • Click **Yes** to create a nested outage.
>
> • Click **No** to close the valve without creating a nested outage.
>
> • Click **Cancel** to cancel the operation.

The Look Ahead Dialog

The Look Ahead dialog contains tabs and tables that display event- and asset-related information. The items on the Look Ahead dialog are described below:

• **Header**

• **Drop Count Tab**

• **Pickup Count Tab**

• **View Conditions Tab**

• **View Abnormal Tab**.

• **View Critical Tab**

Header

• **Information Provided**

 • The **Asset** field displays the name of the asset being operated.

• **Buttons**

 • **Preview:** allows you to generate a trace in Viewer that highlights the area affected by the asset operation. For example, if you close an asset and click the **Preview** button, the Viewer displays the network area that will be outaged.

 Note: The **Preview** button is only enabled when the network is going to be outaged. When the Look Ahead is closed (by confirming the operation or clicking Cancel), the trace highlighting will be removed.

Drop Count Tab

The Drop Count tab displays the number of customers affected by the asset operation. This tab provides information for Total Customers and total Critical Customers, with sub counts for three types of critical customers.

• The first two columns show data for the total counts:

 • The **Drop** columns display the drop information for the asset. Information is displayed as counts dropped downstream of the asset.

 • The **Pressure Zone** columns display the total counts for the pressure on which the asset to operate is located.

Pickup Count Tab

The Pickup Count tab displays the number of customers affected by the asset 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 **Pickup** columns display the pickup information for the asset. Information is displayed as counts picked up downstream of the asset.

- The **Pressure Zone** columns display the total counts for the pressure zone on which the asset to operate is located.

View Conditions Tab

The View Conditions tab shows any special conditions currently active, 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 pressure zone such as a truck_location (crew), tag, note, etc.

- The **Asset** column displays the name of the asset on which the condition is located.

- The **Location** column indicates whether the condition is upstream or downstream of the current asset.

- 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.

- The **Description** column displays information about the condition. For example, if the operation affects an asset with an associated document, the file name would be listed.

View Abnormal Tab

The View Abnormal tab displays data about abnormal assets on the same pressure zone as the asset to operate. An "abnormal asset" is any asset that is not in its nominal state (*e.g.*, an open valve that is normally closed).

The Abnormal table displays the following columns:

- The **Asset** column displays the name of the asset that is in an abnormal state.

- The **Nominal Status** column displays the normal status of the asset.

- The **Current Status** column displays the current status of the asset.

View Critical Tab

The View Critical tab shows customers classified as critical (*e.g.*, emergency, medical, key) that would be impacted by the proposed asset 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.

Buttons

- The **Open** button opens the asset. If an "open" operation is being performed on a closed asset, 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 asset statuses exist, then you must view the View Abnormal tab before the Open button becomes enabled.

- The **Close** button closes the asset. If a "close" operation is being performed on an open asset, 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 asset statuses exist, then you must view the View Abnormal tab before the Close button becomes enabled.

- The **Help...** button opens the online help content for Look Ahead.

- The **Cancel** button cancels the asset operation and closes the Look Ahead dialog.

Associating Documents with Assets

The Manage Documents window allows **Administrative** users to create and remove associations between modeled assets and documents that are stored in the Oracle Utilities Network Management System.

Using the Manage Documents Window

To open this window, select **Manage Documents...** from the Web Workspace **Tools** menu.

The Manage Documents window displays the following fields and buttons:

- The **Selected Asset** field lists the asset selected in the Viewer.

- The **Manage Documents** field lists any documents associated to the asset.

  - The **Unassociate** button allows you to remove the association between the selected asset and a document selected in the Manage Documents field.

  - The **View Document** button allows you to view the selected document.

- The **Available Documents** field lists the contents of the $CES_DRAWINGS directory (*i.e.*, $NMS_HOME/data/drawings). Use the blank text field to filter the Available Documents list. Enter all or part of the document you are looking for; the list is dynamically updated to display document names that include the text you enter.

  Note: Documents must be saved directly to the $CES_DRAWINGS directory as any files saved to sub-directories will not be visible to the tool.

- The **Associated Assets** field lists which assets 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 asset.

- The **View Document** button allows you to view the currently selected item in the **Available Documents** list.

- The **Exit** button closes the Manage Documents window.

Associating a Document with an Asset

To associate a document with an asset, complete these steps:

1. Login to Web Workspace as an **Administration** user.

2. Select **Manage Documents...** from the Web Workspace **Tools** menu. The Manage Documents window opens. (See the previous section for field descriptions.)

3. Open a Viewer. Locate and select the asset to associate to a document. The Manage Document window's Selected Asset field populates with the selected asset's name.

4. Select the item from the Available Documents list that you wish to associate with the selected asset. The **Associate** and **View Document** buttons are activated.

5. [Optional] Click **View Document** to display the document in an external viewer. For example, viewing a JPEG file might open the file in Windows Photo Viewer.

6. Click **Associate** to create the association between the selected document and selected asset. The following occurs:

   • The Manage Documents list populates with the document's filename and the Associated Asset field populates with the name of the selected asset.

   • In the Viewer, a document condition now appears on the selected asset.

7. Click **Exit** to close the Manage Documents window.

Removing a Document Association

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

1. Login to Web Workspace as an **Administration** user.

2. Select **Manage Documents...** from the Web Workspace **Tools** menu. The Manage Documents window opens.

3. Open a Viewer. Locate and select the asset that you wish to disassociate from a document. The Manage Document window's Selected Asset field populates with the name of the asset and the Manage Documents pane lists all associated documents.

4. In the Manage Documents list, select the document you wish to disassociate from the asset. The **Unassociate** and **View Document** buttons are activated.

5. [Optional] Click **View Document** to display the document in an external viewer. For example, viewing a JPEG file might open the file in Windows Photo Viewer.

6. Click the **Unassociate** button to remove the association between the selected document and selected asset. The following occurs:

   • The selected document is removed from the Manage Documents list.

   • In the Viewer, a document condition is removed from the selected asset.

7. Click **Exit** to close the Manage Documents window.

Associating Damage Assessments to an Asset

You can enter damage assessment for an asset. Damage assessment incidents are not included in counts for the event. The damage assessment trouble code has an associated clue symbol Damage Assessment clue symbol (letters 'DA' in a red circle), which will be displayed in Viewer at the damage location.

When you enter damage assessment information, you can select one or more crew types needed to repair the reported damage.

If multiple damage assessments exist for an event, the system will calculate the estimated repair time by adding together estimated repair times from each active damage assessment.

To enter damage assessment information for an asset, complete the following steps:

1. Open the Viewer.

2. Select an asset and open the Control Tool for the asset.

3. Click the **Damage Assessment...** button. The Damage Assessments window opens for the selected asset. If any damage assessment records exist for this asset, they are displayed in the list.

4. Click the **New Damage Assessment** ( ) toolbar button. The Damage Assessment window opens.

5. Complete additional fields on this screen as needed. See **Damage Assessment Window** on page 2-15 for field descriptions.

6. Click the **Save** button on the toolbar.

7. New damage assessment is created. In the Viewer, a damage assessment symbol appears on the asset. The damage assessment would either create new event or group into an existing event.

8. Once the damage has been assessed, populate the Damage Specifics, Required Material, and Attachments sections and click the **Damage has been assessed** ( ) toolbar button to indicate that the damage assessment has been performed. The status of the damage assessment changes to Assessed. Estimated Time to Repair for the event may get updated based on entered damage details.

Completing and Instructing Actions

When you perform actions in the Control Tool while you are recording in Web Switching Management, the system automatically populates fields in the associated switching sheet as follows:

- The date field on the Control Tool, which defaults to the current date and time, is used to populate the Completed Date field in the associated switching sheet when an operation is completed in the Control Tool.

- If steps are instructed to a crew, this date is used to populate the Instructed Date field in the switching sheet.

The **Instructed Actions** area below the date field displays a list of actions that have been instructed on the selected asset. The drop-down allows you to select an instructed action to complete.

The **Show Sheet...** button displays the sheet that contains the selected instructed action so you can execute the actions from Web Switching Management.

> **Note**: This option is available only when Web Switching Management is licensed. This allows you to navigate to the switching sheet so you can perform the step from there. If you are not using Web Switching Management, you can **Complete**, **Abort**, or **Fail** the selected instructed action from the Control Tool.

Condition Summaries

The Condition Summaries window lists all conditions, including notes, tags, pending deccommissions, and pending constructions.

This section includes the following topics:

- **Using the Condition Summaries Window**

- **Toolbar and Menu Options**

- **Using Condition Summaries Balloon Details**

- **Editing or Deleting Conditions**

Using the Condition Summaries Window

To view the Condition Summaries window, select **Condition Summaries...** from the Web Workspace **Actions** menu in.

The Condition Summaries includes the following fields and buttons:

- The **Type** column contains the type of condition, such as Note, Tag, Pending Construction, Pending Decommission, and Associated Document**.**

- The **Status** contains the status of the condition. Usually blank, but will list "Issued" for conditions that are part of an issued safety document. Other values may be configured.

- **Condition #** is the system-assigned identifier of the condition.

- The **Date Created** column contains the date and time the condition was created.

- The **Lift Station** column contains the name of the lift station that serves the asset on which the condition is located.

- The **Pressure Zone** column contains the name of the pressure zone that serves the asset on which the condition is located.

- The **User** column contains the user name of the individual who placed the condition.

- The **Asset** column contains the name of the asset on which the condition is located.

- The **Condition Info** column contains the text of the note or other condition.

Sorting and Filtering

The Conditions Summaries table supports common sorting and filtering functions. The predefined filters are based on the Condition Type; for example, the **Notes** filter selects all rows where the Type column has a value of *Note*.

See **Sorting and Filtering Data** on page 1-11 for additional information on using standard sorting and filtering features.

Toolbar and Menu Options

File Menu

Menu Option	Description	Toolbar Icon
Refresh	Refreshes the Condition Summaries window to display the most recent updates. If you edit a condition using the Edit button, you must refresh the summary to see your changes.	
Print Preview...	Displays the Print Preview window, from which you can view and print the summary.	
Delete Row...	Deletes the selected condition from the system. A confirmation dialog box prompts you to confirm before deleting. Once deleted, the condition disappears from both the Summary and the Viewer.	
Exit	Closes the Condition Summaries window.	--

Sort Menu

Menu Option	Description	Toolbar Icon
Sort Dialog...	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 1-12 for common sort functions.	
Condition #	Sorts the Conditions Summaries table by the Condition # column.	--
Asset	Sorts the Conditions Summaries table by the Asset column.	--
Date Created	Sorts the Conditions Summaries table by the Date Created column.	--

Filter Menu

Menu Option	Description	Toolbar Icon
Filter Dialog...	Displays the Filter dialog box. The Filter Dialog option on the Filter menu performs the same function. See **Using the Filter Dialog** on page 1-13 for more information.	
All Conditions	Displays all conditions.	--
Notes	Displays only rows with Type equal to *Note*.	--
Pending Construction	Displays only rows with Type equal to *Pending Construction*.	--
Pending Decommission	Displays only rows with Type equal to *Pending Decommission*.	--
Tags	Displays only rows with Type equal to *Tag*.	--

Actions Menu

Menu Option	Description	Toolbar Icon
Edit...	Opens the Edit balloon dialog. See **Editing or Deleting Conditions** on page 1-75.	
Enable View Balloon	Enables or disables balloon details. When enabled, a callout-like balloon opens that provides information, such as notes or related asset documents, for the selected row. See **Using Condition Summaries Balloon Details** on page 1-75 for more information.	
View...	Focuses the Viewer on the asset associated with the condition.	

Help Menu

Menu Option	Description	Toolbar Icon
Condition Summaries Help	Opens the online help system to the Condition Summaries help content.	--

Using Condition Summaries Balloon Details

The Condition Summaries Balloon Details displays asset information (e.g., note text and associated documents) for rows selected in the Condition Summaries list.

To enable Balloon Details:

1. Click **Balloon Details** (🗨) on the Condition Summaries toolbar. When enabled, the toolbar behind the Balloon Details button will be highlighted.

To view condition details:

1. Select a row in the Condition Summaries table. Balloon Details displays applicable information about the selected condition.

2. To close the balloon, click the close button (✖) in the balloon's top right corner.

Editing or Deleting Conditions

To edit a selected condition, click the **Edit** button (✏). The Edit balloon opens. This dialog box also appears if you double-click a condition when Balloon Details are turned off. From this dialog box, you can perform the following tasks:

*   Edit the condition information as desired, then click the **Save** (💾) button.

*   Click the **View** button (🔴) to focus the Viewer on the asset.

*   Click the **Print** button (🖨) to print the condition text.

*   Click the **Revert** button (↩) to revert to the last saved version of the condition text.

*   Click the **Help** button (❓) to launch online help for the dialog box.

*   Click the **Delete** button (✖) to delete the condition.

    Note: you can also delete a condition by selecting the condition row and clicking ✖ from the Condition Summaries toolbar.

Using the Alarms and Assets Lists

The Alarms and Assets Lists window provides the following views:

- **Abnormal Assets List**

- **Asset Operations List**

- **SCADA Alarms List**

- **System Alarms List**

To display the Alarms and Assets Lists window, select **Alarms and Assets Lists** from the Web Workspace **Tools** menu, then select one of the views listed above.

Menus and Toolbar

File Menu

Menu Option	Description	Toolbar Icon
Print...	Opens the print dialog box to allow you to print the current list.	🖨
Exit	Closes the window.	

Actions Menu

Action menu options vary by the list view.

Menu Option	Description	Tool bar Icon	Views
Acknowledge	Acknowledges the selected alarms.	✔	• System Alarms
Clear	Clears the selected alarms.	✏	• SCADA Alarms • System Alarms
Silence	Silences the selected alarms.	🔕	• SCADA Alarms • System Alarms
View...	Shows the associated asset in the Viewer.	◉	• Abnormal Assets • Asset Operations • SCADA Alarms

Note: Toolbar action options are also displayed as pop-up menu options when you right-click a row in a list view.

Filter Menu

Menu Option	Description	Toolbar Icon
Show Filter Dialog	Opens the Filter dialog box, allowing you to create, modify, apply, and save user-defined filters.	--
Abnormal Assets List	Opens the Abnormal Assets view.	--
All	Displays all alarms of the selected alarm type.	
Asset Operations List	Opens the Asset Operations view.	--
SCADA Alarms List	Opens the SCADA Alarms view.	--
System Alarms List	Opens the System Alarms view.	--

Help Menu

Menu Option	Description	Toolbar Icon
Help	Opens the online help content.	--

Abnormal Assets List

The Abnormal Assets view displays all assets that are not in their nominal state. For example, if a valve that is nominally closed is currently open, it will display in the Abnormal Asset Summary. If a SCADA system is integrated with Oracle Utilities Network Management System, any assets that are reported by a SCADA point as being in an off-nominal state will also display. This will also display any main breaks.

To access the Abnormal Asset Summary, select **Alarms and Assets Lists** and then **Abnormal Assets Summary…** from the Web Workspace **Tools** menu.

The Abnormal Assets List displays the following fields:

- The **Date** column contains the date and time that the asset was last operated.

- The **Pressure Zone** column contains the name of the pressure zone that serves the abnormal asset.

- The **Asset** column contains the name of the abnormal asset.

- 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 asset.

- The **Attribute** column contains the type of operation. In the Abnormal Assets List, this column displays 'status.'

- The **Nominal** column contains the normal state of the asset.

Asset Operations List

The Asset Operations List displays all recent operations performed in the user's control zones.

To access the Asset Operations List, select **Alarms and Assets Lists** and then **Asset Operations List…** from the Web Workspace **Tools** menu.

This list displays the same columns as the **Abnormal Assets List**.

SCADA Alarms List

The SCADA Alarms view is only available if your system supports SCADA extensions. For more information about SCADA extensions.

To access the SCADA Alarms List, select **Alarms and Assets Lists** and then **SCADA Alarms List…** from the Work Agenda Tools menu.

The SCADA Alarms List displays the following fields:

- The **Date** column contains the date and time the alarm was generated.

- The **Pressure Zone** column contains the pressure zone on which the asset in the alarm is located.

- The **Asset** column contains the identification of the asset 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 asset would be indicated by a digital value.

- The **Attribute** column contains the type of SCADA measurement (*e.g.*, pressure, temperature).

- The **Nominal** column contains the nominal value of the measurement that is in alarm (only for digital).

- The **Quality** column provides additional information about the SCADA measurement (*e.g.*, out of scan, inhibited, manual override) that is in alarm.

- The **Limit** column contains the configurable threshold value. If the analog crosses a low or high threshold, the system creates a limit alarm, and the threshold value appears here.

- 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.

- The **Silenced** column indicates whether a row has been silenced.

System Alarms List

The System Alarms List displays a list of all system alarms.

To access the System Alarms List, select **Alarms and Assets Lists** and then **System Alarms List…** from the Web Workspace **Tools** menu.

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.

- The **Silenced** column indicates whether a row has been silenced.

Acknowledging Alarms

To acknowledge an alarm, complete these steps:

1. In the Alarms and Assets 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.

   - The Silenced column is populated with a "Y."

Silencing Alarms

To silence an alarm, complete these steps:

1. In the Alarms and Assets 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.

   - The Silenced column is populated with a "Y."

- Subsequent new alarms will cause the audio notification to sound.

  Note: To turn audio notifications on or off, select **Audio Enabled** from the Web Workspace **Preferences** menu. The audio for the entire system (all alarms) will toggle on or off. See **Preferences Menu** on page 1-6.

Clearing Alarms from the List

To remove an alarm from the Alarms and Assets List, complete these steps:

1. In the Alarms and Assets 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.

Preventing an Asset from Reporting SCADA Alarms

To prevent an asset from reporting Alarms, complete these steps:

1. In the Alarms and Assets List, select the row of an alarm that belongs to the asset you want to inhibit.

2. Click the **Inhibit Alarm** button.

   - The asset will not report SCADA alarms until the inhibit is canceled.

   - An "I" appears next to the asset in the Viewer indicating the asset 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 asset; 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, select **User Log...** from the Web Workspace **Tools** menu.

The User Log window displays the following fields:

- The **User ID** field opens with the current user's identification, but the field may be edited to load log entries for a different user; for a different user log, enter their user ID and click **Load User Log** 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 **Load User Log** 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** field allows you to enter a user comment log entry.

- The **User Log Table** has the following fields:

  - 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 **Text** field displays a description of the log entry.

Menus and Toolbar

File Menu

Menu Option	Description	Toolbar Icon
Export Table...	Opens a dialog to allow you to save the table data to a comma separated value (csv) file.	
Print...	Opens the print dialog box to allow you to print the current list.	
Exit	Closes the window.	

Actions Menu

Menu Option	Description	Toolbar Icon
Load User Log	Loads the User Log for the for the current filter parameters (User ID, Begin Time, and End Time).	
Clear	Clears the user log.	
View...	Displays the asset associated with the log entry in the Viewer.	
Event Log...	Displays the Event Log for a selected user log entry associated with an event.	
Event Details...	Displays the Event Details window for the event associated with the selected log entry.	

Help Menu

Menu Option	Description	Toolbar Icon
User Log Help (**F1**)	Opens the online help system to the User Log help content.	

Adding Entries to the User Log

Comments may be entered for the current time or for the time associated with a selected log entry. When you begin to add text to the **User Comment** field, the button to add the entry will be sensitized; there are two types of buttons based on whether a row is selected in the User Log table ( ) or not ( ).

Adding New User Log Entries

To enter a new note to the User Log:

1. Enter the note text in the field and click the add button ( ) to submit the entry.

    Note: The **User Log** does not automatically refresh, so the new comment will not appear in the table until the user log is reloaded by clicking the Load User Log button ( ).

Adding an Associated User Log Entry

To enter a note associated to an existing User Log entry:

1. Select a User Log entry row to associate to a new note.

2. Enter the note text in the field and click the add to selected entry button ( ) to submit the entry.

    Note: The **User Log** does not automatically refresh, so the new comment will not appear in the table until the user log is reloaded by clicking the Load User Log button ( ).

Changing Entry Type Before Submitting User Log Entry

When you begin to add text to the User Comment field and the add button becomes sensitized, you may select or deselect a row to change the entry type.

For example, you want to enter a new note, but realize that the add associated comment button ( ) is sensitized, press Control and click the selected row to deselect; the button will change to the add new entry button ( ).

Chapter 2

Web Trouble

This chapter describes the Oracle Utilities Network Management System 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 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.

Managing Events with Web Trouble

Web Trouble includes tools that build upon the Web Workspace to help you manage trouble events. This section describes those tools and how to perform basic event functions. It includes the following topics:

- **Event Details**
- **Setting the Work Queue**
- **Event Grouping**
- **Associating and Unassociating Calls with Assets**
- **Working with Damage Assessments**
- **Updating the ERT for Selected Events**
- **Setting the System-Wide Estimated Restoration Time**
- **Using the Event Log**

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**

- **Copying Event Details to Related Partial Restoration Events**

- **Completing an Event**

Using the Event Details Window

To open Event Details, double-click the desired event's row in the Work Agenda. You can also select an event and then click the **Event Details** toolbar button or select **Event Details...** from the Actions menu.

The Event Details window is comprised of:

- **Menus and Toolbar**

- **Event Information Pane**

- **Job Actions Tab**

- **Completion Actions Tab**

- **Equipment Failure Tab**

Menus and Toolbar

The Event Details window displays a toolbar, as well as a Help and File. The Help menu displays the standard Help and About options. The table below describes the options on the File menu.

File Menu

Menu Option	Description	Toolbar Icon
Save	Saves the current event. If the event has already been completed, you are prompted to provide a reason for the update.	💾
Print Tab...	Opens the Print Preview dialog and allows you to print the current contents of the Job Actions tab.	🖨
Print All...	Opens the Print Preview dialog and allows you to print the contents of all three Event Details tabs.	🖨
Exit	Exits Event Details. You must press the **Save** button before pressing the **Exit** button if you wish to save any revisions you may have made.	--

Actions Menu

Menu Option	Description	Toolbar Icon
Complete Event	Sets the status of the current event to Complete. If the required fields (Remedy and Failure) have not been entered, this option will not be available. This option is not available when the event is a switching job or planned outage.	📋

Menu Option	Description	Toolbar Icon
Maintenance	Sets the status of the current event to Maintenance Pending. If the required fields (Remedy and Case Note) have not been entered prior to selecting, an error will be displayed that will list the missing information.	
Copy	Copies the case notes and details for the currently loaded event to all other events related to it based on its partial restoration.	
Event Log...	Opens the Event Log.	
Switching...	Opens the **Open or Create New Switching Sheet** dialog, which allows you to create a new switching sheet or open a switching sheet associated with the selected event. See **Open or Create New Switching Sheet** on page 3-67 for more information.	
View...	Show asset associated with the event in the Viewer.	

Event Information Pane

The top section of the Event Details window contains event attributes:

- The **Event #** is the number the system has assigned to the event.

- The **Asset** is the name of the asset associated with the event.

- The **Switching Plan #** is the switching sheet number associated with the event, if any. The switching sheet number is prefixed by the switching sheet type.

- **Zone** displays the control zones where the associated asset is located.

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 2-6.

The Job Actions tab displays the following fields and buttons:

- **Event Began** contains the date and time at which the event began. This field is editable except for switching jobs. For switching jobs, you must edit the Completed Date in the switching step itself. See **Steps Tab** on page 3-20 for more information.

- **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 restored). This field is editable except for switching jobs. For switching jobs, you must edit the Completed Date in the switching step itself. See **Steps Tab** on page 3-20 for more information.

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. User can modify values in this column as long as the changes do not alter the order of partial restoration steps. Changing partial restoration step operation time can affect outage restoration time if it is the final restoration step for the outage.

- The **Asset** column displays the asset 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 isolated 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 displays the estimated time from the current time to complete the restoration in hours and minutes. The Est Time to Restore (HH:MM) field is not displayed when the event is a non-outage or switching job. To set the ERT, enter a value in this field and click the Update ERT button.

- The **Est Restore Date** fields display the date and time of estimated restoration. The Est Restore Date fields are not displayed when the event is a non-outage. To clear the ERT (leave it blank), click the Clear ERT button.

- 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.

En Route/Onsite Crews Section

- The **Next Crew Contact Required at** table displays when the operator next anticipates receiving contact from associated crews.

  Use the **Reset Selected Crew Contact Time** button to reset the crew contact time to the date and time you enter in the **Date** field beside this button.

- The En Route/Onsite Crews table contains the following columns:

  - The **Crew ID** column of the table contains the crew name.

  - The **Contact** column displays the contact name for the assignment.

  - The **Mobile #** is the mobile phone number of the crew.

  - The **En Route Date** column contains the time at which the crew was placed en route to the event. This column is empty if the crew has not arrived yet.

  - The **On Site Date** column contains the time at which the crew arrived on site.

- The **Contact Required By** column contains the date and time at which the next contact is expected.

Completion Actions Tab

The Completion Actions tab 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 2-8.

The Completion Actions tab displays the following fields and buttons:

- **Event Began** contains the date 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 restored). 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.*, underground, supply, etc.).

  - The **Sub-System** indicates 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 asset that is experiencing the problem.

  - The **Failure** drop-down lets you specify the type of failure that is occurring.

  - The **Interrupting Asset** drop-down lets you specify the type of interrupting asset 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 **Interruption Indices** section displays the following fields:

  - The **Exclude This Event** 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 **Field** column contains the name of an **Event Details** field that changed after the event was completed.

  - The **Previous Value** column contains the value of the field prior to the change.

    Note: if multiple fields are edited post-completion, each change will be listed in a separate row.

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 other details.

For instructions on entering failed equipment details, see **Recording Failed Equipment Information** on page 2-7.

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.

- **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.

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** toolbar button or select **Event Detail...** from the Actions menu. 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 asset, complete these steps:

1. From the Event Details window, click on the Equipment Failure tab.

2. Select the manufacturer from the **Manufacturer** drop down menu.

3. Enter the serial number, dates of manufacture and installation, type, and size of the equipment, as applicable.

4. Click the **Save** toolbar button. The information is saved to the database for the event. The Event Details tab re-displays.

Copying Event Details to Related Partial Restoration Events

You can copy the case notes and other event details for the currently loaded event to all other events related to it based on its partial restoration.

> **Note**: Any previously stored Event Details information for the related events will be overwritten (except for system-populated fields such as Event #, Asset, Zones, Event Began, Est # of Cust Out, and Event Restored).

1. Select the event in the Work Agenda window.

2. Click the **Event Details** toolbar button or select **Event Detail...** from the Actions menu. The Event Details window opens.

3. Make any desired changes to the event details. Any comments you enter in the Operations Event Note will be applied to all related partial restoration events.

4. Click the **Copy** toolbar button or select **Copy** from the Actions menu. The corresponding event details are copied to all related partial restoration events of the currently displayed event. Note that ERT information is only copied to active related events.

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** toolbar button or select **Event Detail...** from the Actions menu. The Event Details window opens.

3. Click the **Completion Actions** tab.

4. Select the appropriate options from the drop-down menus. You must select either a Failure or a Remedy; additional options may be required, based on your configuration. Once the required options have been provided, the **Complete Event** button is enabled.

5. Click the **Complete Event** button or select **Complete Event** from the Actions menu. The event information is updated, the event is marked as "complete," and the Event Details window closes.

   > **Note:** if you do not select a Failure or Remedy prior to selecting Complete Event, the system will display a Validation error message to notify you that a Failure and/or Remedy is required.

Confirm Outages

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 Confirm Outages window. This window displays a table listing either all of the customers downstream of the predicted or confirmed outage asset (when accessed from the Work Agenda) or all of the customers connected to the selected asset (when accessed via the Control Tool).

This section includes the following topics:

- **Using Confirm Outages 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 Confirm Outages Window

To access the Confirm Outages window, do one of the following:

- Select **Confirm Outages…** from the Work Agenda Actions menu.

- Select an asset in the Viewer that has customers connected to it, bring up the Control Tool, then click on the **Confirm Outages…** button.

The Confirm Outages window displays the following columns:

- The **Asset** column contains the name of the asset the customer is connected to.

- The **Address** column contains the customer's address.

- The **Name** column contains the name of the customer.

- The **Customer Type** column contains the customer type code.

- The **Prediction** column contains the outage prediction type (*e.g.*, Confirmed Service, Confirmed Secondary), if available.

- 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 **Grouping** column contains "Yes" if the call for the customer is groupable. The column is empty if there are no calls for the customer or if the call is not groupable.

- The **Event #** column displays the number the system has assigned to the customer's event. If a customer call is made groupable, the event number will change if the call is grouped to an existing or repredicted event.

- The **Call Time** column displays the time when the customer call was received.

- The **Telephone** column contains the customer's telephone number.

- The **Account #** column contains the customer's account number.

Color Coding

The rows in the Confirm Outages 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
Orange	Confirmed Secondary Outage
Blue	Restored

Confirm Outages Menus and Toolbar

File Menu

Menu Option	Description	Toolbar Icon
Print...	Opens the print dialog box to allow you to print the current list.	
Refresh	Refreshes the data.	
Exit	Closes the Confirm Outages window.	--

Actions Menu

Menu Option	Description	Toolbar Icon
Confirm Service	Confirms a service outage for the selected rows.	--
Confirm Secondary	Confirms a secondary outage for the selected rows	--
Restore	Sets the outage to restored. The Restored column is populated with *Yes*.	--

Menu Option	Description	Toolbar Icon
Make Groupable	Makes the selected call groupable. The **Groupable** column is populated with *Yes*. This option is only available when a row for a customer with a non-groupable call is selected and the call is not part of a confirmed outage.	--
Event Details...	Opens the Event Details window for the selected event, if applicable.	
View...	Shows the associated asset in the Viewer.	

Help Menu

Menu Option	Description	Toolbar Icon
Confirm Outages Help	Opens the Confirm Outages online help content.	--

Creating a Confirmed Service Outage

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

1. Select the row in the Confirm Outages window for the applicable customer.

2. Select **Confirm Service** from either the right-click option menu or from the Actions menu.

3. The Confirm Outages window refreshes. The row for the selected customer is now colored green, and the **Prediction** column is now populated with "Confirmed Service". A new event row appears in the Work Agenda Trouble Event list. A **CSVO** symbol appears on the customer's asset 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 Confirm Outages window for the applicable customer.

2. Select **Confirm Secondary** from either the right-click option menu or from the Actions menu.

3. The Confirm Outages window refreshes. The row for the selected customer is now colored orange and the **Prediction** column is now populated with *Confirmed Secondary*. A new event row appears in the Work Agenda Trouble Event list. A **CSCO** symbol appears on the customer's asset 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 Confirm Outages window for the applicable customer.

2. Select **Confirm Service** as described above; the Confirm Outages window will refresh with the confirmed service data. Likewise, with the same row selected, select **Confirm Secondary**.

3. The Confirm Outages window refreshes. There are now 2 rows for the customer with **Prediction** column populated with the outage type (*i.e.*, **Confirmed Service** and **Confirmed**

Secondary). Both a CSVO and CSCO symbol appear on the customer's asset 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 Confirm Outages for the applicable customer.

2. Select **Restore** from either the right-click option menu or from the Actions menu.

3. The Confirm Outages window refreshes. The row for the selected customer is now colored blue and the **Restore** column is populated with *Yes*. The CSVO/CSCO symbol disappears from the customer's asset in the Viewer window (or the CSVO/CSCO numbers are decreased by one).

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** toolbar button or select **Referral...** from the Actions menu. 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.

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 an asset closed in the Viewer causing a segment of the model to be impacted) 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.

Behavior of Grouped Events

Once events have been manually grouped, the system will no longer repredict the outage asset nor will a manually grouped event be automatically merged into another event. However, other events and calls may be automatically merged into a manually grouped event.

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 unrelated 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 that 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.

Ungroup Events

To ungroup manually grouped events or repredicted upstream asset outages, complete these steps:

1. Select a grouped event in Work Agenda.

2. Select Undo Grouping from the Work Agenda Actions menu. The event will be ungrouped and new events will be created for the previously grouped events.

   Notes:

   • You cannot ungroup events with crew assignments, whether assigned, en route, onsite, or suspended.

   • If the grouped event was predicted (*e.g.*, a Predicted Asset Outage (PDO)), it is destroyed and the event number is lost along with any data entered in Event Details.

   • Ungrouped calls are put at the front of the grouping queue and then grouped normally.

Associating and Unassociating Calls with Assets

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

Associating a Fuzzy Call with an Asset

To associate a call with an asset, complete these steps:

1. Open a Viewer window and load the map containing the asset 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 asset you want to associate the fuzzy call to. The asset identification appears in the Asset 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 asset.

Unassociating/Reassociating a Call from/to an Asset

To unassociate a call from one asset and re-associate it to another asset, complete these steps:

> **Note:** If you are unassociating a call and you want to turn it into a fuzzy call, simply do not select an asset 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 active event that contains the calls you want to unassociate.

   > **Note:** you cannot unassociate a call from a restored or inactive event.

2. Click the **Trouble Info** toolbar button or select **Trouble Info...** from the Actions menu. Call information about the event appears in the Trouble Info window.

3. Open a Viewer window and load the map containing the new asset you would like to re-associate the calls with.

4. In the Trouble Info window, select the row for the call you wish to unassociate from its present asset.

5. Select **Unassociate** from the Trouble Info Actions menu. The Unassociate dialog box opens.

6. Select an asset in the Viewer to populate the New Asset field in the Unassociate dialog box.

7. Click **OK** on the Unassociate dialog.

   • The call is unassociated from the current asset and associated with the new asset, if specified.

   • The Oracle Utilities Network Management System Web Trouble analysis engine re-analyzes the event from which the calls were unassociated, as well as the unassociated calls using their new associated asset.

Working with Damage Assessments

The Damage Assessments feature provides summaries of existing damage assessments and methods for creating new damage assessments. When a crew in the field reports finding damage, you may record their findings in a damage assessment. New damage assessments may be associated with an existing event, an asset, or may be created as "fuzzy" events. Damage assessments include:

• Damage description

• Equipment needed for the repair.

• Crew types needed for the repair.

Based on the reported damage, the system will calculate estimated repair time for an event. If multiple damage assessments exist for an event, the system will calculate the estimated repair time by adding together estimated repair times from each active damage assessment. Damage assessment trouble codes have associated clue symbols, which will be displayed in Viewer at the damage locations.

Notes:

• Damage assessment incidents are not included in counts for the event.

• Damage assessment cannot be performed for switching jobs or meets.

Damage Assessment Window

The Damage Assessment window is used to create or edit damage assessment information. The Damage Assessment window is displayed when you do one of the following:

• Create a new "fuzzy" Damage Assessment by selecting **New** and then **Damage Assessment...** from the Web Workspace **File** menu or clicking the ![icon] button on the Web Workspace toolbar.

• Click the **Damage Assessment...** option from the Work Agenda **Actions** menu or the Control Tool to open the Damage Assessments window from which you may create a new damage assessment related to the selected event or asset or edit an existing damage assessment.

  • To create a new Damage Assessment, select **New...** from the Damage Assessments **File** menu.

  • To open an existing Damage Assessment, select the Damage Assessment in the table and select **Open...** from the Damage Assessments **File** menu.

Menu and Toolbar

File Menu

Menu Option	Description	Toolbar Icon
Reload	Reloads the data	![reload icon]
Save	Saves changes to the Damage Assessment	![save icon]
Assessed	The damage assessment is complete.	![assessed icon]

Menu Option	Description	Toolbar Icon
Obsolete	The damage assessment is no longer valid.	
Exit	Closes the Damage Assessment window.	--

The Damage Assessment window displays the following fields and buttons:

- **Event #** is the ID of the event associated with this damage assessment. **0** is displayed if an event has not yet been created for this damage assessment. Once event is created, click the Reload button to populate the field with the event ID.

- **Crew** is the crew that performed the damage assessment.

- The **Select Crew** button ( ) opens the **Select Crew** dialog so you can select a crew to associate with this assessment.

- **Mobile #** is the mobile number of the crew that performed the damage assessment.

- **Report Date** is the date and time when damage assessment was performed. Click the date-time icon to use the date picker to set the date.

Damage Location Section
- **Pressure Zone** is the name of the pressure zone.

- **Asset** is the asset alias. You may move the damage assessment to a different asset by editing this field.

  Actions

  - : search for an asset to associate to the damage assessment.

  - : link the currently selected asset to the damage assessment.

  - : view the asset in the Viewer.

- **Address** is the street address where the damage assessment was performed.

  Address Actions

  - : focuses the Viewer on the saved latitude and longitude coordinates.

  - : opens the Select Damage Location dialog box, which captures the latitude and longitude of a point selected in the Viewer. With the dialog box open and the Viewer in focus, the cursor will appear as a crosshair ( ) until you select a location; whenever you click in the Viewer, the Select Damage Location's **Latitude** and **Longitude** fields will update with values for that point. Click **OK** to add the selected coordinates to the damage assessment or click **Cancel** to reset the cursor and close the dialog box.

    Note: you may also press the escape key to reset the cursor.

- **Company** is the company-level control zone name.

- **Region** is the region-level control zone name.

- **Branch** is the branch-level control zone name.

- **Lift Station** is the lift station-level control zone name.

  Action

  - ⛁ : opens the Control Zone selection menu, which allows you to associate fuzzy damage assessment with a control zone. This is only possible during the initial creation of the damage assessment.

Damage Specifics Section

- **Section Affected** allows you to specific the section affected by the damage. You can select from a list or enter a value manually.

- **Location** allows you to specify the damage location. You can select from a list or enter a value manually.

- The **Load Affected** checkbox indicates whether the damage affects customers. If checked, the damage assessment will generate an outage incident; otherwise, a non-outage incident will be generated. When damage assessment is performed for an existing non-outage, this checkbox will be unchecked and non-editable.

- The **Street Light Damage Noted** checkbox indicates whether street line damage is reported.

- The **Road Blocked** checkbox indicates whether a blocked road is reported. When the **Load Affected** checkbox is checked, this checkbox will be unchecked and non-editable (road blocked is a non-outage condition).

- The **Required Crew Types** indicates the types of crews needed to repair the damage. Check each one that applies.

- The **Damage Type** column in the Damage Specifics table displays all known types of damage.

- The **Accessible** column in the Damage Specifics table displays the number of accessible instances of a particular type of damage. Enter a value for each applicable damage type. When you modify a row, its background changes to green.

- The **Inaccessible** column in the Damage Specifics table displays the number of inaccessible instances of the particular type of damage. Enter a value for each applicable damage type. When you modify a row, its background changes to green.

- **Comments** contains any remarks associated with the damage specifics.

Required Material Section

- The **Add Required Part** button opens the Add Required Part dialog so you can select a part and specify a quantity.

- The **Remove Required Part** button allows you to mark a row in the Required Material list for removal. Rows marked for removal display a red background.

- **Part ID** contains the IDs of parts required to repair the damage.

- **Part Name** contains the names of parts required to repair the damage.

- **Quantity** displays the quantity of the specified part.

- **Comments** displays remarks associated with the required material.

- The status bar displays the damage assessment status (New, Assessed, Complete, or Obsolete) and the estimated time to repair the reported damage. This is calculated from the information entered into the Damage Specifics table.

Attachments Section

The Attachments section allows you to attach a file or link an externally stored file to the damage assessment.

Actions

- : opens the Attach Files dialog that allows you to attach a file to the damage assessment. Maximum size of the attachment is 50M.

- : opens the Add Link dialog that allows you to add a link to an externally stored attachment that is accessible with an URL. To add a link, complete the following fields:

    Name: a name that is unique to the damage assessment.

    URL: link to attachment.

    Description: short description of the attachment contents.

    Click **OK** to add the attachment link or click **Cancel** to abort the action.

- : marks the selected attachments for removal.

- : opens the selected attachment. Links are opened in a web browser. Files are opened using application associated with the given file type.

- : saves local copies of the selected attachments. Only the file attachments can be saved.

Table Columns

- **Name:** attachment name (unique within a single damage assessment)

- **File Size:** attachment size in bytes (0 for links)

- **Modified Date:** last modification date for file attachments

- **Status:** status of the attachment (New, Modified or Deleted)

- **Link:** URL of the externally stored attachment

- **Description:** attachment description

Creating Fuzzy Damage Assessments

When a crew reports damage that is not associated with an event in the system, you may create a fuzzy damage assessment and link it to a location in the Viewer. Like with creating an event, you may create a fuzzy damage assessment for an outage or non-outage situation.

1. Open the Viewer to the general location of the damage.

2. Create a new damage assessment by clicking the new Damage Assessment button () in the Web Workspace toolbar.

3. Click the location selection button () to open the Select Damage Location dialog box.

4. Click the location in the Viewer where the damage was found. The Select Damage Location dialog will be populated with the latitude and longitude data from the Viewer.

5. Click **OK** to accept the latitude and longitude.

6. Add any other known information to the damage assessment and click the **Save** button ().

7. Close the Damage Assessment.

When you reopen the damage assessment, click the damage location focus button () to open the Viewer and focus on the saved coordinate data.

Fuzzy damage assessment can be associated to an asset by populating the **Asset** field with the valid asset alias (either by entering it directly or selecting asset in the Viewer) and then saving the damage assessment.

Using the Damage Assessments Window

The **Damage Assessments** window displays summary information for damage assessment records associated with an event.

Menu and Toolbar Options
File Menu

Menu Option	Description	Toolbar Icon
New...	Create a damage assessment in the Damage Assessment tool.	
Open...	Open the currently selected record in the Damage Assessment window.	
Reload	Reload the table data.	
Print...	Print the content of the Damage Assessments table.	
Exit	Closes the Damage Assessments window.	--

Actions Menu

Menu Option	Description	Toolbar Icon
View...	Focuses the Viewer on the asset associated with the selected damage assessment.	

Filter Menu

Menu Option	Description	Toolbar Icon
Active	Show all active Damage Assessments.	--
Complete	Show all complete Damage Assessments.	--
Auto Filter Off	Clears any autofilter values that were set by right-clicking a Damage Assessment record in the table and selecting **Auto Filter**.	--
Show Filter Dialog	Open the filter dialog to choose filter criteria.	--
All	Show all damage assessments.	--

Help Menu

Menu Option	Description	Toolbar Icon
Damage Assessments Help	Opens the online help system to the Damage Assessments help content.	--

Damage Assessments Table

- **Status** is the status of the listed damage assessment.

  - New: the initial state of a damage assessment.

  - Assessed: the assessment is done. Damage Assessments in the Assessed state are included in estimated repair time calculations.

  - Complete: the event has been restored.

  - Obsolete: the damage assessment no longer applies to the event.

- **Event #** is the event number associated with the damage assessment.

- **Report Date** is the date and time when damage assessment was performed.

- **Crew** is the crew that performed the damage assessment.

- **Mobile #** is the crew's mobile number.

- **Pressure Zone** is the name of the pressure zone.

- **Asset** is the asset alias.

- **Address** is the damage location address.

- **Region** is the region-level control zone name.

To view, edit, or create damage assessment information for an event:

1. Select an event from the Event List in the Work Agenda.

2. Select **Damage Assessment...** from the Actions menu. The **Damage Assessments** window opens. If any damage assessment records exist for this event, they are displayed in the table.

Creating a New Damage Assessment for an Event

To create a new damage assessment:

1. Click the **New** button on the toolbar. The Damage Assessment window opens. The following fields are pre-populated: Event #, Crew (if the outage has a single crew assigned/ en-route or onsite), Report Date, and the Damage Location (based on the location of the outage asset).

2. Complete additional fields on this screen as needed. See the following section for field descriptions.

3. Click the **Save** button on the toolbar.

4. Use the **Complete** toolbar button to complete the damage assessment. When a damage assessment record is completed, its status changes to inactive and its symbol is removed from Viewer.

Updating the ERT for Selected Events

You can set the estimated restoration time for one or more events selected in Work Agenda.

> **Note**: Updating the ERT from the Work Agenda is not allowed for some event types. For Notify Alarms, Planned Outages, and Switching jobs, the user cannot set or clear the ERT. For Non Outages, Critical Meets, and Future Meets, you can clear the ERT, but cannot set it.
>
> If the ERT update operation cannot be performed on one or more of the selected events, the *Ignored ERT Updates* dialog will be displayed when the other updates have completed. The *Ignored ERT Updates* dialog list the events where the ERT was not updated.

To set the ERT for selected events, follow these steps:

1. From the Work Agenda events list, select all the events for which you want to update the ERT.

2. Select **Update ERTs...** from the Actions menu. The Update ERT dialog opens.

3. Enter the new ERT using the calendar tool.

4. Click the **Set ERT** button. The Update ERT dialog closes, and the new ERT value is displayed for the selected events in the Work Agenda list.

Clearing the ERT

To clear the ERT for events selected in Web Work Agenda, follow these steps:

1. Selects one or more events in Web Work Agenda.

2. Select **Update ERTs…** from the Actions menu. The Update ERT dialog opens.

3. Click the **Clear ERT** button. The Update ERT dialog closes, and the ERT values for the selected events are cleared in the Work Agenda list.

Setting the System-Wide Estimated Restoration Time

Use this procedure to view and modify the system-wide default ERT value. The system-wide ERT is used for all events; it overrides any default ERTs defined at the control zone/asset class level in the Configuration Assistant.

To set the system-wide default, follow these steps:

1. Select **System-Wide Default ERT…** from the Web Work Agenda Actions menu. The System-Wide Default ERT dialog opens.

2. Enter a new value in the New System-Wide ERT field, using the calendar tool.

   > **Note**: Only future dates are allowed.

3. Click the **Set ERT** button. The dialog closes and the specified ERT becomes the default for any new events for which no specific default is specified. All not completed events with an Est Src value of I or N in the Work Agenda will have their ERT values reset to the system-wide default ERT value.

   > **Note:** This action 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 number of events present.

Clearing the System-Wide Estimated Restoration Time

Use this procedure to clear the system-wide default ERT value so that all events will use the default values specified for their control zone and asset class combination, as defined in the Configuration Assistant. (See **Adding an Asset/Zone-Based Default Restoration Time** on page 5-29.)

> **Note**: If you clear the system-wide default ERT and no default ERT has been defined that matches the control zone/asset class of an event, the event will not be assigned a default ERT. The ERT will remain empty for the event unless you manually change it.

To clear the system-wide default, follow these steps:

1. Select **System-Wide Default ERT…** from the Web Work Agenda Actions menu. The System-Wide Default ERT dialog opens.

2. Click the **Clear ERT** button. The dialog closes and the previously specified ERT is no longer used as the default for any new events. The ERT for an event will default to the value defined for its control zone and asset class.

> **Note:** This action 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 number of events present.

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 new note.

To display the Event Log for a particular event, select a row in the Work Agenda list and select **Event Log...** from the Actions menu. The Event Log opens, displaying all log entries for this event. The Operations Event Notes field is populated with the comments for this event.

The Event Log displays the following menu and toolbar options:

File Menu

Menu Option	Description	Toolbar Icon
Export Table...	Opens a dialog to allow you to save the current table view data to a comma separated value (csv) file.	
Print...	Print the Event Log.	
Exit	Closes the Event Log window.	--

Actions Menu

Menu Option	Description	Toolbar Icon
Load Action Steps	Load the action steps for the event listed in the **Event #** field.	
Clear	Clears current event information from the window.	

Menu Option	Description	Toolbar Icon
View...	Focuses the Viewer on the asset associated with the event.	
Event Details	Open event information in the Event Details window.	

- The **Event #** field displays the event identifier. This field is editable so that a user can load a different event by entering a number.

- The **Operations Event Notes** field displays the existing Operations Event Notes for the event.

- Add note text in the top field and click the **Add** button ( ) to add the note.

  Note: The Event Log table does not automatically refresh, so the new note will be displayed the next time the event is loaded.

- The table displays a list of log entries. For each entry, the following columns are displayed:

  - 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 **Event** field displays the identifier of the original event for which the log entry was generated. Note that, due to grouping activities, the original event may no longer exist.

  - The **Text** field displays a description of the log entry.

Clear Data and Load Event Log

To display entries for a different event:

1. Click the **Clear** button ( ) or select **Clear** from the **Actions** menu to clear the entire tool.

2. Enter a new event in the Event # field.

3. Click the **Load Action Steps** button ( ) or select **Load Action Steps** from the **Actions** menu to repopulate the table with the action steps for the new event listed in the **Event #** field.

Managing Crews with Web Trouble

Oracle Utilities Network Management System – Web Trouble allows you to manage crews efficiently. This section describes the various windows and functions that relate to managing crews. It includes the following topics:

- **Crew Actions**
    - **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**
    - **Activating a Crew** and **Making a Crew Inactive**
    - **Setting a Crew's Status to On Shift** and **Setting a Crew's Status to Off Shift**
    - **Deleting a Crew**
    - **Filtering Crew Lists**
- **Crew Makeup**
    - **Creating a New Crew**
    - **Removing Personnel from a Crew**
    - **Removing a Vehicle from a Crew**
    - **Editing a Crew**
- **Crew Info**
    - **Unassigning a Crew**
    - **Placing a Crew En Route to an Assigned Event**
    - **Suspending a Crew**
- **Active Job Info**
    - **Moving a Crew**
    - **Releasing Crews from an Event**
    - **Updating Event Information**

Crew Actions

Use the Crew Actions window to view and manage crews. The Crew Actions window opens by default when you login to Oracle Utilities Network Management System Web Workspace. It is displayed below the Web Work Agenda window. You can also display this window by selecting **Crew...** from the Web Workspace **Tools** menu.

The Crew Actions window displays a **Menu and Toolbar** and provides two views: **Crew List View** and **Crew Icons View**.

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**
- **Transferring a Crew to a Temporary Control Zone**
- **Activating a Crew** and **Making a Crew Inactive**
- **Setting a Crew's Status to On Shift** and **Setting a Crew's Status to Off Shift**
- **Deleting a Crew**

Menu and Toolbar

The Crew Actions window displays a toolbar and menu bar, as described in the following tables.

File Menu

Menu Option	Description	Toolbar Icon
New...	Opens the Crew Makeup window, which allows you to define a new crew.	
Delete	Deletes the currently selected crew after prompting for confirmation. This is enabled only if an inactive non-mobile crew is selected.	
Export Table...	Opens a dialog to allow you to save the current table view data to a comma separated value (csv) file.	
Exit	Closes the Crew Actions window.	--

View Menu

Menu Option	Description	Toolbar Icon
Icons	Switches to the Icons view if the List view is currently active.	--
List	Switches to List view if Icons view is currently active.	--

Filter Menu

Menu Option	Description	Toolbar Icon
Shift Status	Filters by shift statuses. The product environment includes the following shift options: • All • On Shift • Off shift • Inactive	--
Job Status	Filters by job statuses. The product environment includes the following job status options: • All • Available • Assigned • En Route • Onsite • Suspended • Unavailable	--
Crew Type	Filters by crew types. The product environment includes the following crew type options: • All • Service • Trouble • Eval	--
Event Zone	Filters crews by the zone of the event selected in the Work Agenda. The product environment includes the following event zone options: • All • Region (Control Zone Hierarchy Level 2) • Branch (Control Zone Hierarchy Level 3)	--
Parent Zones	Filters crews by parent Control Zone. • Include - Display crews created for zones that are parents of the subscribed zones • Exclude - Excludes crews created for zones that are parents of the subscribed zones	

Actions Menu

Menu Option	Description	Toolbar Icon
Edit...	Opens the Crew Makeup window, which allows you to edit the currently selected crew. This is enabled only if a non-mobile crew is selected.	✏️
Crew Info...	Opens the Crew Info dialog for the selected crew.	ℹ️
Switching...	Opens the switch plan to which the selected crew is associated. This is enabled only if a crew is selected and Web Switching Management is licensed for your system. If more than one plan is associated with the crew, a dialog prompts you to select one.	--
View…	Opens Viewer 1, focused on the asset where the selected crew is en route or onsite, and selects event in the Work Agenda Event List to which the crew is en route or onsite. This is enabled only if an en route or onsite crew is selected.	◎
Locate Crew...	Displays the selected crew in the Viewer window at the current coordinates of the crew. This option is available only for crews with AVL (Automatic Vehicle Location) systems.	--
Availability...	Opens the Update Crew Availability dialog for the selected crew. See **Changing Crew Availability** on page 2-31.	🗑
Assign	Assigns the selected crew to the event currently selected in Work Agenda.	🔧
En Route	Puts the selected crew en route to the event currently selected in Work Agenda. This is enabled only if the selected crew is an on-shift, available, non-mobile crew that is not currently en route or onsite.	🚚
Active Job Info...	Opens the Active Job Info dialog for the selected crew. This is enabled only if an en route or onsite crew is selected.	📋
Onsite	Puts the selected crew onsite at the event currently selected in the Work Agenda. This is enabled after the crew is en route.	🛠
Toggle Mobile On	Turns off override for a crew that is currently overridden by the Toggle Mobile Off action.	--
Toggle Mobile Off	Overrides the selected crew to act as a non-mobile crew. Enabled if an active off shift mobile crew is selected. Not available to view only users.	--
Activate	Activates the selected crew. This is enabled only if an inactive non-mobile crew is selected.	--

Menu Option	Description	Toolbar Icon
Deactivate	Deactivates the selected crew. This is enabled only if the selected crew is an off-shift, active non-mobile crew that has no assignments.	--
Set On Shift...	Opens a dialog that allows you to enter an on-shift time for the selected crew. This is enabled only if an off-shift active crew is selected.	--
Set Off Shift...	Opens a dialog that allows you to enter an off-shift time. This is enabled only if the selected crew is an on-shift crew that is not en route or onsite.	--
Transfer Zone...	Temporarily transfer the crew to a different control zone.	--
Release Temporary Zone	Return the crew from its temporary control zone assignment back to its original control zone.	--

Crew List View

The Crew List view on the Crew Actions window displays a list of crews, in table format. The crews that appear in the list are based on the current filter settings. See **Crew Status** on page C-1 for a list of color codes used to indicate crew status.

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 **Pressure Zone** column contains the pressure zone for the asset where the crew is en route/onsite.

- The **Asset** column contains the name of the asset 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 **# Assign** column contains the number of events assigned to the crew.

- The **Hours Worked** column contains the length of time the crew has been active.

- The **Mobile** column indicates whether this is a mobile crew.

- The **Shift Status** field displays the crew's current shift status. Valid statuses are:

    - Inactive

    - Off Shift

    - On Shift

- The **Job Status** field displays the crew's current job status. Valid statuses are:

  - Available

  - En Route

  - Onsite

  - Suspended

  - Unavailable

Crew Icons View

The Crew Actions window displays buttons to represent the each crew. In this view, use the Actions menu to perform actions on the selected crew icon. As the crew's status changes, a symbol will be added to the button that depicts the current status; see **Event Status Codes** on page B-1 for the symbol icons that correlate to each status. See also **Crew Status** on page C-1 for a list of color codes that may be used to indicate crew status when cell or row coloring is enabled in the Web Workspace **Preferences** menu.

Activating a Crew

You can set a crew to Inactive status to indicate that it is available for work. You can only activate a crew if its current status is Inactive.

To activate a crew, complete these steps:

1. In the Crew Actions window, select the inactive crew you want to activate.

2. Select **Activate** from the Actions menu. (In List view, you can also right-click the crew and then select **Activate** from the pop-up menu.) The status changes to Off Shift.

    Note: You cannot activate a crew if its Mobile is Yes. You must choose the **Toggle Mobile Off** option on the Actions menu to change the mobile status before activating. The Mobile Flag columns displays No (Override), indicating that the crew's mobile status has been manually overridden.

3. You can now set the crew's status to On Shift. See **Setting a Crew's Status to On Shift** on page 2-29.

Setting a Crew's Status to On Shift

Setting an active crew's status to On Shift indicates that the crew has started working the shift and sets the time the crew sent on shift. You can only set a crew's status to On Shift if its current status is Active.

To put a crew On Shift, follow these steps:

1. In the Crew Actions window, select the active crew you want to put On Shift.

2. Select **Set On Shift...** from the Actions menu. (In List view, you can also right-click the crew and then select **Set On Shift...** from the pop-up menu.) The Set Crew On Shift dialog opens.

3. To set the On Shift time to the current time, click **OK**.
    To specify a different time, click the button and then select the date/time the crew went on shift. Click **OK** to close the dialog. The On Shift Time field is populated with the selected date/time.

4. Click **OK** to set the shift time. The crew's status changes to On Shift.

Setting a Crew's Status to Off Shift

Setting an active crew's status to Off Shift indicates that the crew has stopped working the shift and sets the time at which the crew went off shift. You can only set a crew's status to Off Shift if it's current status is On Shift.

To put a crew Off Shift, follow these steps:

1. In the Crew Actions window, select the On Shift crew you want to put Off Shift.

2. Select **Set Off Shift...** from the Actions menu. (In List view, you can also right-click the crew and then select **Set Off Shift...** from the pop-up menu.) The Set Crew Off Shift dialog opens.

3. To set the Off Shift time to the current time, click **OK**.
    To specify a different time, click the button and then select the date/time the crew went off shift. Click **OK** to close the dialog. The Off Shift Time field is populated with the selected date/time.

4. Click **OK** to set the shift time. The crew's status changes to On Shift.

Making a Crew Inactive

You can deactivate a crew to indicate that it is not available for work. You can only deactivate a crew if its current status is Active or Off Shift and it has no current assignments.

To deactivate a crew, complete these steps:

1. In the Crew Actions window, select the active or off shift crew you want to deactivate.

2. Select **Deactivate** from the Actions menu. (In List view, you can also right-click the crew and then select **Deactivate** from the pop-up menu.) The status changes to Inactive.

Deleting a Crew

To delete a crew, complete these steps:

> **Note**: You can only delete a crew if it is inactive. You cannot delete a mobile crew, even if the mobile flag has been overridden.

1. If the crew is active, you must first deactivate it (see **Making a Crew Inactive**). If a crew is on shift, you must first set the crew to off shift (see **Setting a Crew's Status to Off Shift**) and then deactivate it before you can delete it.

2. Select the crew in the Crew Actions window.

3. Select **Delete** from the Actions menu. (In List view, you can also right-click the crew and then select Delete from the pop-up menu.) A dialog prompts you to confirm the deletion.

4. Click **OK**. The crew is deleted from the system.

Assigning a Crew

Assigning a crew adds the event for the crew's to work queue.

> **Note:** You do not have to assign a crew to an event before placing it en route.

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. Select **Assign** from the **Actions** menu. (In List view, you can also right-click the crew and then select **Assign** from the pop-up menu.) 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:

> **Note**: You can only place a crew en route to an event if the crew is an on-shift, available, non-mobile crew that is not currently en route or onsite to an event.

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.

3. Select **En Route** from the Actions menu. (In List view, you can also right-click the crew and then select **En Route** from the pop-up menu.) 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 window. 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. Select **Availability…** from the Actions menu. (In List view, you can also right-click the crew row and select **Availability...** from the context menu.) The Update Crew Availability dialog box opens.

3. Select the appropriate option to change the crew's availability.

   - **Available** button to make the crew available
   - **Unavailable** to make it unavailable

   If you are making an available crew unavailable, select the **Description** field and add a brief reason for the change (*e.g.*, on break).

   > **Note:** The description text is shown in the description field until you set the crew back to available.

4. Click **OK** to confirm your change or **Cancel** to abort the action.

If the crew has been made unavailable, the Crew ID will be displayed in yellow as will the crew icon.

> **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 then select the **View** toolbar button or select **View...** from the Actions menu. The event row is highlighted in the Work Agenda Trouble Events list, and Viewer 1 focuses on the asset 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 asset if you have the Viewer 1 window open.

Transferring a Crew to a Temporary Control Zone

To transfer a crew to a temporary control zone, perhaps to offset a crew shortage in the zone, compete these steps:

1. Select the crew to transfer control.

2. Select **Transfer Zone...** from the Actions menu.

3. Select a control zone in the Transfer Crew Zone dialog.

4. Click **OK** to complete the transfer.

Returning Control of a Transferred Crew

To return control of the crew to their usual control zone, compete these steps:

1. Select the crew from the crew list.

2. Select **Release Temporary Zone** from the Actions menu.

The crew list will update to show that the crew's control zone has reverted to their permanent assignment.

Filtering Crew Lists

Crews may be filtered in either of the Crew Actions views (*i.e.*, List or Icons). Filters may be applied in any of the following ways:

1. **Filter Menu Options**

   • Choose any combination of options from the Shift Status, Job Status, and Crew Type to view only those crews meeting the criteria.

2. **List View Dynamic Filtering**

   • Enter filter criteria in the List View Dynamic Filter field at the top of each column in the crew table.

3. **Filter by Work Agenda Event Criteria**

   • Select an event zone option from the **Event Zone** sub-menu of the Crew Actions **Filter** menu.

   • Select one or more events in the Work Agenda that are in a control zone.

   • The Crew List will display only those crews assigned to the control zone.

   > **Note:** if you select multiple rows in the Work Agenda that cross multiple control zones, the Event Zone filter will be removed from the Crew List or Crew Icons views. Once you select a single row or rows with events in the same control zone, the filter will be re-enabled automatically.

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 Actions 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.*, 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 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 Actions 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 Control 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 Control 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 or by clicking the **Edit** toolbar 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 Info

The Crew Info window displays detailed crew information not shown in Crew Actions window. 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 the following:

1. From the Crew Actions window List view, select the row of the crew you want to view.

   From the Crew Actions window Icons view, select the icon of the crew you want to view.

2. Click on the **Crew Info…** button or select **Crew Info...** from the Actions menu.

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 **Status** field displays the crew's current status. Valid statuses are:

  - Inactive

  - Off Shift

  - On Shift

- The **Mobile Flag** field indicates whether this is a mobile crew.

- The **Out of Range** field indicates whether the crew is currently out of range (no connectivity).

Personnel Section

- The **Name** column displays the names of all the crew members.

- The **Job Title** column displays the job titles of all crew members.

- The **Empl ID** column displays the employee ID of all crew members.

Vehicles/Equipment Section

- The **Type** field displays the vehicle types assigned to the crew.

- The **Vehicle ID** column displays the ID of all vehicles assigned to the crew.

Active Job Section

- The **Event #** field displays the event number of the event where the crew is currently en route/onsite, if any.

- The **Pressure Zone** number displays the name of the pressure zone for the asset where the crew is currently en route/onsite, if any.

- The **Est Restore Time** field displays the date and time when the event to which the crew is en route/onsite is estimated to be restored.

- The **Asset** field displays the name of the asset related to the event.

Current Assignment Section

- The **Event #** column contains the event number of the event the crew is assigned to.

- The **Assign Time** column contains the time the crew was assigned to the event.

- The **Pressure Zone** column contains the name of the pressure zone involved in the event.

- The **Asset** column contains the name of the asset related to the event.

- The **# Calls** column contains the number of customer calls received for the event.

- The **# Out** column contains the estimated number of customers experiencing an outage for the event.

- The **Suspended** column indicates whether the assignment was suspended.

Context Menu

- The **Drop Assignment** context menu option removes the selected event from the list of crew assignments.

- The **Place En Route** context menu option 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.

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 Crews from an Event**

- **Suspending a Crew**

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. Select **Active Job Info…** from the Actions menu. (From the List view, you can also right-click the crew and select **Active Job Info...** from the pop-up menu.) 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 **Pressure Zone** number displays the name of the pressure zone for the asset where the crew is en route/onsite.

- The **Asset** field displays the name of the asset 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 drop-down 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 specify a different time.

- The **Suspend Crew** checkbox indicates whether the crew is suspended. To suspend this crew, click the checkbox. The field to the right of the checkbox is editable and populates with the current time when you check this box. You may use the calendar button to specify a different 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 an asset 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, the 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 then selecting **Active Job Info…** from the Actions menu.

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. You can add event notes 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 asset 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 asset 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 asset. It is not required or necessary to move the crew, but moving the crew to the actual asset 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 by selecting the crew in the Crew Actions window and then selecting **Active Job Info…** from the Actions menu.

2. Click the **Move Crew…** button. The Choose Work location dialog box opens.

3. Select the new asset location in the Viewer window or select an event in the Work Agenda Trouble Events list that has the same asset as the one where the crew is currently working.

4. Click **OK**. The crew symbol moves on the Viewer map and the crew's Asset updates in the Active Job Info, Crew Info, and Crew Actions windows. The crew remains en route to/onsite at that same event.

Releasing Crews from an Event

You may release crews from an en route/onsite event using the Work Agenda, the Crew Actions Active Job Info window, or from event or crew symbology in the Viewer.

Releasing a Crew from the Active Job Info

1. Open the Active Job Info window for the crew you want to release by selecting the crew in the Crew Actions window and then selecting **Active Job Info…** from the Actions menu.

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 Info window.

   • The crew button/row changes to white (if the crew is not assigned to another event).

   • The Active Job Info window closes.

Releasing Crews from an Event Selected in the Work Agenda

1. Select a row in the Work Agenda with en route or onsite crews.

2. Select **Release Crews...** from the Actions menu. The **Release Crews** dialog box opens listing the crews assigned to the event. One or more crews may be selected:

3. Click a crew name to select one crew.

   To select additional crews:

   • Click, hold, and drag to select multiple adjacent crews.

   • Control-click to select multiple non-adjacent crews.

4. With the crews selected, click **Release** to release the crews from the event.

The Release Crew dialog box will close, the crew will no longer be associated with the event, and the crew symbology will disappear from the Viewer.

Releasing a Crew from the Crew Symbol in the Viewer

1. Right-click the crew symbol in the Viewer.

2. Select **Release Crew** to release the crew from the event.

Releasing Crews from an Event Symbol in the Viewer

1. Right-click the event symbol.

2. Select **Release Crews...** from the option menu. The **Release Crews** dialog box opens listing the crews assigned to the event. One or more crews may be selected:

3. Click a crew name to select one crew.

   To select additional crews:

   • Click, hold, and drag to select multiple adjacent crews.

   • Control-click to select multiple non-adjacent crews.

4. With the crews selected, click **Release** to release the crews from the event.

The Release Crews dialog box will close, the crew will no longer be associated with the event, and the crew symbology will disappear from the Viewer.

Suspending a Crew

You can suspend a crew that is currently en route or on site to an event. Suspending the crew indicates that the crew is not able to complete the work at this time and is expected to resume work on the assignment at a later time.

To suspend 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 by selecting the crew in the Crew Actions window and then selecting **Active Job Info…** from the Actions menu.

2. Click the **Suspend** checkbox. The suspend date and time defaults to the current date and time. To specify a different date and time, click the calendar icon and then select the date and time the crew was suspended.

   The following occurs:

   • The Active Job Info window closes.

   • The crew button in the Icons view and the crew row in the List view change to the Suspended color (orange, by default).

   • The Current Assignments table in the Crew Info window displays Yes in the Suspended column for this assignment.

Using Drag and Drop

Oracle Utilities Network Management System Web Workspace supports drag and drop between Crew Actions 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 an asset in the Viewer either by dragging a crew icon from the Crew Actions window to the affected asset in the Viewer, or by dragging a crew symbol on another asset already in a Viewer to the affected asset.

> **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 Window

To place a crew en route from the Crew Actions window using drag and drop, complete these steps:

1. Focus the Viewer on the asset that has the event you wish to place the crew en route to.

2. In the Crew Actions window, click on an undispatched, available crew and drag your cursor into the Viewer window, positioning it over the asset associated with the event you wish to place the crew en route to.

3. When you see the desired asset highlighted in the Viewer, release the mouse button.

   • If multiple events are on the asset, 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 asset. The Crew Actions 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 asset that has the event you wish to place the crew en route to.

3. When you see the asset highlighted in the Viewer, release the mouse button.

   - If multiple events are on the asset, 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 asset. The crew is released from its previous event and placed en route to the new event. The Crew Actions 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 asset 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 asset 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 asset. You are not required to move the crew to the actual asset location, but moving the crew can help you keep more accurate track of what is going on in the field.

Moving a Crew from the Crew Actions Window

To move a crew from the Crew Actions window using drag and drop, complete these steps:

1. Focus the Viewer on the asset you wish to relocate the crew to.

2. In the Crew Actions window, click the en route crew and drag your cursor into the Viewer window, positioning it over the asset that has the event you wish to relocate the crew to.

3. When you see the relocation asset highlighted in the Viewer, release the mouse button. A confirmation dialog appears.

4. Click **OK** 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 asset 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 asset that you wish to relocate the crew to.

3. When you see the relocation asset 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 Asset**
- **Unassociating/Reassociating a Call from/to an Asset**
- **Editing Clues**

Changing Rule Sets

Rule sets are a collection of analysis rules that Oracle Utilities Network Management System Web Trouble uses to determine how and when certain assets 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 asset outages to cause an upstream prediction to them.

You can change the rule set for control zones over which you have authority over using the Authority window.

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

1. Select **Authority** from the Tools menu in the Work Agenda. 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 Web Trouble 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 four views; the view that opens initially depends on where you open the window from.

The table below describes the various Trouble Info views.

View	Description	Toolbar Icon
Callers View	Lists all calls associated with an event.	
Customers View	Lists all the customers: • located on or downstream from a given asset, when accessed via the Control Tool • affected by a given event, when accessed via the Work Agenda Trouble Event lists	

Trouble Info Window Features

The Trouble Info window changes dynamically based on the view. The following tables describe the menus and toolbar actions available in the Trouble Info views.

File Menu

Menu Option	Description	View	Toolbar Icon
Callers	Changes the Trouble Info window to the **Callers View**.	All	
Customers	Changes the Trouble Info window to the **Customers View**.	All	
Export Table...	Opens a dialog to allow you to save the current table view data to a comma separated value (csv) file.	All	
Print	Opens the Print Preview dialog, allowing you to print the current contents of the current view.	All	
Exit	Closes the Trouble Info window.	All	

Sort Menu

Menu Option	Description	View
Sort Dialog...	Opens the Sort Dialog, which allows you to choose the sort columns and type (i.e., ascending or descending).	All
Default	Sorts the table according to the default settings for the view.	All

Filter Menu

Menu Option	Description
Filter Dialog...	Opens the Filter Dialog, which allows you to choose the columns to sort on.
All	The All filter (default) displays all of the rows in the table.
All Critical	The All Critical filter displays all rows whose Critical column is set to 'EMR', 'MED', or 'KEY'.
EMR	The EMR filter displays all rows whose Critical column is set to 'EMR'.
KEY	The KEY filter displays all rows whose Critical column is set to 'KEY'.
MED	The MED filter displays all rows whose Critical column is set to 'MED'.

Actions Menu

Menu Option	Description	Views	Icon
Refresh	Refreshes the data in the current view.	All	
Call Info...	Opens the **Call Info Window** for the selected call.	Callers	
Ungroup	Opens the Ungroup dialog box, allowing you to ungroup the selected calls from the event.	Callers	
Unassociate	Opens the Unassociate dialog box, allowing you to unassociate the selected calls from this asset and (optionally) associate them with a new asset. See **Unassociating a Call from an Asset** for more information.	Callers	
Move Customers...	Opens the Move Customers dialog box, allowing you to move selected customers to a new asset. See **Moving Customers to a Different Asset** on page 2-47 for more information.	Callers, Customers	
Edit Clues...	Opens the Edit Clues dialog box for the selected call. See **Editing Clues** for details.	Callers	

Help Menu

The Help menu launches Trouble Info online help content.

Callers View

The Trouble Info Callers view lists all calls associated with an event. Open the Callers view by selecting an event in the Work Agenda and clicking the **Trouble Info...** button (📞).

Event Information

The Event Information panel contains the following information:

- The **Event #** field displays the number assigned to the event by the system.

- The **Began At** field displays the time the event began.

- The **Pressure Zone** field displays the pressure zone on which the affected asset resides.

- The **Event Asset** field displays the name of the asset associated with the event.

- The **Asset Type** field displays the type of asset associated with the event.

Calls Table

The Calls Table lists all calls associated with an event. The table provides the following information:

- The **Clues** column displays the trouble code clues received for the call.

- The **Asset** column displays the name of the customer's service asset.

- The **Name** column displays the customer's name.

- The **Telephone** column displays the customer's telephone number.

- The **Date/Time** column displays the date and time of the customer's call.

- The **Critical** 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.

Comments

The Comments table displays all customer comments associated with the event. If there is a comment associated with a call, selecting the call in the Calls Table will highlight the comment in the Comments table. The Comments table contains the following information:

- The **Name** column displays the customer's name.

- The **Comment** column displays the customer's comment.

Callers View Actions

The following actions are available using the Callers View:

- **Viewing Call Info**

- **Ungrouping Calls**

- **Unassociating a Call from an Asset**

- **Moving Customers to a Different Asset**

- **Editing Clues**

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 Work Agenda you want to ungroup and click the **Trouble 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 asset related to the event populated in the Asset 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 asset 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.

Editing Clues

You can edit the clues associated with a call, which will cause the call's trouble code to be changed. You can also enter comments that will be appended to the existing call comments.

To edit clues for a call, complete these steps:

1. Select an event in the Work Agenda with at least one call.

2. Select the **Trouble Info** button (📞). The Trouble Info window opens to the Callers view.

3. Select a row in the Calls Table.

4. Click the **Edit Clues** toolbar button or select **Edit Clues...** from the Action menu. The Edit Clues dialog opens.

5. Use the drop-down boxes to select different clues.

6. Enter remarks in the Comments box, if desired.

   Note: The Customer Remarks section is view-only.

7. Click **OK**. The system performs a reprediction to see if the event can now be grouped to other events or be grouped to by other events, based on the updated clues. The system also recalculates the dispatch priority and target response time for any event associated with this call.

Unassociating a Call from an Asset

You can move a customer to a different asset if you discover the customer is associated with an incorrect asset. To move a customer to a different asset, 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 **Trouble Info** button (📞). The Trouble Info window opens to the Callers view.

3. Select a row in the Calls table and select **Unassociate** from the Actions menu.

Customers View

The data shown in the Trouble Info Customers view depends on how it is launched.

- If launched from the Control Tool, it displays all customers located on or downstream from a given asset (see **Asset Options** on page 1-39 and **Control Tool Actions** on page 1-57 for information).

- When Trouble Info is launched from the Work Agenda, the Customers view displays all customers affected by a given event.

Event Information

The Event Information panel contains the following information:

- The **Event #** field displays the number assigned to the event by the system. (Work Agenda)

- The **Began At** field displays date and time when the event began. (Work Agenda)

- The **Pressure Zone** field displays the pressure zone on which the associated asset resides. (Work Agenda)

- **# Customers** displays either how many customers are located on or downstream from a given asset or affected by a given event. (Control Tool or Work Agenda, respectively.)

- The **Event Asset** field displays the name of the associated asset. (Work Agenda)

- The **Asset Type** field displays the type of the associated asset. (Work Agenda)

- The **Updated:** field displays the date and time when the data was last updated. (All)

Customer Table

The Customer Table lists all customers associated with an event. The table provides the following information:

- The **Asset** column displays the name of the customer's service asset.

- The **Name** column displays the customer's name.

- The **Telephone** column displays the customer's telephone number.

- The **Critical** column displays the customer type value.

- The **Priority** column displays the customer's weighted priority. See **Using the Customer Administration Weighted Priority Editor** on page 5-33 for more information on weighted priority.

- The **Address** column displays the customer's address.

- The **Account #** column displays the customer's account number.

- The **Event ID** column displays any customer associated events.

- The **Clues** column displays the clues for the outage or event. Only the clues associated with the first customer call will be listed.

- The **Call Time** column displays the time the customer reported the event. If there are multiple calls from the customer, the call time will display the first call.

- The **Total Calls** column display the number of times the customer called.

Customers View Actions

You can perform the following task from the Customers View:

- **Moving Customers to a Different Asset**

Moving Customers to a Different Asset

Trouble Info allows you to move customers to a different asset if you discover they are associated with an incorrect asset. The Move Customers tool is available from both the Callers and Customers views.

To move customers to a different asset, complete these steps:

1. Select one or more customers to move from the Customers view

   Notes:
   - You can use the Callers view if the customers that you want to move are all also callers.
   - To select multiple adjacent customers, click the first customer row and then press the Shift key and click the last customer row.
   - To select multiple non-adjacent customers, press the Control key and click each customer row individually.

2. Select **Move Customers…** from the Actions menu. The Move Customers dialog appears.

3. Select an asset in the Viewer to move the customers to. The **New Asset** field is populated with the asset identifier.

4. Click **OK**. The Move Customers dialog closes.

   Note: If the selected customers were previously moved to a new asset, a confirmation dialog (*i.e.*, Overwrite Moved Customers) 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 Customers dialog to select a different asset.
   - Click **No** to abort the move completely.

5. The event is then re-analyzed using the new asset information. If it does not repredict into the same event, the # Calls and # Customers for the original event are adjusted. Calls may be grouped into another existing event or a new event will be created.

   Note: Trouble Info will be updated with the Move Customer information.

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 Work Agenda) can have multiple calls if the 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 read only.

To open the Call Info window from the Trouble Info Callers view, 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 Asset** displays the name of the customer's service asset.

- **Callback Date** displays the date and time of the last callback attempt.

- **Zones** displays the control zones 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.

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**

  - The Help menu displays the standard Help and About options.

Chapter 3

Web Switching Management

This chapter describes Oracle Utilities Network Management System Web Switching Management. It includes the following topics:

- **Overview**
- **Understanding Web Switching Management Windows**
- **Planned Switching**
- **Emergency Switching**
- **Event Associations**
- **Crew Assignments**
- **Working with Safety Documents**
- **Outage Correction**
- **Using the Miscellaneous Log**
- **Viewing Global Overlaps**
- **Web Safety**

Overview

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. Safety Documents provide an electronic representation of paper safety documents, which are used for switching operations to record the issuance and release of tags on assets.

Web Switching Management's full feature set is available through the **Web Workspace** environment for a **Full Operations plus Web Switching** user type (see **User Types** on page 1-2). **Web Switching Request** provides the Switching Request user type with a subset of the **Web Switching Management** tools related to creating and editing switching requests.

Operating Modes

Web Switching Management supports two operating modes:

- **Real-Time Mode** - Allows you to make real-time changes to the state of assets 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 template and outage correction switching sheets.

Understanding Web Switching Management Windows

Overview

This section provides an overview of Switching Sheet windows. Unlike other docked NMS applications, such as Work Agenda or the Authority tool, switching sheets cannot be moved outside of the confines of the NMS workspace. The standard configuration opens a switching sheet in the lower right quadrant of the workspace, but it may be moved anywhere within the workspace or maximized to the full workspace dimensions.

Each open switching sheet has its own tabbed window, which is labeled with a combination of the switching sheet type, number, and pressure zone ID, if the pressure zone field is populated. Multiple switching sheets are typically docked together and displayed as a tab group. Double-click any tab (or the empty area to the right of the tabs) to maximize the tab group; double-click again to restore the size.

Right-click the switching sheet tabs to access the options menu, which provides the following options:

- **Maximize:** maximizes the sheet window.

- **Restore:** restores the maximized window to its original size and position.

- **New Tab Group:** displays the sheet separately.

- **Collapse Tab Groups:** regroups separate windows into tab groups.

- **Windows...:** opens a dialog that lists all open sheets, which you can then:

    - Activate (*i.e.*, bring to front in a tab group) a single sheet.

    - Close selected sheets.

- **Close (Ctrl+F4):** closes the sheet.

- **Close All (Ctrl+Shift+F4):** closes all open sheets.

- **Close Others:** closes all open sheets except the sheet that was right-clicked.

Web Switching Sheets

Switching Sheet Types

Web Switching Management supports the following 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.

     Note: when creating a switching sheet from an event in the Work Agenda or Event Details, the *Planned* switching sheet type is not available.

- **Emergency** - Used for switching sequences that are prepared and implemented in real-time when overloads or unplanned outages occur.

     Notes:
     - Emergency Switching Sheets cannot be created from Web Switching Request.

- **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" sheets with step sequences. You can create a template from scratch or by copying an existing template, planned, or emergency switching sheet.

     Note: when creating a switching sheet from an event in the Work Agenda or Event Details, the *Template* switching sheet type is not available.

- **Outage Correction** - Used to correct outage information. Outage events are associated to this switching sheet type and then steps are recorded to reflect the actual events leading up to the outage. An option on the sheet then allows you to update the associated event, including customer counts associated to the outage.

     Note: Outage Correction switching sheets cannot be created from Web Switching Request.

Additional or alternative sheet types can be configured for your project; see the *Oracle Utilities Network Management System Configuration Guide* for details on creating custom sheet types.

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. In Progress
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 3-17 for a complete description of each possible state and instructions for changing the sheet state.

Note: The state of the switching sheet 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 3-32.

Switching Sheet Window Components

- **Menu and Toolbar Features**

- **Switching Sheet Tabs**

- **Status Bar**

Menu and Toolbar Features

File Menu

The table below describes the options available on the File menu.

Menu Option	Description	Toobar Icon
Save Sheet (**Ctrl+S**)	Saves the switching sheet.	🖫
Copy As...	Opens the Copy Switching Sheet As dialog that allows you to copy the current sheet into a newly created sheet. The new sheet can be one of the following types: Planned, Emergency, Template, or Outage Correction. See **Copying a Switching Sheet** on page 3-66 for details.	--
Print Preview... (Ctrl+Shift+ P)	Opens the Switching Report Content Selection dialog that allows you to choose the criteria for previewing a switching report.	🖪

Menu Option	Description	Toobar Icon
Print... (`Ctrl+P`)	Opens the Switching Report Content Selection dialog that allows you to choose the criteria for printing a switching report.	
Email...	Opens the Switching Report Content Selection dialog that allows you to choose the criteria for emailing a switching report.	
Refresh	Refreshes the data in a view-only sheet. The Refresh option is available when another user has locked and edited the sheet.	
Exit	Closes the active switching sheet.	--

Actions Menu

The options available in the Actions menu are dependent on the sheet type. Actions available will typically also be available through the right-click context menu and/or toolbar. The following are always in the Actions menu

Option	Description	Tab	Toolbar Button
Check In/ Create New Version	The **Check In** button allows you to check in and save a copy of the switching sheet. This is used for auditing purposes to determine differences between steps in two versions of a switching sheet. When you check in a sheet, this button changes to Create New Version, which manually increments the sheet's version number and sets the sheet to Editing mode. See **Working with Switching Sheet Versions** on page 3-48 for more information.	All	
Edit Mode/ View-Only Mode	**Edit and View-Only Modes** When the sheet is in Edit mode (), you are the only user who can edit it. When it is in View-Only mode (), you cannot edit the sheet and it is available for editing by other users. The **Edit/View-Only Indicator** button toggles the sheet between Edit and View-Only modes. When you open a sheet for editing, the sheet is automatically placed into Edit mode and blocks other users from editing it. If you open a sheet that is currently being edited by another user, you are not allowed to make any changes.	**All**	
Refresh	Refreshes the data in a view-only sheet. The Refresh option is available when another user has locked and edited the sheet.	All	

Option	Description	Tab	Toolbar Button
Update Asset-Related Fields	Updates the Lift Stations and Pressure Zones fields with values related to the switching sheet's asset and step asset values. The Location and Voltage values will be updated with values related to the sheet's asset value. If the sheet's asset value is invalid or empty and the steps have no asset related operations, then the fields will be cleared when this option is selected.	Request	
Insert Blank Step (Ctrl+B)	Inserts a blank step below the current step row.	Steps	
Place Step Insertion Indicator	Adds a step insertion indicator icon to the row.	Steps	
Remove Step Insertion Indicator		Steps	
Add New Block Header	Isolate Fault Location Maintenance Restore Construction Custom...	Steps	
Rename Block Header	Isolate Fault Location Maintenance Restore Construction Custom...	Steps	
Load Safety Documents...		Steps	
Clear Planned Time		Steps	
Clear Crews		Steps	

Option	Description	Tab	Toolbar Button
Model Verify	This action is available if model changes have occurred that impact one or more assets in the switching sheet. The Web Switching service checks all the opened switching sheet steps after a model edit has occurred. If a step has an asset that matches an asset that was directly impacted by a model change, that step will be marked as needing verification. When the sheet is displayed, these steps will be highlighted in yellow. You can either check off each step in the sheet as they are verified or check off the entire sheet. **Notes:** • Outage Correction sheets are not included in this processing. Outage Correction validates the assets when the correction is made. • While the sheet has verifications pending, step executions cannot be performed within the sheet.	Steps	✔
Move Crew	Move a crew to the asset associated with the selected step.	Steps	
Clear Condition Indexes		Steps	
Update Instructed Dates...	Opens the [TODO] dialog box.	Steps	
Move Steps to Misc Log	This action moves Real Time Completed, Aborted, Failed or Instructed steps to the Miscellaneous Log. SCADA Pending steps cannot be moved until they have transitioned to one of the states already stated. Steps associated to safety documents are also not allowed to be moved. Any step in a New or Uninstructed state will not be moved as the Miscellaneous Log only displays Real Time steps that are in a terminal or Instructed state. Any attempt to move an immovable step will result in an error dialog and the steps will not be moved from the switching sheet's steps list. To move steps to the Miscellaneous Log, select one or more steps and select **Move Steps to Misc Log** from the Actions menu or from the right-click options menu.	Steps	
Group Steps	Groups two or more selected steps.	Steps	
Ungroup Steps	Ungroups steps that have been grouped.	Steps	
Reset Operation Text...	Resets the text in the Operation field to its calculated value following a manual edit.	Steps	
Clear Clipboard (Esc)	Clears copied steps from your computer clipboard.	Steps	

Help Menu.

Option	Description	Toolbar Button
Web Switching Management Help (**F1**)	Opens online help content for the switching sheet's active tab. For example, if the Request tab is active, the "Completing the Request Tab" will be returned.	--
About Web Switching Management	Opens a window with environment and software information.	--

Switching Sheet Tabs

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. Some tabs, like the Steps tab, have their own toolbar with shortcuts for supported actions.
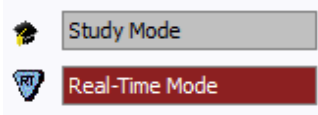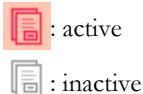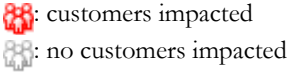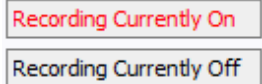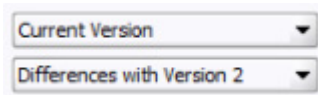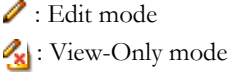
The following table describes the tabs displayed for each switching sheet.

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, pressure zone and voltage information. See **Completing the Request Tab** on page 3-14.
Steps	Use this to view, add, and edit switching steps. See **Adding and Editing Steps** on page 3-20.
Impacted Customers	Use this to view, print, email, and maintain the list of impacted customers. See **Viewing Impacted Customers** on page 3-50.
Overlaps	Use this view to identify overlaps that the sheet may have with other sheets in the system. The search criteria can include date/time, control zone, and affected assets. See **Checking for Overlaps** on page 3-54.
External Documents	Use this to attach external documents to the switching sheet. See **Adding External Documents to a Switching Sheet** on page 3-61.
View Areas	Use this to save and reload viewing areas from a Viewer window. See **Saving and Loading View Areas** on page 3-57.
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 3-75.
Tracking/Audit Log	Use this to view audit log entries associated with this sheet. See **Viewing the Audit Log** on page 3-59. You can also use this to view the current sheet state or transition to another state. See **Changing the Switching Sheet State** on page 3-17.

Status Bar

The switching sheet status bar provides several indicators about the switching sheet and related system status.

	Status Bar Indicator	Description
1	**Mode Indicator** Study Mode Real-Time Mode	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 assets in the data model.
2	**Overlap Indicator** : active : inactive	Indicates whether the switching sheet will result in overlap of affected assets or control zones during the same time period. This icon is dynamically updated to when overlaps are created or resolved.
3	**Impacted Customer Indicator** : customers impacted : no customers impacted	Indicates whether or not switching operations will impact customers. This icon is dynamically updated to reflect the results of generating the impacted customer list.
4	**Recording Indicator** Recording Currently On Recording Currently Off	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.
5	**Version Indicator** (Text)	Indicates the switching sheet version and whether or not your latest changes have been checked in. See **Working with Switching Sheet Versions** on page 3-48 for more information.
7	**Version Menu** Current Version Differences with Version 2	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 3-48 for more information.
8	**Edit/View-Only Indicator** : Edit mode : View-Only mode	**Edit and View-Only Modes** When the sheet is in Edit mode, you are the only user who can edit it. When it is in View-Only mode, you are cannot edit the sheet and it is available for editing by other users. The **Edit**/**View-Only Indicator** button toggles the sheet between Edit and View-Only modes. When you open a sheet for editing, the sheet is automatically placed into Edit mode and blocks other users from editing it. If you open a sheet that is currently being edited by another user, you are not allowed to make any changes.

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**

- **Switching Sheet Requests**

- **Changing the Switching Sheet State**

- **Adding and Editing Steps**

- **Reviewing a Switching Sheet in Study Mode**

- **Replaying Steps**

- **Implementing a Planned Switching Sheet**

  - **Scheduling a Planned Master Event**

  - **Issuing a Switching Sheet** (includes associating a crew and printing the sheet)

  - **Instructing and Completing Switching Sheet Steps**

  - **Moving a Crew**

- **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**

- **Opening an Existing Switching Sheet**

- **Copying a Switching Sheet**

- **Deleting a Switching Sheet**

For information about emergency switching sheets, see **Emergency Switching** on page 3-67.

Creating a Planned Switching Sheet

You can create a new planned switching sheet directly by selecting **New** and then **Switching Sheet...** from the **File** menu; alternatively, click the toolbar button. The New Switching Sheet window is displayed.

New Switching Sheet Window

Use the New Switching Sheet 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.

- **Pressure Zones** are the pressure zones associated with the sheet (as displayed on the Request tab).

- **Asset** is the asset associated with the sheet (as displayed on the Request tab).

- **Lift Stations** are the lift stations 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 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 Switching Sheet 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 3-12.)

        Notes:
        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.

        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, copies of the safety documents are included with 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 sort the list by clicking on a column header. A ▲ or ▼ icon indicates the column is being sorted in ascending or descending order, respectively.

Creating a Switching Sheet Template

Switching templates look like standard switching sheets, but they are used for creating and saving sheets that contain common information that is used repeatedly. The information may include:

- File attachments, which may be templates of other forms such as Excel Spreadsheets.

- Safety Documents

- View Areas.

- Pre-filled Request Tab Information.

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 **File** menu, select **New**, and then select **Switching Sheet...** The New Switching Sheet 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 3-12.

     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 **File** menu, select **New**, and then select **Switching Sheet...** The New Switching Sheet 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.

Switching Sheet Requests

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. Typically, the requestor is a Switching Entry user type.

Capabilities of the Switching Entry User Type

Switching Entry users do not have full access to all switching sheet information and operations. Specifically, Switching Entry users are limited to the following capabilities:

- Creating and viewing "Planned" switching sheets only. All other types of switching sheets are not available to Switching Entry users.

- Creating copies of existing switching sheets.

- Loading, printing, and emailing existing sheets. Only the information contained in the Request, Steps, Tracking/Audit Log, and External Documents tabs can be viewed, printed, or emailed.

- Performing the following operations on switching sheets that are in the New or Request Rejected state only:

  - Completing the fields on the Request tab.

  - Adding, removing, modifying, cutting, copying and pasting steps within the current sheet's Steps list. Steps can be added by using the Manual Step Addition panel (See **Adding Steps Manually** on page 3-33) or by adding Comment steps. Note that cut, copy and paste operations are only supported for sheets that are in the New or Request Rejected states.

  - Adding, removing, and viewing attachments on the External Documents tab.

  - Adding comment entries to the audit log on the Tracking/Audit Log tab.

- Incrementing and checking in versions of a switching sheet. This is done by selecting the Check-in button on the status bar of the switching sheet.

Once a sheet has transitioned to (or beyond) the Prepared state, Switching Entry users are limited to view-only mode.

Completing the Request Tab

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 3-17 more information.

> **Note**: The switching sheet is automatically saved after a state change, and an entry is added to the audit log.

The Request tab contains the following fields:

- **Owner** displays the current owner of the switching sheet. See **Taking Ownership** on page 3-15 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.

- **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. The Update button (🔄) is used to update the Location field based on the location of the asset populated in the Asset field.

- **Lift Stations** displays the lift stations where the switching operation takes place. The Update button (🔄) is used to update the Lift Stations field based on a distinct list of lift stations as identified by the asset populated in the Asset field and assets listed in steps.

- **Asset** displays the asset being worked on (not necessarily the asset being switched). This asset 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 Asset field:

  - The **Asset Lookup** button (🔭) is used to search for and select an asset.

  - The **Link Asset** button (🔗) to link an asset selected from the Viewer to this switching sheet. First, click on the asset in the Viewer, then click this button. The Asset field is populated with the selected asset's name. If the Link Asset button is selected when the Location, Lift Stations, Pressure Zones, and/or Voltage fields are already populated, then a confirmation dialog will be displayed asking if the user wishes to replace those values.

This is similar to selecting the Update Asset-Related Fields option from the Actions menu.

- The **Unlink Asset** button ( ) is used to clear the asset field.

- The **Focus** button ( ) is used to locate this asset in the 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.).

- **Pressure Zones** displays pressure zones that are relevant to the switching sheet. This is a text entry field and is not auto-populated. The Update button ( ) is used to update the Pressure Zones field based on a distinct list of pressure zones as identified by the asset populated in the Asset field and assets listed in steps.

- **Voltage** displays a drop-down menu that lists the nominal asset voltages. This list is dynamically generated based on a distinct list of voltages as determined by querying the NETWORK_COMPONENTS table.

- The **Update** button ( ) is used to update the Voltage field based on the voltage of the asset populated in the Asset field..

- 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.

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 [icon] **Take Ownership** button next to the Owner field on the Request tab. Your user ID is displayed in the Owner field. You can also use this button to take over ownership of a switching sheet that is currently owned by another user. This is useful if there is a shift change and the original user does not relinquish ownership before logging off.

To relinquish ownership, click the [icon] **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.

To change the state of a switching sheet, click the appropriate state change button on the Tracking/Audit Log tab. It is helpful to provide comments or a reason for the state change.

The Audit Log table 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 3-59 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.
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.

State	Description
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.
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 Completed state.
In Progress	Indicates that at least one switching step in a planned or emergency switching sheet has been instructed or completed in real-time mode. From this state, a sheet can transition to the Hold/Pending or Complete 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.
Completed	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 3-32 for information about step states.) Once a plan is complete, it cannot be edited. This state applies to both planned and emergency switching sheets.
Deleted	Indicates that the sheet was deleted using the **Delete** button on the Tracking/Audit Log tab. The Delete button is grayed until you select a Reason.
Executed	Indicates that the switching steps in a FLISR or CVR switching sheet have been completed successfully. This state is set automatically by the system after completion of all steps in the switching sheet and is valid for FLISR or CVR switching sheets only. From this state, a sheet can transition to the Completed, In Progress, or Hold/Pending once you have reestablished the single user lock over the sheet.
Error	Indicates that at least one step has failed in the execution of switching steps in the FLISR or CVR switching sheet. This state is set automatically by the system when it finds an error in the execution of steps and is valid for FLISR or CVR switching sheets only. From this state, a sheet can transition to the Completed, Hold/ Pending, or In Progress once you have reestablished the single user lock over the sheet.

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 an Asset in the Steps**

- **Finding and Replacing Text in the Steps**

- **Focusing on an Asset in a Step**

- **Moving a Crew**

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 Options Menus**

- **Steps Tab Events and Crews Pane**

Steps Tab Fields

The steps table on 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 3-48 for more information.

- **Version** displays the version number of the switching sheet when the step was added. See **Working with Switching Sheet Versions** on page 3-48 for more information.

- **Operation** displays the description of the switching action. When the switching action is associated to a safety document, then the safety document type and number will be displayed in this field after the switching description.

- **Asset** displays the asset alias referenced in the step.

- **Details** displays information about the outcome of the switching step, such as:

- Isolate a section.

- Restore a section.

- Make a loop.

- Break a loop.

- Make a parallel. (The pressure zones involved in the parallel will be listed.)

- Break a parallel. (The pressure zones involved in the parallel will be listed.)

This information is recorded into the step when the step is initially added to the switching sheet, but is not dynamically updated as changes are made to the sheet. You can enter text into this field to replace the text that is automatically inserted.

- **Status** displays the state of the switching sheet step. See **Switching Sheet Step States** on page 3-32 for information.

- **Planned Date** displays the proposed date/time when this step will be performed. The Planned Date is used to generate more accurate and detailed Impacted Customer lists **and** to specify the ERT for the generated Planned Events. This date must be within the Start and Finish Dates specified on the Request tab. This date is automatically updated when the switching sheet's Start and Finish Dates are updated. Thus, if the work is rescheduled, the planned date values do not have to be manually updated as well.

- **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.) If you attempt to edit this date after the step has been completed in real-time, the system checks to see if the step affects any jobs. If it does, the system prompts you to confirm that you want to change the affected start date or restoration date, as applicable, based on the event association.

- **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 IDs of the crews to which the step was instructed. This field is automatically populated if crews are 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 asset 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.

- **Hidden Columns:** The following columns are, by default, hidden from view.

  - **Cond Cls** displays the step's associated condition handle class.

  - **Cond Idx** displays the step's associated condition handle index.

  These columns are used to determine the class and unique condition id associated to the step. A condition handle is associated to a step when the step manipulates a condition such as an Apply Condition step. Sometimes it is useful to determine the step that added a condition and the step that removed it. If you have a lot of Apply and Remove condition steps, it may be

difficult to determine which step goes with each condition. These columns can help you diagnose issues with the step's related condition handle.

To display these hidden step columns, bring up the Select Columns to Display dialog by right-clicking on the Steps table header row and select the **Select Columns...** option. When the Select Columns to Display dialog comes up, select the Cond Cls and Cond Idx items and click the **OK** button.

The Cond Cls and Cond Idx columns will now be visible between the Operation and Asset columns.

Steps Tab Toolbar and Options Menus

The Steps tab toolbar displays buttons for actions 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 the Cut and Paste options, are also available through an options menu that is displayed when you right-click a step row. The options 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 with toolbar buttons, keyboard shortcuts, and/or options menu items.

To perform this action:		Comments
Turn record mode on	Click	Record mode must be on in order to record operations using the Viewer and Control tool.
		The toolbar button combines the **record on** action and text for the current recording mode state:
		The status bar also provides the recording mode status:
Turn record mode off	Click	The toolbar button combines the **record off** action and text for the current recording mode state:
		The status bar also provides the recording mode status:
Save all asset addresses to the database	Click	If you change one or more asset addresses in a switching sheet, this action updates the assets' addresses throughout the switching sheet and also updates the asset attribute table so that any new switching sheets referencing these assets will use the new addresses.

To perform this action:		Comments
Focus Viewer 1 on the objects referenced in the currently selected list of steps	Click ⊙	By default, the master viewer is the VIEW1 Viewer. The toolbar button, when used with single step selections, will focus on a single asset and set the environment's selected asset to the step's associated asset. When multiple steps are selected, the Focus button will force the viewer to display all of the step assets in one view. **Note:** If you have assets across many pressure zones, then many maps may need to be loaded to accommodate your request. This multi-asset option is similar to the Dynamic View area each switching sheet automatically has associated to it on the View Areas tab.
Instruct the selected steps	Click 🔁	This action is only permitted in real-time mode when the plan reaches Issued state. Note that step order execution rules apply when enabling this button (see **Step Order Execution Rules** on page 3-38 for details). When you select this button, the Instructed By and Instructed Date columns are populated.
Complete the selected steps	Click ▷	Once the action is complete, the status of the step changes to *Completed* (see **Switching Sheet Step States** on page 3-32). If you are in real-time mode, the Completed Date column is also updated with the current date. Note that step order execution rules apply when enabling this button (see **Step Order Execution Rules** on page 3-38 for details). 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 asset.
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 (see see **Switching Sheet Step States** on page 3-32). 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.
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* (see **Switching Sheet Step States** on page 3-32) and the Completed Date column is updated with the current date. However, the action is not actually performed against the real-time data model.

To perform this action:		Comments
Uninstruct an instructed step	Click	Use this action to change the state of an instructed step to *Uninstructed* (see **Switching Sheet Step States** on page 3-32). If the step has an asset and an instruct condition on the asset, then the condition will be removed prior to the step transitioning to the *Uninstructed* state. Steps that are in the *Uninstructed* state can be instructed again or aborted, failed or completed. Notes: • The uninstruct action is not available for SCADA instructed actions. This option is not available for steps in the *SCADA Pending* state. • Uninstructed steps may be deleted. • If you are using version controls, uninstructed and deleted steps may be red-lined and not deleted from the database. See **Working with Switching Sheet Versions** on page 3-48 for more information.

Verify steps after a model edit	Click	This action is available if model changes have occurred that impact one or more assets in the switching sheet.
		
		The Web Switching service checks all the opened switching sheet steps after a model edit has occurred. If a step has an asset that matches an asset that was directly impacted by a model change, that step will be marked as needing verification. When the sheet is displayed, these steps will be highlighted in yellow. You can either check off each step in the sheet as they are verified or check off the entire sheet.
		
		    Notes:
		    • Outage Correction sheets are not included in this processing. Outage Correction validates the assets when the correction is made.
		
		    • While the sheet has verifications pending, step executions cannot be performed within the sheet.
		
		Individual Verification
		• To check off each step individually, right-click the highlighted step and select **Model Verify**.
		
		Whole Sheet Verification
		• To check off all of the steps in a sheet, click to Confirm all model changes. All highlighted steps will be marked as verified.
		
		Once the steps have been verified, step execution can continue for the sheet.

To perform this action:		Comments
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 asset states. • Choose **Nominal** to reset all assets to their predefined normal state. This will immediately clear the status of the steps in the current sheet. It will also clear the study step statuses in any other open sheets.
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 Viewer 1 changes to real-time mode.
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 Viewer 1 changes to study mode.
Find and replace text	Click	Use this to find and replace all occurrences of an asset (see **Finding and Replacing an Asset in the Steps** on page 3-39) or text (see **Finding and Replacing Text in the Steps** on page 3-40) in the switching steps.
Cut steps to the clipboard	Click	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 in view only mode or the sheet state is Completed. Alternatively, right-click and choose **Cut** from the options menu or press **Control-X**.
Move Steps to the Miscellaneous Log	--	This action moves Real Time Completed, Aborted, Failed or Instructed steps to the Miscellaneous Log. SCADA Pending steps cannot be moved until they have transitioned to one of the states already stated. Steps associated to safety documents are also not allowed to be moved. Any step in a New or Uninstructed state will not be moved as the Miscellaneous Log only displays Real Time steps that are in a terminal or Instructed state. Any attempt to move an immovable step will result in an error dialog and the steps will not be moved from the switching sheet's steps list. To move steps to the Miscellaneous Log, select one or more steps and select **Move Steps to Misc Log** from the Actions menu or from the right-click options menu.
Copy steps to the clipboard	Click	You can select one or more steps. The selected steps are copied to the clipboard. Use the Paste option to paste the steps. Alternatively, right-click and choose **Copy** from the options menu or press **Control-C**.
Copy steps as go-back steps	Click	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. Alternatively, right-click and choose **Copy as Go-Backs** from the options menu or press **Control-G.**

To perform this action:		Comments
Paste steps from clipboard	Click	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. Once the steps have been pasted, the Paste button is no longer available and the contents of the clipboard are cleared. This option is disabled if the sheet is in view only mode or the sheet state is Completed. Alternatively, right-click and choose **Paste** from the options menu or press **Control-V**.
Delete steps	Click	Deletes the selected steps from the plan. This button is disabled if the sheet is in view only mode or if the step has transitioned beyond its initial state (No State). Alternatively, right-click and choose **Delete** from the options menu or press **Control-D**.
Undo the last action	Click	Allows you to undo the last action (Cut/Paste, Copy/Paste, Delete, Add Step). The Undo function returns an error (*Undo is not supported across multiple sheets.)* when: • attempting to undo pasting steps cut from another switching sheet • the last action was not on the currently active sheet; for example, if you insert a step on Sheet A and then switch to Sheet B and click Undo. Alternatively, right-click and choose Undo from the options menu or press **Control-Z**.
Return to Nominal	Click	The Return to Nominal function generates a block of switching sheet steps that contain all the steps needed to switch the affected assets back to nominal. They will be presented in a logic order, will not outage any customers, and are logically grouped. **Note:** the block is not go-back steps.
Add a Safety Document for a step	Click	The **Create Safety Document for Selected Step** button creates a safety document for a selected step. If the system cannot determine the type of safety document to create for the step, the Select Safety Type dialog will open so you may choose the type. If the step selected is not valid for safety documents, an error is returned. Once a safety document type has been determined or selected, the safety document dialog opens. This option is disabled if the sheet is in view only mode or the sheet state is Completed. See **Working with Safety Documents** on page 3-75 for more detail.
Create a Safety Document	Click	The Create Safety Document button opens an options menu that allows you to choose a safety document type or open the Select Safety Type dialog. See **Working with Safety Documents** on page 3-75 for more detail.
Unlink from a Safety Document	Click	Unlinks (removes the association to) an asset from a safety document's asset list. First, select the step with the asset operation you want removed from the safety document, then click the button. See **Removing Assets** on page 3-85.

To perform this action:		Comments
Complete all steps up to the selected step in 'silent' mode	Click ⬇	Use this action to complete all steps up to and including the selected step in 'silent' mode, which means that the system will auto-complete the operations without displaying the Look Ahead window. This option is only available in Study mode if you select a single row that has not already been completed. This is useful if you need to get a study session back to a point where you previously left off. Alternatively, right-click and choose **Complete to Here** from the options menu.
Show or hide events and crews	Click ⬇ to show or ⬆ to hide the header	Shows or hides the Events and Crews pane, which displays crew and event associations. See **Steps Tab Events and Crews Pane** on page 3-28.
Show Manual Step Addition Form	Click 🗒	Shows the Manual Step Addition pane, which allows you to add steps without using the Control Tool. See **Adding Steps Manually** on page 3-33.
Add a new block header	Right-click and choose **Add New Block Header** from the context menu, then select the block type	Inserts a new block header of the selected type: Isolate, Fault Location, Maintenance, Restore, Construction, 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 in view only mode or the sheet state is Completed.
Rename an existing block header	Right-click and choose Rename Block Header from the context menu, then select the block type	Rename an existing block header to one of the following types: Isolate, Fault Location, Maintenance, Restore, Construction, or Custom. If you choose Custom, you are prompted to enter the new block header name. See **Renaming a Block Header** on page 3-36 for more information. This option is disabled if the sheet is in view only mode or the sheet state is Completed.
Change an instructed date	Right-click and choose Update Instructed Dates... from the context menu.	When selected, this option will display the Update Instructed Date dialog. From this dialog you can enter in a new Instructed Date for the steps that are currently highlighted in the steps list. Any steps that have not been instructed will not be updated.
Clear the Planned Date field for this step	Right-click and choose **Clear Planned Date** from the options 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 in view only mode or the sheet state is Completed.
Clear the **Instructed To** field for this step	Right-click and choose **Clear Crews** from the options menu	This action is only available if the step has a value in the Instructed To column. Clicking this button removes the crew and leaves the Instructed To column blank. This option is disabled if the sheet is in view only mode or the sheet state is Completed.
Clear the step's **Condition Class** and Index fields for this step.	Right-click and choose **Clear Condition Indexes** from the options menu.	The action will only happen for steps that are not in a terminal state and steps that are not associated to safety documents. Clicking this button will remove the condition class and index associated to the step. An error dialog will come up if any of the selected steps' condition handles could not be cleared.

To perform this action:		Comments
Group steps	Right-click and choose **Group Steps** from the options menu	Groups the selected steps and draws a bracket around them in the Steps list. This allows steps to be completed in or out of order within the grouping depending on the switching sheet type. See **Grouping Steps** on page 3-37. This option is disabled if the sheet is in view only mode or the sheet state is Completed.
Ungroup steps	Right-click and choose **Ungroup Steps** from the options 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 3-37. This option is disabled if the sheet is in view only mode or the sheet state is Completed.
Insert a blank step	Right-click and choose **Insert Blank Step** from the options menu.	Inserts a new blank step after the currently selected step. This is useful for adding comment steps. See **Adding Comment Steps** on page 3-34 for more information. This option is disabled if the sheet is in view only mode or the sheet state is Completed.
Mark the location where steps should be inserted	Right-click and choose **Place Step Insertion Indicator** from the options 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 in view only mode or the sheet state is Completed.
Remove step insertion indicator	Right-click and choose **Remove Step Insertion Indicator** from the context 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.
Load the associated safety documents	Right-click and choose **Load Safety Documents…** from the context menu	If any of the selected steps are associated to a safety document, then that document will be loaded for each step. The document type and number appear in the Operation column of the step when there is an association.
Move the crew symbol to a new asset in the Viewer	Right-click and choose **Move Crew** from the context menu	When this option is selected for a step with a crew instruction, the crew symbol within the Viewer is moved to the asset specified in that step. This feature is only used to move the crew symbol within the viewer.
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.

Steps Tab Events and Crews Pane

The **Events and Crews** pane provides information on the events and crews associated with the sheet. Use the **Show Event and Crews** (⌄) and **Hide Events and Crews** (⌃) buttons on the Steps tab toolbar to expand and minimize the pane.

Events List

The **Events List** lists all events associated with 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 3-73.)

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 **Asset** column displays the name of the asset.

- 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 3-73 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 in view only mode or the sheet state is Completed.

- 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 Viewer 1** button () focuses Viewer 1 on the associated asset.

Crews List

The Crews List displays crews that are associated to the switching sheet; they may be directly associated using Crews List **Select Crew...** function or by virtue of being assigned or en route to an associated event. 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 3-43.

- 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 in view only mode or the sheet state is Completed. This action will only be applied to steps in the Instructed or Completed states. Any selected step in any other state will be ignored.

- The **Move Crew** button (⊟) allows you to move a crew to the asset associated with the selected step. This button is enabled only when the selected crew is en-route or on-site to the associated event.

- The **Select Crew...** button (⊞) opens the Select Crew dialog from which you may select crews or create contractor (foreign) crews to associate to the switch plan. For more information see **Assigning Crews to a Switching Sheet** on page 3-31.

- The **Remove Crew** button (✖) removes the selected crew from the table if they were added with the **Select Crew...** (⊞) action and are not assigned, en route, or onsite.

Assigning Crews to a Switching Sheet

The Select Crew dialog allows you to assign crews to the switching sheet. You may also create contractor crews from the dialog's **Contractors** tab.

Selecting Crews from the System Crews List

To assign a standard (system) crew to the switch sheet

1. Click the **Select Crew...** button (⊞) to open the Select Crew dialog

2. On the **System Crews** tab, select one or more crew rows in the table.

3. Click **OK** to assign the crews and close the dialog.

   Note: click **Apply** to assign the selected crews without closing the dialog.

Creating and Assigning Contractor Crews from the Contractor Entry Form

You may add a new contractor crew using the Contractor Entry Form. The created crews are assigned to the current sheet and added to the Contractor Crew List from which they may be assigned to other switching sheets or safety documents.

The form contains the following fields:

- Crew ID: the crew name or identifier.

- Contact: the name of the crew contact person.

- Mobile #: the crew's mobile number.

- Pager #: the crew's pager number.

- Type: crew option menu that allows you to choose the crew type.

- Comments: text field for comments.

Actions

- **Create and Assign Crew** (⊞): assigns the new crew entry to the switching sheet and adds them to the contractor crew list; the Select Crew dialog closes once the **Add** button is clicked.

- **Clear Crew Fields** (✎)**:** clears the entry form.

Using the Contractor Crew List

The Contractor Crew List allows you to assign existing contractor crews to the switch sheet or populate the Contractor Entry Form to reuse crew data when creating additional contractor crews.

Assigning an Existing Contractor Crew

1. Select the crew rows in the Contractor Crew List.

2. Click the **Assign Crew** button (➕) to assign the crews to the sheet.

Assigning a New Contractor Crew Using Existing Crew Data

To create an additional contractor crew using data from an existing crew, do the following

1. In the Contractor Crew List, select the row with the desired crew data.

2. Click the **Transfer Crew Data** button (⬆) to copy the data to the Contractor Entry Form.

3. Edit the data for the new crew.

4. Click the **Assign Crew** button (➕) to assign the new crew to the safety document and add them to the Contractor Crew List.

Switching Sheet Step States

Switching sheet steps go through stages or states, just like switching sheets. Step states are described below:

> **Note**: The status of steps that are executed in Study mode is prefixed with a two-character text string. (The default prefix is "ST," but this is configurable during system implementation.) Thus, a step that was completed in real-time mode would display the status "Completed," while a step completed in Study mode would display "ST Completed."

- **No state** - No action is associated with the step.

- **Instructed** - The step was instructed.

- **Uninstructed** - The instructed step was uninstructed.

- **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.

- **Previously Completed** - This state occurs when a step is completed, but the asset was already in the desired state.

- **SCADA Pending** - This state applies only to actions that the system identifies as SCADA actions (*i.e.*, actions on telemetry-controlled assets). It indicates that a SCADA action was instructed.

  > **Note**: If the system detects that the asset 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.) The step can also fall into this state if the step fails to execute during automatic execution of steps within a CVR or FLISR sheet.

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 3-67.
>
> To record safety state transition steps (*i.e.*, steps that are associated to safety documents), see **Adding a Safety State Transition Step** on page 3-82.

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 options menu. By default, steps are added to the end of the list.

3. If the Viewer is not displayed, open a Viewer by clicking the **Viewer 1** button on the Web Workspace toolbar or selecting **Viewer 1** from the Tools menu.

4. Verify that Web 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 asset on which you want to perform an operation.

8. Double-click the asset. The Control Tool opens.

9. Select the action you want to perform. For example, to open an asset, click **Operate** and then select **Open** from the list of operations. To place a tag on an asset, click **Tag** and then select **Place Tag**.

10. If the step involves an asset 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 assets and conditions. You may be required to view additional tabs, such as View Conditions, before you can close the Look Ahead window.

11. Click **Exit** on the Control Tool dialog. The asset is updated in the Viewer and a step is added to the steps list. The new step is automatically selected.

Adding Steps Manually

The **Manual Step Addition** form allows you to add steps to a switching sheet without using the Control Tool. To add a step manually, complete the following steps:

1. Click the **Manual Step Addition** button (![]) to display the Manual Step Addition form.

2. Add asset information to the **Asset** field using one of these methods:

    •   Select the asset in the Viewer and click the **Set Asset** (![]) button. The asset field will be populated with the asset alias of the selected asset.

        Note: this method is not available to the Switching Entry user type.

    •   Enter a partial asset alias and search for it by clicking the **Search** (![]) button to open the **Select Asset** dialog. Select the asset and click **OK**.

    •   Enter an asset alias directly. When you tab out of the field, the system will validate that the asset; if the asset is not valid, the field will be highlighted to indicate that it should be corrected.

    Click the **Show in Viewer 1** button (![]) to focus the Viewer on the selected asset.

3. Add the Operation. The operation is made up of two fields: a short operation code and an operation description. Click in either field and click the **Search** button (![]) to open the **Select Operation** dialog, which is filtered to only display operations (and the corresponding operation code) valid for the asset type. Select an operation and click **OK** to add the operation or click **Cancel** to close the dialog without a selection.

    Note: if you know the operation code, you may enter it directly. If the operation code is invalid, the background of both fields will be red and the second text field will be blank. If the operation code is valid, the background of both fields will be white and the second field will display the operation description corresponding to the typed in operation code.

4. Click the **Add Step** button (![]) to add the manual step to the switching steps.

Adding Comment Steps

You can add comment steps that are not related to a specific asset 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 options menu. With the row selected, click in the Operation column to enable adding a description of this step; the Details column is also available for descriptive text.

> **Note**: You may enter text in the Operation, 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.

Resetting Operation Text

Operation text that has been manually entered may be reset to its original value by following the following steps:

•   Right-click to select the row and open the option menu.

•   Select **Reset Operation Text**. The **Reset Operation Text** dialog will open to confirm that you want to change the Operation text back to its original value.

•   Click **Yes** to reset the value.

> **Note**: click **No** to close the dialog and leave the Operation text unchanged.

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.

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 pasted into any location within the step list. This also pertains to cutting and pasting steps from one sheet to another.

If you cut and paste steps from one sheet to another, the system determines which events have associations with these steps and automatically moves the corresponding event/sheet associations from the old sheet to the new sheet. If you attempt to move some but not all of the steps for an event, the system displays a confirmation dialog indicating the affected events. If you confirm the action, then both the old sheet and the new sheet will have an association to the affected events. Any step moves that affect event associations are recorded in the audit log for tracking purposes.

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 options 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 options menu). Any cut steps are moved, and copied steps are duplicated.

   Note: Once the step has been pasted, the Paste button is no longer available and the contents of the clipboard are cleared.

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 the original state. The Go-Back feature creates a new sequence of steps that reverses the existing sequence. For example, assume that Step 1 involves opening an asset. If you select this step and choose Copy as Go-Backs, the system creates a step to close that asset 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 options 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 options 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.

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, Restore, and Construction – or you can create you 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, unless the block names are the same and the blocks are adjacent (not separated by any blocks of different names). See the **Parallel Step Execution** on page 3-36 for more information about parallel execution of block steps.

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. An option menu appears.

2. Select **Add New Block Header,** then select a block header type: Isolate, Fault Location, Maintenance, Restore, Construction, 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.

Renaming a Block Header

To rename a block header in the steps list:

1. From the Steps tab, right-click the block step that you want to rename. An option menu appears.

2. Select **Rename Block Header**, then select a block header type: Isolate, Fault Location, Maintenance, Restore, Construction, or Custom.

    Note: If you choose Custom, you are prompted to enter a new block header name.

The selected block header row is renamed.

Parallel Step Execution

Parallel execution allows an operator to direct one crew through a set of steps in one block and another crew through a set of steps in another block. This provides the operator more flexibility when executing switching steps and more closely correlates with their actual business process.

Blocks of steps with the same block names can be executed in parallel when in order step execution rules are enabled (see **Step Order Execution Rules** on page 3-38 for details). The blocks must be sequentially listed and cannot be separated by different blocks of steps. For example, parallel execution is allowed when blocks are ordered (*e.g.*, Isolate, Isolate, Restore, Restore); parallel execution is not allowed if blocks are separated by different block names, such as Isolate, Restore, Isolate, Restore.

When executing switching steps, the system checks to see if the previous block step has the same name as the current block step. If it does, the system ignores any incomplete steps within these

blocks, but requires that you complete the steps within each block in order. If steps are grouped within a block, normal grouping rules apply (see **Grouping and Ungrouping Steps** on page 3-37).

Below is an example of how you might create and execute a plan using parallel step execution:

1. Create a Planned switching sheet.

2. From the Steps list, right-click on the Default block step. Select **Add New Block Header** and then select the Isolate option.

3. Record one or more steps into the Isolate block for a single pressure zone.

4. Add another Isolate block at the end of the first block.

5. Record one or more steps into the second Isolate block for a different pressure zone.

6. Create two Restore blocks after the second Isolate block.

7. Create go-back steps for the first of the Isolate blocks. Paste the go-back steps into the first Restore block.

8. Repeat the previous steps to create and paste go-back steps into the second Restore block.

9. In Study mode, complete the first step in the first Isolate block. The step is completed.

10. Complete the first step in the second Isolate block. The step is completed.

11. Continue executing steps in parallel for both Isolate blocks and then both Restore blocks.

> **Note:** Parallel execution is not required in this situation; it is simply available as an option.

Grouping and Ungrouping Steps

Step grouping allows a sheet type to enforce in or out of order step execution rules for the steps that are grouped. For Product configured switching sheets, grouped steps exhibit the opposite execution rules that non-grouped steps have. If non-grouped steps can be executed out of order, then the grouped steps have to be executed in order; the opposite is true as well. For more information on how these rules are configured for each sheet type, see **Step Order Execution Rules** on page 3-38.

The following rules apply when grouping and ungrouping steps:

- 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:

1. Select two or more contiguous steps. Remember that the grouping cannot cross Block boundaries.

2. Right-click and select **Group Steps** from the options menu. A blue bracket appears in the step number column to visually indicate the newly formed grouping, as shown in the following figure:
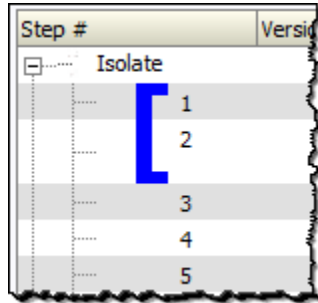
Note: Groups cannot span more than one block. If you attempt to group steps that span two or more blocks, the system will create separate groups within each block.

Ungrouping Steps

You can ungroup some or all steps in a group. To ungroup steps:

1. Select one or more steps that are currently part of a group.

2. Click the right mouse button and select **Ungroup Steps** from the options 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:

1. Select the steps you want to add and include at least one step from the existing group.

2. 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 z). 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.

Step Order Execution Rules

Each of the switching sheet types have step execution rules that either require all the steps to be executed in order or executed out of order. Step grouping has been setup in each of the sheet types, except Outage Correction, to allow step executions to work in the opposite way of non-grouped steps (see **Grouping and Ungrouping Steps** on page 3-37). Outage Correction requires that the steps be validated in order, so out of order execution is not available for that sheet type.

When in-order execution rules are turned on, then the steps have to be instructed, executed, aborted or failed in the order that they are listed in the switching steps list. You cannot complete step 2 before step 1 has been completed, aborted, or failed. When out of order execution rules are turned on, then any step in a non-terminal state can be completed, aborted or failed at any time.

Each switching sheet type is configured with different rules for whether steps can be executed in or out of order normally and then also whether steps can be executed in or out of order when the steps are part of a grouping. The table below describes how each sheet type is configured.

Sheet Type	Execution Rule	Group Execution Rule
Planned	Steps have to be executed in order.	Grouped steps can be executed out of order.
Emergency	Steps can be executed out of order.	Grouped steps have to be executed in order.
Template	Steps have to be executed in order.	Grouped steps can be executed out of order.
Outage Correction	Steps have to be executed in order.	Grouping of steps is not available.

Editing Existing Steps

You can rearrange, add, and delete switching steps using options found on the Steps toolbar or from the Steps options menu.

Notes on editing steps:

- You cannot edit steps after the switching sheet has been completed.

- Some fields on the switching sheet are not editable after a plan has transitioned to a certain set of states. For example, the Instructed Date and Completed Date fields cannot be updated after the step has reached a terminal state (completed, aborted, or failed).

- Tabbing out of a cell can only be accomplished if the cell is not set up for word wrapping.

- The Operation, Details, and Comments columns are configured for word wrapping. Word wrapping means the cell height will grow if the text in the field is too long to be displayed within the confines of the cell width.

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 in edit mode.

2. Click on the **Steps** tab.

3. Edit steps as follows:

    • To edit the fields in a step, select the row and click in the Operation (for comment steps only), Details, Planned Date, Instructed Date, Completed Date, Comments or Address field and change the text.

    • 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 **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 an Asset in the Steps

The **Asset** tab of the **Find and Replace** dialog allows you to find and replace occurrences of an asset in the switching steps. This is helpful for finding an asset 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 asset was entered in a number of places.

To find occurrences of an asset within the Steps list, complete these steps:

1. Open the switching sheet.

2. Click on the **Steps** tab.

3. *(Optional)* Select a step with a valid asset name within the Steps list.

4. Click the **Find and Replace...** button on the Steps tab toolbar. The **Find and Replace** dialog box opens.

5. Click the Asset tab, if not already selected. The Find field displays the selected step's asset alias, if an optional step selection was made before displaying the Find and Replace dialog. Otherwise, enter an asset ID in the Find field.

6. Click the **Find Next** button to navigate through the list of steps, highlighting each occurrence of that asset.

To replace an asset, complete these steps:

1. Open the switching sheet.

2. Click on the Steps tab.

3. *(Optional)* Select a step with an asset that you wish to replace.

4. Click the **Find and Replace...** button on the Steps tab toolbar. The Find and Replace dialog opens. If an asset ID was not preselected above, enter an asset ID in the Find field.

5. Select an asset from the Viewer. The Replace With field is populated with that asset's alias.

6. Click **Replace**.

Note: if you are replacing an asset association on a step that has had its Operation text modified, a **Reset Operation Text** dialog will open asking you if you want to reset the operation text. You will have three options:

- Click **Reset** to reset the text;

- Click **Continue** to keep the manually entered Operation text.

- Click **Cancel** to cancel the asset replace.

For more information, see **Resetting Operation Text** on page 3-34.

Finding and Replacing Text in the Steps

The **Text** tab of the Find and Replace dialog allows you to find and replace occurrences of text in editable fields within the switching steps.

> **Note:** Not all editable fields allow Find and Replace; the project configuration determines what fields are editable. Base Product configuration allows you to find text in the step fields Operation, Asset, Details, Executed By, Instructed by, Instructed To, Address and Comments. However, you can only replace text in the editable fields Details, Address and Comments.

To find occurrences of an asset within the Steps list, complete these steps:

1. Open the switching sheet.

2. Click on the **Steps** tab.

3. Click the **Find and Replace...** button on the Steps tab toolbar. The Find and Replace dialog opens.

4. Click the Text tab, if not already selected.

5. Enter the search term in the **Find** field.

6. Click the **Find Next** button to navigate through the list of steps, highlighting each occurrence of that asset.

7. To replace an instance of the search term, enter the replacement text in the **Replace with** field and click **Replace**. Repeat as necessary.

> **Note:** if you attempt to replace text in a non-editable field, a message will notify you that it cannot be replaced and the **Find Next** button will be desensitized.

Changing Start Date

The Change Start Date? dialog box appears when you edit the execution time of a step that is part of a partial restoration. The outage start times for the related events are not updated. The system does not have enough information to decide which steps should be updated without input.

The dialog box allows to select related steps that should also have their outage start time modified. Click **OK** to change execution time or click **Cancel** to abort the change.

Focusing on an Asset in a Step

When reviewing a switching sheet, you can focus on an asset in the Viewer 1 window to better understand the conditions present in the area of the asset. To focus the Viewer window on the asset in a switching step, select a step on the Steps tab and then select the **Object Focus** button () on the Steps tab toolbar. The Viewer loads the appropriate map and focuses on the asset.

The Focus button () can also be used to focus the viewer on a group of assets. To focus the Viewer window on multiple assets, highlight multiple steps with different assets and click the Focus button () on the Steps tab toolbar. The Viewer will load the appropriate maps and highlights each asset in the viewer.

Example Return to Nominal Scenarios

The following scenarios shows using Return to Nominal for switching actions on the diagram to the right..

Example 1

Simple load balance planned switching action.

1. The user creates a Planned Switching sheet to move load from one pressure zone to another:

   - Open **B** -- make a parallel

   - Close **A** -- break a parallel

   - Open **D** -- make a parallel

   - Close **C** -- break a parallel

2. The user switches to Real Time mode and executes the steps

3. The user clicks the ◀▯ button to generate *Return to Nominal* steps.

4. The switching plan will add the following new steps to the bottom of the plan, in a new *Return To Nominal* block:

   - Open **C** -- make a parallel

   - Close **D** -- break a parallel

   - Open **A** -- make a parallel

   - Close **B** -- break a parallel
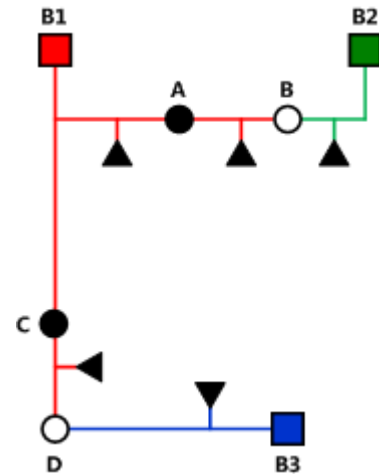
Reviewing a Switching Sheet in Study Mode

You can review the actions of a switching sheet in a Viewer window. With the Viewer and the switching sheet 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 words "ST Completed" appear 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 based on the type of switching sheet and whether the step is in a step grouping or not. (See **Step Order Execution Rules** on page 3-38 for more information.)

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 assets 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**
- **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. Note that if a Planned Event is partially restored, then the ERT is determined by taking the latest date from the restoration steps Planned Date values (see Planned Date description on page 3-21). Planned Date displays the proposed date/time when this step will be performed. The Planned Date is used to generate more accurate and detailed Impacted Customer lists and to specify the ERT for the generated Planned Events. This date must be within the Start and Finish Dates specified on the Request tab. This date is automatically updated when the switching sheet's Start and Finish Dates are updated. Thus, if the work is rescheduled, the planned date values do not have to be manually updated as well. If only one of the restoration steps has a Planned Date value, then that value is used even if it is the first step to restore customers. The ERT of the Master event is only used when none of the restoration steps have Planned Date values.

> **Note:** the calculated ERT is determined by using the Impacted Customer list, which must be generated for the functionality to work. If the list is not generated, then the ERT of the Master Event is used.

An optional asset alias can also be specified within the Asset field on this tab. Specifying an asset 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 asset 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 asset and control zone, select the asset within the Viewer and click the **Link Asset** button on the Request tab. If an asset 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 in Event Details

You can update the ERT for an event to match the date and time specified in the Finish Date field on the Request tab. The new date will be visible in Event Details the next time you load the event. To update the ERT, complete these steps:

1. Select **Switching…** from the Actions menu in 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.

    Note: 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.

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 option on the Action menu: **Assign** or **En Route**. The Crew is listed in the Crew List on the Steps tab header, and the selected status is shown.

Releasing Crews from an Event

To release one or more crews from an event, select the master event in the **Work Agenda** and select **Release Crews...** from the Actions menu. The **Release Crews** window opens with a list of all crews assigned to the selected event. One or more crews may be selected:

- Click on a crew name to select one crew.

- Click, hold, and drag to select multiple adjacent crews.

- Control-click to select multiple non-adjacent crews.

Once the crews have been selected, click **Release** to release the crews from the event. The Release Crews window will close, the crew will no longer be associated with the event, and the crew symbology will disappear from the Viewer.

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 Control-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 Control 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.

> **Note:** To pre-assign each step to multiple crews, simply select more than one crew in the Crew List before selecting your 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.

Adding and Removing Event Associations

Click the **Add Event Association** button (➕) in the Steps tab header to associate an event with the switching plan. You can enter the event number or select an event in the Work Agenda Event List. The event will show up as a "Manual" associated event within the Events list.

Click the **Remove Event Association** button (❌) to remove a manual event association from the switching plan. This button is enabled only for Manual associated events.

See **Event Associations** on page 3-73 for more information.

Printing the Switching Sheet

To print the switching sheet:

1. Select **Print...** from the **File** menu (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.

Overview

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 be Issued first. The Instruct and Complete buttons become enabled in real-time mode when the plan reaches the Issued state.

- The order that steps can be instructed depends on the type of sheet the steps are found in and whether the steps are part of a step grouping or not. (See **Step Order Execution Rules** on page 3-38.)

- 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 step, the switching sheet 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 asset 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.

- If you attempt to operate an asset to its current state, such as closing an asset that is already closed, a dialog informs you that the asset is already in its desired state. You can continue or cancel the operation. If you continue, the system marks the step as completed or instructed (depending on your action). If you cancel, no action is taken.

Instructing and Completing Steps

To instruct and complete steps:

1. Verify that the switching sheet and the Viewer are in real-time mode.

2. On the Tracking/Audit Log tab, verify that the status of the sheet is Issued, In Progress, or Hold/Pending.

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 Crews 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 an asset 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 Instructed Date column is populated with the current date/time. An Instructed symbol appears on the asset in the Viewer.

    If the step involves issuing a safety document to one or more crews, then the list of crews in the step's **Instructed To** field will be used to populate the Assigned Crews list within the safety document 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 request is not sent to SCADA and the step is set to SCADA Pending (it will wait for telemetry in order to complete the step). This may be the case if a crew were instructed to perform the operation instead of a SCADA system. If you click **Cancel Action**, the operation is cancelled.

    If the SCADA interface reports that the asset 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 asset. Submit a manual entry?" If you click **Yes**, the status of the step 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 asset was indeed opened, the MANUAL indicator disappears. If you click **No**, the action is cancelled.

    Notes on the Look Ahead and its Errors and Warnings

    When instructing a step, the Look Ahead and its associated errors and warnings display data as if the other instructed steps in the sheet were already completed. This allows you to instruct multiple steps, including go-backs of previous steps, without receiving errors about missing tags, incorrect statuses, etc. This will also give you the correct customer count as if the other instructed steps were already executed.

    This considers all instructed steps in the current sheet only and applies them to the model in the order that they were instructed (using the Instructed Date field.)

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 asset status is updated in the Viewer window. If customers are impacted, then a new planned

outage event is placed upon the asset 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 must be specified in the Assigned Crews list. You can specify a crew by doing one of the following:
>
> • Select one or more crews within the Crew List on the Steps tab. Use these selections to populate the **Instructed To** field of the safety state transition step. Upon completing the step, the crews listed in the **Instruct To** field will also be listed in the safety document's Assigned Crews list.
>
> • Click the **Select Crews...** button () found above the Assigned Crews list on the safety document and use the Select Safety Crew dialog to populate the Assigned Crews list.

9. Repeat steps 3-8 for each switching step you want to instruct and complete.

Recording Additional Steps in Real Time

10. Additional steps may be added to the switching sheet in real time when it is in the 'Issued' state. Click the record button and proceed to record the actions as issued.

Completing the Switching Sheet

11. When all steps have been completed, click the **Tracking/Audit Log** tab and set the sheet state to *Completed* by clicking the **Complete** button. The **Confirm State Transition** dialog will open; click **Yes** to confirm the completion or click **No** to close the dialog without completing the sheet. The Finish Date may be updated, if necessary.

   • *Optional*: add a comment in the text field to the right of the **Complete** button.

   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 the 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 Completed "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.

Moving a Crew

Crews are automatically relocated as steps are instructed to them. As steps are completed, crews are moved to the appropriate asset based on the remaining instructed and non-complete switching steps. If all steps have been completed, the crew is moved back to the master asset or the previously operated asset, depending on the configuration. (If configured to go back to the master asset and one is not given, then the crew disappears from the Viewer.)

You can manually move a crew to the asset associated to the selected switching step. This option is available only if the step is instructed and has been instructed to a crew. This option allows you to move a crew to a different asset when multiple steps have been instructed to a crew.

To move a crew to an asset, follow these steps:

1. Associate the crew to the planned switching sheet as described in **Associating Crews**.

2. Transition the sheet to the Issued state, if it is not already.

3. Select the crew within the Crew List on the Steps tab header.

4. Instruct all steps in the sheet. Note that within the viewer, the crew initially moves from master asset to the first instructed asset and then to the next.

5. From the Steps list, right-click on an instructed step and select **Move Crew** from the options menu. The crew moves to the asset associated to the selected step.

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.

Each switching sheet version will go through a set of states.

- **Editing:** The current version of the sheet is being edited.

- **Checked In:** The current version of the sheet has been checked in. Any updates to the sheet other than instructing and completing steps will cause a new version to be created and that version will be in the Editing state.

The following describes how sheet version control works and presents examples of how the version and editing mode change as actions are taken on a switching sheet.

- When you first start a sheet, the sheet version is 1. The sheet's version number and editing state are displayed in the **Status Bar** at the bottom of the switching sheet. The new sheet's version is considered to be in an Editing state until it is checked in.

Action	Resulting Version and Editing Mode
Initial sheet is created	Version: 1 (Editing)

- When the sheet transitions to Issued state or whenever a switching step is instructed or completed in real-time mode, the system automatically checks in the current version of the switching sheet, but the version number is not incremented until you make changes, which will create a new version.

Action	Resulting Version and Editing Mode
Sheet transitions to Issued State, triggering automatic check-in	Version: 1 (Checked In)

- If you make switching step changes after the sheet has been checked in or change any field in the sheet, the system automatically creates a new version and increments the sheet's version number.

    Note: Your system's configuration determines which fields trigger a version change when edited. By default, a new version is created when any field is changed.

Action	Resulting Version and Editing Mode
Steps are added, triggering version update	Version: 2 (Editing)

- You can manually check in changes 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 the sheet's version is in an Editing state. When you click the Check In button, the current version is checked in, and the Check In button changes to Create New Version.

Action	Resulting Version and Editing Mode
User manually checks in version, using Check In Version option	Version: 2 (Checked In)

- You can manually increment a sheet's version after the sheet has been checked in using the Create New Version button. When you manually increment the version, the system creates a new version of the sheet and places that version into an Editing state.

Action	Resulting Version and Editing Mode
User manually increments version using the Create New Version option	Version: 3 (Editing)

- You cannot make changes to a switching sheet after it has been completed. Once a sheet is completed, it will be placed into view-only mode and cannot be edited any further.

Step Versioning

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.

- 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.
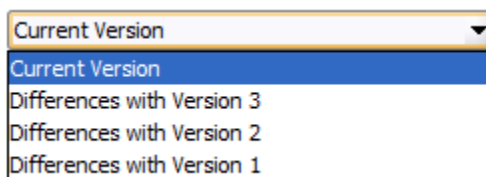
When you select a version, the Step # column uses outline numbering (1.1, 1.2) to identify steps that were added since the previous version.

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.

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 customers in the interrupted, isolated, and restored states:

- **Interrupted:** customer had supply at the start of the switching operation, lost supply (at some point) during the operation, and had supply again at the end of the operation.

- **Isolated:** customer had supply at the beginning of the operation and had no supply at the end of the operation.

- **Restored:** customers who were without supply during the operation and had supply at the end of the operation.

Important Note:
Service Alerts for planned events are triggered by the Impacted Customers List. Alerts will not be sent if the Impacted Customers List is not generated.

> **Note:** Customers marked as *Deleted* will not be included in the Interrupted, Isolated, or Restored total number counts.

The following rules apply to the Impacted Customer list:

- 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.

- If no Planned Dates are specified for the asset operations relating to an item in the list, then the dates will come from the sheet's Start and Finish Dates, which are required to generate the impacted customer list. The only exception to this rule is when working with Outage Correction sheets, which require step control times.

- The list can only be regenerated in study mode, since it displays the list of customers that will be impacted when the plan is executed and it uses your study session to calculate that list. See **Generating the List** on page 3-52 for more details.

- The list is not affected by the Real-Time execution status of the steps. The Work Agenda, Event Details, and Event Log are the source for Real-Time outage data.

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 the customer is impacted. Within date/time, the list displays each supply node along with the restore date/time. Within each supply node is a list of customers. You can expand or collapse any level of the hierarchy by clicking the + or - icon.

The Impacted Customer list displays the following fields and buttons:

- **# Interrupted** displays the number of customers who will be interrupted (Isolated and Restored) 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 different values depending on the type of row being displayed. There are three levels of information in the list:

  - **Impact Date** (level 1) displays the date the customers will be impacted. If the customers are not impacted by the switching steps in this switching sheet, but are being restored, then this date will be the start date of the switching sheet.

  - **Supply Node and Restore Date** (level 2) displays the supply point alias the customer is found in the model, followed by the Restore Date. The Restore Date is based on the Planned Date for the asset or, if no Planned Date was specified, the Finish Date of the switching sheet. Isolated supply points display "No Restore Date".

  - **Customer Name** (level 3) displays the customer's name.

- **Account Number** displays the customer's account number.

- **Meter Number** displays the customer's meter number.

- **Critical** displays whether the customer is a critical customer or not.

- **Address** displays the customer's street address.

- **City** displays the customer's city.

- **Zip** displays the customer's zip code.

- **Phone** displays the customer's phone number.

- **Result** displays the result of the impact, such as Restored or Interrupted. If a delete operation is initiated against a customer in the list, then the **Result** field will have a value of Deleted.

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 mode to apply the step actions and to determine the Impacted Customers. Your study model should be set up or reset appropriately before generating the list. This button is only enabled when the switching sheet is in Study mode.

- The **Move Customers to a Different Asset** button ( ) initiates the Move Customers dialog for selected customers. See **Moving Customers** on page 3-53 for information.

- **Mark Customers as Deleted** button ( ) marks the customers selected in the table as deleted.

- The **Reset all Deleted Impacted Customers** button () resets all impacted customers that were previously marked as deleted in the list.

- The **Print Preview** button () opens the Report Format dialog, from which the output format can be selected. The output will include the switching sheet header information and the Impacted Customer list.

- The **Print** button () opens the Report Format dialog, from which the output format can be selected. A hard copy of the switching sheet header information and the Impacted Customer list will be generated on the printer you select.

- The **Email** button () opens the Report Format dialog, from which the output format can be selected. An email composition window is generated with attached impacted customers list file named **`<sheet-type>_<sheet-#>.<format>`** and subject `Switching Sheet: <sheet-type>_<sheet-#>_impacted`. For example:

    Subject: Switching Sheet: *Planned_1079_impacted* (*Planned_1079.pdf*).

- The **Focus** button () focuses the primary Viewer on the selected asset.

- The **Show Critical Customers** button () filters the list to show only critical impacted customers; when toggled off, all impacted customers will again be shown.

Color Coding

Rows (customers) on the list are color-coded to show the status:

- Green - Restored

- Orange - Isolated

- Red - Deleted

- No background - Interrupted

Generating the List

To generate the Impacted Customer list, follow these steps:

Important Note:

Service Alerts for planned events are triggered by the Impacted Customers List. Alerts will not be sent if the Impacted Customers List is not generated.

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 that 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.

    Note: When the steps do not impact any customers, clicking this button will bring up an information dialog stating that no customers will be impacted as a result of the operations in the current switching sheet.

Sorting Impacted customers list

The Impacted Customers list can sort by clicking on a column header. By default they are sorted by impacted date and customer name in ascending order. Click once to sort them in descending order. An icon on column header indicates the current sort column and sort direction; the up arrow (▲) indicates ascending order; the down arrow ▼ indicates descending order. Printed output, through print-preview and print options, use the default sort order.

Deleting and Restoring Customers from the List

To remove a customer from the list, right-click the customer and select **Delete** from the options 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. If the customer is impacted multiple times, then that customer will be marked as deleted in each of the lists.

To restore (un-delete) a customer, right-click the customer and select **Undelete** from the options 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 customers have been incorrectly associated with an asset, you may need to move them from an asset that will be impacted to an asset that will not be impacted. To move customers from their current asset to another asset, complete these steps:

1. On the Impacted Customers tab, select the rows for the customers you want to move.

    > **Note:** the expandable folder nodes are not selectable; you must select customer names.

2. Right-click and select **Move Customers...** from the options menu. The Move Customers dialog box opens, displaying the customer names, addresses, and their original asset as defined by CIS.

    > **Note:** If you click the **Move Customers...** button without first selecting customer rows, you will receive an "Invalid Customer Selection" error with the message: Only customer rows selected are considered by the Move Customer feature. Any selected expandable folder nodes are ignored. Select at least one customer row to continue.

3. Click on the new asset in the Viewer. The New Asset field on the Move Customers dialog is populated with the selected asset.

4. Click **OK**. The system determines whether or not the new asset is also an impacted asset.

    If the new asset is not an impacted asset, the customers are moved to the new asset and are removed from the impacted customer list.

    If the new asset is an impacted asset, a confirmation dialog box is displayed. Do one of the following:

    •   Click **Yes** to continue with the move. The customers are moved to the new asset within the Impacted Customers list. If the selected customers were previously moved to a new asset, another confirmation dialog is displayed. Do one of the following:

        •   Click **Yes** to continue with the move. The existing customers move record is overwritten.

        •   Click **Cancel** to return to the Move Customers dialog so you can select a different asset.

- Click **No** to cancel the move and close both the confirmation dialog and the Move Customers dialog.

- Click **No** to return to the Move Customers dialog so you can select a different asset.

- Click **Cancel** to cancel the move and close both the confirmation dialog and the Move Customers 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 the switching sheet with other switching sheets for overlaps of time, control zone, or affected assets.

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.

If the current plan has a time, control zone, or asset overlap with another plan, the Overlap indicator is displayed on the switching sheet **Status Bar**. Use the Overlaps tab to view details about the overlaps.

Using the Overlaps Tab

The Overlaps tab displays the following fields and buttons:

- The **Update Overlaps** button ( ) updates the Overlaps list based on the current settings.

- The **Range** drop-down allows you to specify how to use the From and To dates. Options are:

  - Sheet Start and Finish Dates

  - + 1 day

  - + 1 week

  - + 1 month

  - + 1 year

  For example, if you select Sheet Start and Finish Dates, the system updates the From and To dates to match the sheet's Start and Finish dates entered on the Request tab. If you select +1 week, the system displays overlaps that are within and one week after the sheet's Start and Finish dates.

- The **From and To** fields specify the range of dates for which you want to view overlaps. These fields are automatically populated based on your selections in the Range field. If you manually enter values in the **From** and **To** fields, those values will override what was auto-populated by the Range selection.

- The **Filter By** drop-down allows you to specify the type of overlaps you want to view: Assets, Control Zones, or Time. See **Updating the Overlaps List** on page 3-55 for details.

- The **Open Selected Switching Sheet** button ( ) open the switching sheet selected in the overlaps list. Alternatively, you can right-click on the switching sheet and select **Open Switching Sheet** from the option menu.

- The **Export Table** button ( ) is used to export a comma separated value list of the table contents to a file.

- 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 **Viewing an Overlapping Switching Sheet** on page 3-56 for details.

  - The **Overlap Type** column displays the type of overlap the sheets have with each other. Values include Asset, Control Zone, Time. When looking for overlaps in the past, it is possible to also display sheets with overlap types of Past Assets, Past Control Zone, and Past Time. These "Past" types indicate switching sheets that have Finish dates that are in the past, but are still active.

  - The **Sheet #** displays the switching sheet number that contains the overlaps.

  - The **Type** column displays the type of switching sheet.

  - The **# Steps** column displays the total number of steps included in the switching sheet. This number basically matches up with the last step number in the sheet's Steps list and does not include child aggregate or Block steps.

  - The **# Assets** column displays the number of asset overlaps.

  - The **# Zones** column displays the number of overlapping control zones.

  - The **# Hours** column displays the number of hours the sheet overlaps with the current sheet. This value is based on the dates specified in the Start and Finish date fields on each of the switching sheets.

  - The **# Supply Nodes** column displays the number of impacted nodes shared by the two switching sheets.

  - The **User** column displays the user ID of the requestor of the switching sheet.

  - The **Start Date** column displays the start date of the switching sheet.

  - The **Finish Date** column displays the finish date of the switching sheet.

  - The **Pressure Zones** column is the Pressure Zone value as displayed on the Request tab of the switching sheet.

  - The **Description** column is the Description value as displayed on the Request tab of the switching sheet.

  The list on the Overlaps tab supports **Quick Sorting** and **Dynamic Filtering**.

Color Coding

Rows on the Overlaps tab are color coded to indicate the type of overlap. The **Overlap Type** column also describes the overlap type:

- **Gray (Past)**: the switching sheets have an overlap, but the overlapping times on the sheets are in the past. To distinguish between the types of past overlaps, the foreground coloring will be set to Red, Orange, or White based on the type of past overlap it is. These colors have the same meaning as the background colors used to define the type of overlap for future overlaps. See the following color definitions for more details.

- **Red (Device)**: The switching sheets have device overlaps.

- **Orange (Control Zone)**: The switching sheets have control zone overlaps.

- **White (Time)**: The switching sheets overlap in time only.

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.

To update the Overlaps List:

1. Use the **Range** and **From/To** dates (for asset and control zone overlaps) to specify the time period for which to display overlaps.

2. From the **Filter By** drop-down, select the type of overlaps you want to list. For example, if you want to show only switching sheets that have asset overlaps within a specified date range, select **Assets** from the drop-down.

3. Click the **Update Overlaps** button () to refresh the list based on your selections.

4. Standard filtering and sorting options are available for the results list.

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 options 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 Workspace 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.

Using the View Areas Tab

Use the View Areas tab to save and load view areas. The first row in the View Areas table contains a special *Dynamic View* (*i.e.*, All Assets) that contains all assets associated with the switching sheet; as assets are added in steps, the dynamic view is automatically updated to include those assets.

The View Areas tab displays the following fields and buttons:

- The **Auto-Load in Viewer** drop-down allows you to assign a View Area to a Viewer, which will then load that view whenever the sheet has focus. Note that the auto-load function does not open the Viewer so you must start the Viewer to see the 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 All Assets (Dynamic View) description is not editable.

- 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 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 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 Web Switching Management window, click one of the **Save Map** buttons on the toolbar.

   - Click [📷 1] to save the map area that is currently displayed in Viewer 1.

   - Click [📷 2] to save the map area that is currently displayed in Viewer 2.

   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 options menu options):

   - Click [📁 1] to load the selected viewing area to Viewer 1.

   - Click [📁 2] to load the selected viewing area to Viewer 2.

   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

Click the Reload All Viewers button ([🔄]) to reload 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 no Viewers are 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 options menu). The viewing area is removed from the list.

Viewing the Audit Log

The Tracking/Audit Log tab displays the current state of the switching sheet and allows you to transition to a different state. You can provide comments to explain the reason or circumstances around the transition in the Sheet State Tracking panel. See **Changing the Switching Sheet State** on page 3-17 for more information, including valid switching states.

The Audit Log table 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.

The Audit Log table contains the following fields and buttons:

> **Note**: You cannot change any information for existing entries in the audit log table.

- **Entry Date** displays the Date and Time when the change was made.

- **Sheet Version** 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 3-18 for state descriptions.)

- **Entry By** displays the user who initiated the change.

- **Details** displays a brief description of the audit entry.

> **Note**: You cannot change any information for existing entries in the audit log table.

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 Comment to the Audit Log

The Comment section of the Audit Log panel allows you to add a comment to the log.

1. Click in the Comment field and enter a comment. The **Add** button (➕) will be enabled.

2. Click ➕ to add the comment to the log.

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. The switching sheet data will be sent as an email attachment in a chosen file format.

> **Note**: Your email client will be used for sending the email. Depending on your email client, some attachment behavior may be different than described. If you do not have an email client installed and set up on the PC from which you are running Web Workspace, you will not be able to email switching sheet data.

1. Click the **Email...** button ( ).

2. From the **Switching Report - Content Selection** 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.

4. Click **OK**.

   - The Subject field is automatically populated; you can edit this field if you wish.

   - The selected data is attached to the email.

     Note: depending on your configuration, you may be given the option to name the switching sheet data attachment prior to the file's attachment; the standard configuration will always name the file according to the sheet type and number (*e.g.*, Planned_1003.pdf).

5. (Optional) Enter any text you want to include with the message.

6. **Send** the message according to your email client's functionality.

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 supplemental documentation to the switching sheet. External Documents are stored in the database, so shared file systems are not needed.

> **Note:** External Document files may be images (e.g., jpg, png, bmp), documents (e.g., doc, docx, odt), spreadsheets (e.g., xls, xlsx, ods), etc.

Using the External Documents Tab

The External Documents 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.

- **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.

- **Description** is a user-defined description. You can enter up to 4000 characters in this field.

- The **Attach** button (![+]) allows you to attach an external document to the switching sheet. See **Adding an External Document** on page 3-61.

- The **Delete** button (![x]) deletes the selected external documents from the switching sheet. See **Removing an External Document** on page 3-61.

- The **Open** button (![folder]) allows you to open the selected document. See **Opening and Editing an External Document** on page 3-62.

- The **Save As** button (![save]) allows you to rename and save a selected document to the directory of your choice. See **Saving an External Document to Another Location** on page 3-62.

Adding an External Document

To add an external document to the active switching sheet:

1. Click the **External Documents** tab.

2. From the toolbar, click ![+] .

3. From the Attach Files window, select the files you want to add to the sheet and click **Attach 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 to the database, and their New status value is cleared.

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 in the table.

3. Click ![x] .

> **Note:** alternatively, right-click the document and choose **Delete** from the options menu.

The status of the selected document is set to Deleted, and the file is displayed in red.

4. 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.

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 save a *copy* of the current version of the document on your PC, follow these steps:

1. From the **External Documents tab**, select the document and click the **Save As** button (; or right-click and select **Save As...**). The **Save File As** dialog is displayed.

2. Browse to the directory where you wish to save the copy.

3. To change the file name, enter in a new name in the **File Name** field.

> **Note:** There is no rule against changing the file type. If you alter the file extension in the File Name field, then be aware that the file name will be saved exactly as you have typed it.

4. Click **Save**. A copy of the current database version of the document is saved to the directory with the specified name.

Saving a Selection of External Documents 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 save a copy of more than one document at once to your PC, follow these steps:

1. From the External Documents tab, select multiple document entries and click the **Save Files to Directory...** button ( ); or right-click and select **Save Files to Directory...**). The Save Files To Directory dialog is displayed.

> **Note:** The **Save Files to Directory...** button ( ) is only visible when more than one entry is selected in the External Documents list.

2. Browse to the directory where you wish to save the copy. Another option is to enter the directory path in the Directory text field.

3. Click **Save Files To Directory**. Copies of the current database versions of the documents are saved to the specified directory.

Opening and Editing an External Document

External Documents may be opened for inspection or to edit depending on the state of the switching plan. If the plan is in View-Only mode (; see **Edit and View-Only Modes** on page 3-9), the document will be opened in read only mode; if the plan is in Edit mode ( ), the document will be opened with write permissions.

Opening 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 extracted to a local temporary directory and opened in the application associated with the file extension.

> **Notes:** If the file extension, or type, is unknown or the application is not available, a message will be displayed indicating that the application is unknown.

Editing an External Document

External Documents opened from a sheets in Edit mode are available to edit.

1. Make changes to the document as necessary.

2. Save and *close* the document; the database will be updated with the changes made in the extracted (temporary) document the next time the switching sheet is saved.

Troubleshooting Issues with External Documents

It is best to close the document after it has been edited and saved due to conflicts that can occur if the local file is saved outside of the control of Switching Management.

When the switching sheet opens, the database attempts to extract the external document to the temporary folder and compares the date stamp of its version to the local copy. If the file in the temp directory is newer than the database version, it gives a warning that changes to the local file will not be saved (because the plan was switched to View-Only mode):
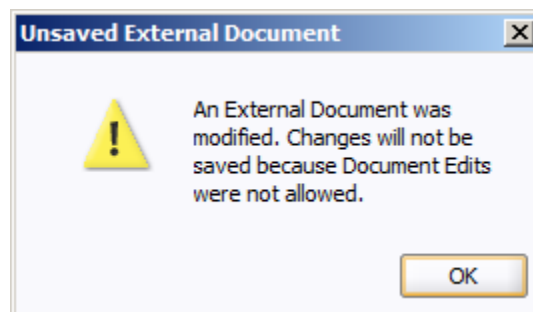
Once you click **OK**, the database will overwrite the local changes with the saved version of the external document in the database.

If the extracted document is still open when the database attempts to restore the saved version, a file lock conflict will result in another warning to inform you that the system cannot extract the database version of the document to the temporary folder and request that you take action to remove the conflict:
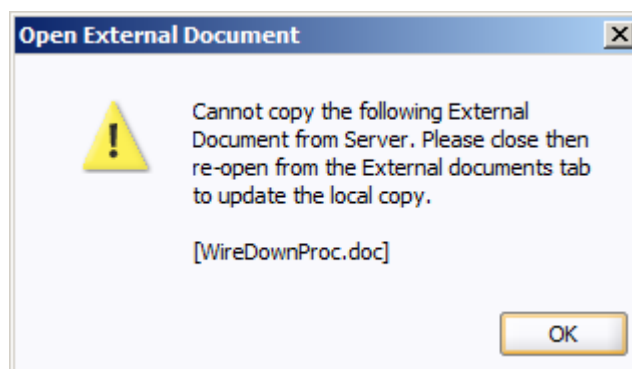
To remove the conflict, perform the following steps:

- On the warning dialog, click **OK**.

- Close the external document.

- In the switching plan window, click any tab other than External Documents (*e.g.*, Steps), and then click the External Document tab again. The system will extract the database version of the external document to the temporary directory.

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.

> **Note:** Web Switching is configured to limit you from having more than 15 switching sheets loaded at one time. Attempts to surpass the limit will result in an error.

- **Open a Switching Sheet Window from Switching Sheet List**

- **Open a Switching Sheet using Web Switching Request**

- **From the Work Agenda**

- **From the Event Details**

- **From Crew Actions**

- **From the Control Tool**

> **Note:** If a step was highlighted when the sheet was closed, it will open with that step highlighted and centered in the steps list.

Open a Switching Sheet Window from Switching Sheet List

To open a switching sheet from the Switching Sheet List:

1. From the **File** menu, select **Switching Sheet...** from the **Open** option. The Switching Sheet List opens. Existing switching sheets are listed in the tabular view; the rows are color-coded to reflect switching sheet status:

   - **Green**: In Progress

   - **Red**: New

   - **Bright Yellow**: Scheduled, Checked, or Approved

   - **Pale Yellow**: Prepared

   - **Orange**: Requested

   - **White**: Hold/Pending

2. Select one or more sheets to open. To open multiple sheets, do one of the following:

   - Click, hold, and drag to select multiple adjacent rows.

   - Control-click to select multiple non-adjacent rows.

   - Use Dynamic Filtering to select sheets in the table and select all results by pressing Control+A.

   This window also supports standard filtering and sorting. (See **Sorting** on page 1-11 and **Filtering** on page 1-13.)

   Note: The sheet will be loaded with the last highlighted step, if any were highlighted when the sheet was last closed, centered in the middle of the steps list.

Open Switching Sheet using Switching Sheet Search

To search for an existing Switching Sheet:

1. From the **File** menu, select **Switching Sheet Search...** from the **Open** option.

2. In the Search Switching Sheet dialog, enter the desired text to search and press **Enter** or click the **Search** (🔍) button.

Open a Switching Sheet using Web Switching Request

To open a switching sheet from the Web Switching Request window:

1. From the **File** menu, select **Open**, and then select **Switching Sheet...**. The Switching Sheet List opens.

2. Select a sheet and click **Open**.

From the Work Agenda

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…** option from the **Actions** menu. The Open or Create New Switching Sheet dialog is displayed.

3. Select the sheet you want to load from the Pre-Created Switching Sheets list and click **Open**. (You can start a new sheet by selecting a sheet type and clicking **Create**.)

From the Event Details

1. Select **Switching…** from the Actions menu. The Open or Create New Switching Sheet dialog is displayed.

2. Select the sheet you want to load from the Pre-Created Switching Sheets list and click **Open**. (You can start a new sheet by selecting a sheet type and clicking **Create**.)

From Crew Actions

1. If a crew has been placed en route to a Master switching sheet event, then select the crew in the crew list.

2. Select **Switching…** from the Actions menu. If only one sheet is associated with the crew, it is displayed in the Web Switching Management window. If multiple sheets are associated with the crew, the Crew to Sheet Selection List displays all associated sheets. If no sheets are associated with the crew, an error message appears.

3. Select a sheet and click **Open**.

From the Control Tool

1. From a Viewer, double-click an asset that is involved in a switching sheet to open the Control Tool.

2. Click the **Switching Plans…** button.

   - If the asset is associated to one switching sheet (*i.e.*, it is listed in the **Asset** field on the switching sheet's **Request** tab) **or** if it is included in one switching sheet step, that sheet will be opened in the Web Switching Management window.

   - If the asset is associated with multiple switching sheets **and/or** included in multiple switching sheet steps, the **Asset to Sheet Operation List** window will open. Each

associated sheet **and/or** operation will be listed in a separate row. Select a row and click **Open**.

Note: The Asset to Sheet Operation List displays steps for active switching sheets and switching sheets that have been completed within the last 30 days.

Copying a Switching Sheet

You can create a new switch plan that includes all of the steps in the open switching sheet by using the **Copy As** function. To copy an open switching sheet, do the following:

1. Select **Copy As...** from the Switching Sheet's File menu to open the **Copy Switching Sheet As** dialog.

2. Select the new switching sheet's type:

    • Planned

    • Emergency

    • Template

    • Outage Correction

3. Click **Create a Copy** to create the new switching sheet.

    Note: The switching sheet type will determine how the new sheet opens (e.g., recording on or off, which tab is visible, etc.).

Deleting a Switching Sheet

You can mark a switching sheet as deleted if it is no longer being used. Deleted sheets are retained by the system and can be loaded in View-Only mode when hard-associated to a canceled event. Web Switching Management does not support full deletions of switching sheets from the database. A record of all activity for a switching sheet is always retained in the database.

Note the following rules regarding deleted switching sheets:

• The Delete option is only available for planned, template, outage correction, and emergency sheets that do not contain any real-time instructed or completed steps or any event associations other than canceled and manual events.

• You cannot delete a switching sheet once it has been scheduled. If you need to delete the sheet, you must Cancel it first.

• You cannot delete an outage correction sheet that has an event association.

• Deleted sheets do not appear in the Asset to Sheet Operation List. (This list is displayed from the Control Tool.)

• Safety documents associated with a deleted sheet do not appear in the Asset to Safety Document List. (This list is displayed from the Control Tool.)

• The Impacted Customer lists and External Document lists are cleared for deleted sheets.

• Deleted sheets are ignored by the Model Verify functionality.

To delete a switching sheet, follow these steps:

1. Click the Tracking/Audit Log tab.

2. Enter the reasons for the deletion in the Reason field to the right of the grayed Delete button. (The Delete button is not enabled until you enter text in the Reason field.)

3. Click the **Delete** button.

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 Web 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

Emergency switching sheets are typically created 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 associated actions pertaining to the event, including the Open step operation, will be included in the new sheet. The sheet cannot be deleted and will always remain associated to the originating event.

To create an emergency switching sheet, do one of the following:

- With an event selected in the Work Agenda, select **Switching...** from the Actions menu.

- From the Event Details Window, select **Switching...** from the Actions menu.

Open or Create New Switching Sheet

The **Open or Create New Switching Sheet** dialog will open with the options of creating a new Emergency or Outage Correction switching sheet (from the Switching Sheet Types pane) or opening an existing switching sheet that is associated to the event from the Pre-Created Switching Sheets pane.

Create New Sheet

1. Select the Emergency sheet type from the Switching Sheet Types pane. The **Create** button is enabled.

2. Click the **Create** button.

3. The Web Switching Management window displays the new emergency sheet.

Open an Existing Sheet

1. Select an existing sheet from the Pre-Created Switching Sheets list. The **Open** button is enabled.

2. Click the **Open** button.

3. The Web Switching Management window will load the selected switching sheet.

Alternative Method of Creating an Emergency Switching Sheet

- From the **File** menu, select **New** and then select **Switching Sheet...** to display the New Switching Sheet window. Select **Emergency** as the sheet type and click **Create**.

    Note: an emergency switching sheet created this way will not be associated with an event.

Recording Emergency Operations

The new emergency sheet is automatically populated with Start and Finish dates. The Start date is the current date/time; the Finish date is defined as the Start date plus a predefined standard event duration.

   Note: The duration is set to four hours in the product environment.

The sheet opens with the Steps tab active, real-time mode enabled, and recording on. If the Viewer is open, it transitions to real-time mode also. You can begin recording steps as described in the next section.

To record emergency switching operations, complete these steps:

1. Start a new emergency sheet as described in the previous section.

2. Create the steps by selecting assets 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 3-32 for details.

   Once an action is completed in the Control Tool, 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 or the current time if a Control Tool date/time value is not specified.

   - Instructed actions use the date/time specified from the Control Tool to populate the Instructed Date field. If no Control Tool date/time value is specified, then the current time is used to populate the Instructed Date field.

   - Any outages created by completing steps in Real Time that are associated to an Emergency switching sheet will be classified as Real Outages and not Planned Outages. These Real Time step completions can occur from the Control Tool or from Web Switching Management.

3. When you have completed all emergency steps, click the **Tracking/Audit Log** tab and set the sheet state to *Completed* by clicking the **Complete** button. The **Confirm State Transition** dialog will open; click **Yes** to confirm the completion or click **No** to close the dialog without completing the sheet. The Finish Date may be updated, if necessary.

   - *Optional*: add a comment in the text field to the right of the **Complete** button.

   Note: Changes can no longer be made to the completed sheet.

Switching Sheet List

The Switching Sheet List is a tool used to manage active switching sheets and any switching sheet completed in the last 30 days. To load switching sheets older than 30 days, use the Search Switching Sheet window. The Switching Sheet List is not dynamically updated once it is displayed. If you keep the window pinned and visible, you can update the list using the Refresh button. If the list is closed and then reopened, the list will automatically refresh with the latest data.

The Switching Sheet List serves as the primary mechanism for loading switching sheets. You can either double click a single entry or highlight multiple entries and click the **Open...** (📂) toolbar option. A right-click **Open...** menu option is also available. When loading multiple switching sheets, a progress bar will be displayed at the bottom of the window. Once an open request has been initiated, it cannot be cancelled, but the system does restrict you from having more than 15 switching sheets open at any one time.

Menu and Toolbar Features

This section lists and describes the menu options and toolbar icons available in the Switching Sheet List.

File Menu

The table below describes the options available on the File menu.

Menu Option	Description	Toobar Icon
Export Table...	Opens a dialog to allow you to save the current table view data to a comma separated value (csv) file.	🔼
Print List...	Displays the Print Preview dialog so you can view or print the list.	🖨
Print Preview Selected Sheets...	Displays the Content Selection dialog so that you can choose which sections of each highlighted sheet to include in the generated documents. By default, PDF documents will be created for each of the highlighted switching sheets.	📄
Print Selected Sheets...	Displays the Content Selection dialog so that you can choose which sections of each highlighted sheet to include in the generated documents. By default, PDF generated documents will be printed for each of the highlighted switching sheets. The Content Selection dialog also includes the target print service. Your default printer will be the default option selected in the combo box list.	📇
Exit	Closes the Switching List window.	--

Sort Menu

The table below describes the options available on the Sort menu.

Menu Option	Description	Toobar Icon
Sort Dialog...	Opens the Sort dialog, allowing you to create, modify, apply, and save user-defined sorts. See **Using the Sort Dialog Box** on page 1-12.	--
Sheet #	Applies the default sort, which is the sheet # in descending order.	--

Filter Menu

The table below describes the options available on the Filter menu.

Menu Option	Description	Toobar Icon
Filter Dialog...	Opens the Filter dialog where you can create, modify, apply, and save user-defined filters. See **Filtering** on page 1-13.	--
Active	Displays all the active switching sheets (switching sheets NOT in the Status New, Completed, Deleted, Cancelled, or Training-Completed).	--
All	Displays all non-complete switching sheets and completed switching sheets from the last 30 days. - No Icon Completed - Displays switching sheets that have been completed in the last 30 days.	--
Completed	Displays switching sheets that have been completed in the last 30 days.	--
In Progress	Displays all switching sheets in the In Progress state.	--
My Sheets	This displays all sheets that were created or are owned by the current user.	
New	Displays all switching sheets in the New state.	--
Require Verification	Displays the switching sheets that require verification after model change.	
Today	Display switching sheets that are scheduled or are being worked on Today.	--
Tomorrow	Display switching sheets that are scheduled for Tomorrow.	--

> **Note:** The Today and Tomorrow Switching Sheets List filters are based on the Start and Finish dates of the switching sheets. If tomorrow's or today's date falls within that time period, then the sheet will be included in the list. If the sheet has a Start date that is before today's date and has no Finish date, then the sheet will be included in the list.

Actions Menu

The table below describes the options available on the Actions menu.

Menu Option	Description	Toolbar Icon
Open...	Opens the selected switching sheets. If the window is not pinned or docked, the window will be closed once the sheets are loaded. **Note:** If the sheet is locked by another user, the Failed to Establish User Lock dialog box will be displayed; see **Opening Locked Documents** on page 3-72 for information.	
Refresh	Refresh the switching sheet list with the latest data from the database.	
Copy Steps to Clipboard	Copies the selected switching sheet's steps without opening it. The copied steps may then be pasted into another switching sheet.	
Pin	Pin the window so that it will not close after an open switching sheet request. **Note:** The icon shows the current state (*i.e.*, unpinned).	
Unpin	Unpin the window so that it will close after an open switching sheet request. **Note:** The icon shows the current state (*i.e.*, pinned).	
Dock	Dock the window into the NMS environment window. The tool will be docked next to the Work Agenda list.	--
Undock	Undock the window out from within the NMS environment window.	--

Help Menu

The table below describes the options available on the Help menu.

Menu Option	Description	Toolbar Icon
Switching Sheet List Help (F1)	Opens the online help system to the Switching Sheet List help content.	--

Switching Sheet List Data Fields

The Switching Sheet List provides a tabular view of the switching sheets. The sort and filter criteria are displayed above the table.

- The **Status** column displays the status of the switching sheet. See **Switching Sheet States** on page 3-18 for a complete list of switching sheet states.

- The **Type** column displays the switching sheet's type.

- The **Sheet #** column displays the switching sheet's number.

- The **Pressure Zones**, **Lift Stations**, **Description**, **Owner**, **Charge Number**, **Start Date**, **Finish Date** columns display the values from the sheet's **Request** tab.

- The **#Steps** column displays the number of steps in the switching sheet.

- The **User** column displays the user that created the switching sheet.

- The **Completed Date** is the date the switching sheet was completed.

- The **Verify** column displays Yes when the switching sheet involved any model changes and require verification.

Opening Locked Documents

The Failed to Establish User Lock dialog box appears when opening switching sheets or safety documents locked by another user. The Previously Established Lock list displays the details of locked sheet/document:

- **Number:** the number of the sheet/safety document.

- **User:** the user who has the sheet/safety document locked

- **Type:** the sheet/safety document type; for example, a planned switching sheet or a HOLD safety document.

- **Date:** the date when the sheet/safety document was locked.

Click **OK** or the window close button to dismiss the dialog box.

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 3-28.)

Events can be associated to switching sheets in two ways:

- **Hard Associations** are automatic associations that are normally made as you perform actions within Web 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; however, the association can be moved to a new switching sheet if the steps that created the event are moved.

- **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. Partially restoring an outage or adding customers to an outage will create a manual association between the switching sheet and the job if no association (hard or soft) already exists.

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.

Crew Assignments

Normally when working a switching sheet, the crews are automatically associated to the sheet when the event the crew is assigned to is associated to the sheet. These crews show up in the Crews list just above the steps on the Steps tab. When crews need to be added to the list that will not be assigned or cannot be assigned to events, then the Select Crew dialog must be used. The Select Crew dialog is initiated from the Crews list **Select Crews...** toolbar button (). The dialog has two tabs for selecting the type of crew you wish to associate to the switching sheet.

System Crews

System crews are the same crews that are available to you from the Crew Actions list. Only available crews will show up in this list. The System Crews list shows the crew's ID, Type, Contact, Shift Status and Job Status. Table column filter fields are available to filter the list down to a specific crew entry. Once an entry is found, the **OK** or **Apply** buttons can be used to assign crews to the switching sheet. Selecting the **OK** button will assign the crews and close the Select Crew dialog. The Cancel button will cancel any existing selections and close the Select Crew dialog.

Contractors

The Contractors tab gives you the capability to create contractor crews on the fly. Contractors are crews that are not system crews and do not exist in the NMS proper crew list. The crews available from the Contractor Crew List are only available for selection from Web Switching sheets and Web Safety documents. These crews will not be generally available throughout the NMS environment.

Working with Safety Documents

Oracle Utilities Network Management System Safety Documents, which are an electronic representation of paper safety documents used for switching operations, provide information about a particular operation and record the issuance and release of tags on assets. For switching operations, safety tags are first physically placed on assets, and then the safety document is issued; note that the safety tag must match the safety document type (*e.g.*, Hold tags are used with Hold safety documents). Issuing the safety document 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 assets and the switches may then be closed.

This section includes the following topics:

- **Understanding Safety Document Types**

- **Mapping Step Types to Safety Document Types**

- **Using Safety Documents in Switching Plans**

- **Opening Existing Safety Documents**

- **Completing Safety Documents**

- **Aborting Safety Documents**

Understanding Safety Document Types

Oracle Utilities Network Management System Web Switching Management includes a group of safety documents that represent common utility safety document types. These standard forms may be used to represent established safety documents in your organization.

- **Clearance** - indicates that clearance for work on an asset 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 asset or area that requires work has been made safe to work on or in.

- **Delegated Control** - safety document (DCZ) allows users to identify a section of the network that has been turned over to the field for operation. The operator is no longer in control of the section of the network. It is the responsibility of the crew to operate in a safe and secure manner and document actions taken. See **Delegating Control of a Network Area** on page 3-88 for more information.

- **Hold** - indicates that the tagged assets should not be operated (*e.g.*, if the asset is open, it should remain open). Hold safety documents are used when the asset 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 an asset.

- **Information Note** - provides some pertinent information about the assets. Information Note safety documents are for informational purposes only. These safety documents do not restrict operation of the asset, but provide information that a crew member or utility employee should be aware of when working on the assets.

- **Warning Tag** - provides warning information about the tagged assets. Like Information Note safety documents, Warning Tags are for informational purposes only. These safety documents do not restrict operation of the assets, but provide information that a crew member or utility employee should be aware of when working on the tagged assets.

While safety document names and features may vary, understanding these 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 an asset.

Mapping Step Types to Safety Document Types

Safety document types are associated with 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

- **Delegated Control (DCZ)**
    - Place DCZ Tag
    - Remove DCZ Tag

- **Hold**:
    - Place Hold Tag
    - Remove Hold Tag

- **Informational Note**:
    - Place INFO Tag
    - Remove INFO Tag

- **Warning Tag**:
    - Place WARN Tag
    - Remove WARN Tag

Using Safety Documents in Switching Plans

Understanding the Safety Documents Tab

The Switching Sheet Safety Documents tab displays a list of all safety documents associated with a switching sheet. The Safety Documents tab displays the following fields and menu bar buttons:

Fields

- **Type** displays the type of safety document. (See **Understanding Safety Document Types** on page 3-75.)

- **Doc #** displays the safety document number.

- **Status** displays the status of the safety document. Valid statuses are: New, Issued, Released, Unissued, Aborted, Deleted, and Completed.

- **Crews** displays the crews assigned to this safety document.

- **Description** displays a description of the safety document.

Menu Bar Buttons

- The **Refresh** button( ) refreshes the safety document list.

- The **Create a Safety Document** button ( ) opens an options menu that allows you to choose a safety document type or open the Select Safety Type dialog.

- The **Open** button ( ) opens the selected safety document. (Alternatively, you can double-click the document in the list.)

- The **Associate** button ( ) displays the Switching Sheet Association dialog. From the dialog you can associate the safety document to a different switching sheet. See **Switching Sheet Associations** on page 3-93 for more details.

- The **Disassociate** button ( ), when pressed, displays a confirmation dialog pertaining to the disassociation of the safety document. Confirming the action will cause the safety document to be disassociated from the switching sheet. Once disassociated, the document is converted into a stand alone safety document.

- The **Delete** button ( ) deletes the selected safety document. Safety documents can only be deleted if there are no steps associated to the document. Deleted safety documents are not removed from the database.

Safety Document Dialog Overview

The Safety Documents associated to switching sheets are displayed as detached windows. When working with Web Safety, when there is no originating switching sheet, the document takes on a slightly different behavior and look. For more information on Stand Alone Safety Documents see **Web Safety** on page 3-97.

Toolbar Icons

- 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 **Email** button (✉) allows you to email a version of safety document. You will be prompted to select a report format (PDF, HTML, RTF, or XML); click **OK** to generate the file, which will be attached to a new message launched from your default email application.

- The **Validate** button (✓), which is available on the DCZ safety documents, is used to determine whether the listed assets potentially isolate an area of the network.

- 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). This button is enabled when a document is in the New and Released states so the document may be issued and released multiple times. If any of the assets in the Tag Points list are not associated to steps, then the appropriate conditions will be placed on those assets when the document is transitioned to the Issued state.

- The **Unissue** button (📋) is used to place an Issued safety document or a Released safety document into an Unissued (edit) state where the asset lists can be altered. While in the Unissued state, you can add assets to the lists and mark assets already in the list for removal. Only when the safety document transitions back to the Issued state will the changes be applied.

- 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). If any of the assets in the Tag Points list are not associated to steps, then the appropriate conditions will be removed from those assets when the document is transitioned to the Completed state.

- The **Abort** button (🔴) allows you to set the status of the safety document to Aborted. The system prompts you to confirm the action before aborting. This button is only available in real-time mode and only for safety documents that are in the New state.

- The **Associate** button (🔗) displays the Switching Sheet Association dialog. From the dialog you can associate the safety document to a different switching sheet. See **Switching Sheet Associations** on page 3-93 for more details.

- The **Disassociate** button (🔗), when pressed, displays a confirmation dialog pertaining to the disassociation of the safety document. Confirming the action will cause the safety document to be disassociated from the switching sheet. Once disassociated, the document is converted into a stand alone safety document.

Safety Document Panes

The safety document dialog displays the following panes:

- **Tag Points** display the assets that the safety document is associated with.

  Table Columns

  - **Edit State (untitled):** an iconic representation of the edited state of the asset in the Unissued state. The edits will be applied when the document is issued. When working in Study mode, the edit state indicators will remain visible until the document is issued in real time.

    - ✖: The asset has been marked for removal.

    - ➕: The asset has been added to the asset list and will be used as a boundary point the next time the document is issued.

  - **Asset:** the asset used to define the area or point of coverage of the safety document.

  Toolbar Buttons

  - 🔴 **Recording On**/⬜ **Recording Off**: Toggles recording of assets off or on. The Tag Points list allows users to record assets via selections from the viewer. To enable this feature, simply turn on recording and select assets in the viewer.

  - The **Add Asset...** button (🔲) allows you to manually add an asset to the list.

  - The **Undo Asset Edit** button (🔁) allows you to undo an addition or removal of an asset from the list. This option is only available when making asset modifications in the Unissued state.

  - The **Remove Asset** button (✖) allows you to remove a selected asset from the Tag Points asset list.

  - The **Object Focus** button (🔴) focuses the Viewer 1 window on the selected asset.

- **Other Assets** is a text field that allows you to enter a list of non-modeled assets.

  Note: An entry is required in at least one of these fields: **Tag Points** or **Other Assets**.

- **Pressure Zones** displays the value found in the Pressure Zones field of the originating switching sheet. To alter this value, simply enter your new value into the field.

  - The Update button (🔵) is used to populate the Pressure Zones field with the list of pressure zones associated to the linked switching sheet step assets and the assets listed on the safety document.

  - The **Reset Pressure Zone Value** button (🔳) is used to replace the safety document's current Pressure Zones value with the associated switching sheet Pressure Zones field value when the safety document was created. The switching sheet's Pressure Zones field is found on the Request tab.

- **Assigned Crews** displays a table list of the Crew IDs of the crews that the safety document has been issued to, as well as each crew's mobile number, pager number, and crew type. The crew IDs are auto-populated with the value from the **Instructed To** field in the safety state transition switching step. A crew is required in this list before an Issue safety state transition step can be completed in real-time.

  - To select a crew to assign to this safety document, click the **Select Crew...** (🔳) button to open the Select Safety Crew dialog. See **Assigning Crews to a Safety Document** on page 3-81.

- To display the selected crew information, click the **Crew Info...** (ⓘ) button.

- To indicate whether the crew is issued or clear of the zone defined by the safety document, click the **Crew Issued/Clear** (🖱) button and select either **Issued** or **Clear**. The Position column will be updated with the status.

- To delete crews from this list, click the crews and then click the **Remove Crew**s button (❌). At least one crew must remain assigned while the document is in the Issued state.

- **Description** is a text field that allows you to enter notes for the safety document.

- **Audit Log** contains the following information:

  - **Table Fields:**

    - **Date**: the date and time of each entry.

    - **Description:** a description of the state change or asset operation.

    - **Asset:** the asset associated with the step.

    - **User:** the name of the user who recorded the action.

    - **Crews**: the crew identifiers pertaining to the audit log entry.

  - The **Comment** section of the Audit Log panel allows you to add a comment to the log.

- **Edit Log** tracks the changes made to the entry fields of the document. It contains the following information:

  - **Date:** the date and time of each entry.

  - **User:** the name of the user who recorded the action.

  - **State:** the state of the safety document when the entry was added.

  - **Field:** The name of the field that was updated.

  - **Previous Value:** The previous value of the field before the update.

Creating a Safety Document from a Switching Sheet

Assets may be added automatically to a Safety Document by creating a safety document from step selections within the Steps list of the originating switching sheet. You may create a safety document in two ways:

1. **Create a Safety Document for a Selected Step:**

   - On the Steps tab, select the steps to which you want the safety document associated. For instance, select Hold Tag steps to create a Hold safety documents. These steps then define the isolation for the safety document.

   - Click the **Create Safety Document for Selected Step** toolbar button (🖥).

     - If the selected step maps to multiple types of safety documents, the Select Safety Type dialog prompts you to select the document type.

     - Select the safety document type and click **OK**.

       Your selected step must conform or map to at least one safety document type. For example, if you select Place Hold steps an error will be displayed. To correct the issue, you will need to refine your step selections.

2. **Create a Safety Document Without Selecting a Step:**

   - To create a safety document without selecting a step, click the **Create Safety Document** (🟥) button, which provides an options menu allowing you to select a specific safety document type or open the Select Safety Document Type dialog.

- If you select a safety document type, the new safety document will be created. If you select **Select Safety Type Dialog...**, the Select Safety Type dialog will open allowing you to choose the document type. Select the safety document type, and click **OK**.

For a list of step types to safety document types, see **Mapping Step Types to Safety Document Types** on page 3-76. The steps in the sheet will also be updated with an additional entry in the Operation text indicating which safety document the step is associated to.

Assigning Crews to a Safety Document

The Select Safety Crew dialog allows you to assign crews to the safety document. You may also create contractor crews from the dialog's **Contractors** tab. By default, the dialog will open showing the crews listed on the parent switching sheet's Crews list. The Switching Sheet Crews tab will only be visible for safety documents associated to switching sheets.

Populating Crews from the Switching Sheet

Crews are automatically assigned to safety documents when the safety document is created from a switching sheet where the switching sheet has crews listed in the **Crews** list. If a subset of the switching sheet's crews should be used to populate the safety document's Crews list, then simply select the crews prior to creating the safety document from the switching sheet.

1. Add a list of crews to the switching sheet's **Crews** list.

2. Click the switching sheet's **Create Safety Document** button and select the desired safety document type.

   The safety document will be created with a list of assigned crews matching the crews listed in the parent switching sheet. If **none** or **all** of the crews were highlighted in the switching sheet, then all of these crews will be assigned to the safety document. If a subset of the crews were highlighted in the switching sheet, then only those crews will be assigned to the safety document when it is created.

Selecting Crews from the System Crews List

To assign a standard (system) crew to the safety document:

1. Click the **Select Crew...** button (⬛) to open the Select Safety Crew dialog

2. On the **System Crews** tab, select one or more crew rows in the table.

   Note: you may **Shift+Click** to select multiple adjacent rows or **Control+Click** to select non-adjacent rows.

3. Click **OK** to assign the crews and close the dialog.

   Note: click **Apply** to assign the selected crews without closing the dialog. Crews will appear in the "Unknown" position.

Creating and Assigning Contractor Crews from the Contractor Entry Form

You may add a new contractor crew using the Contractor Entry Form. The created crews are assigned to the current safety document and added to the Contractor Crew List from which they may be assigned to other safety documents or switching sheets.

The form contains the following fields:

- Crew ID: the crew name or identifier.

- Contact: the name of the crew contact person.

- Mobile #: the crew's mobile number.

- Pager #: the crew's pager number.

- Type: crew option menu that allows you to choose the crew type.

- Comments: text field for comments.

Actions

- **Create and Assign Crew** ()**:** assigns the new crew entry to the safety document and adds them to the contractor crew list.

    Note: the Select Safety Crew dialog closes once the add button () is clicked.

- **Clear Crew Fields** ()**:** clears the entry form.

Using the Contractor Crew List

The Contractor Crew List allows you to assign existing contractor crews to the safety document or populate the Contractor Entry Form to reuse crew data when creating additional contractor crews.

The form contains the following toolbar buttons:

- **Refresh Crew List** ()**:** refreshes the contractor crew list with the full list of active contractors found in the database.

- **Assign Crew** ()**:** assigns crews to the safety document.

- **Transfer Crew Data** ()**:** transfers the selected crew's data up to the Contractor Entry Form fields. This allows contractors to be copied with minimal effort.

- **Obsolete Crew** ()**:** obsoletes a crew so that it no longer shows up in the Contractor Crew List. If the crew is still part of an active safety document or switching sheet, an error will be generated. The crew is not deleted from the system as it is still needed for auditing purposes in completed switching sheets and safety documents.

Assigning an Existing Contractor Crew

1. Select the crew rows in the Contractor Crew List.

2. Click the **Assign Crew** button () to assign the crews to the sheet.

Assigning a New Contractor Crew Using Existing Crew Data

To create an additional contractor crew using data from an existing crew, do the following

1. In the Contractor Crew List, select the row with the desired crew data.

2. Click the **Transfer Crew Data** button () to copy the data to the Contractor Entry Form.

3. Edit the data for the new crew.

4. Click the **Create and Assign Crew** button () to assign the new crew to the safety document and add them to the Contractor Crew List.

Adding a Safety State Transition Step

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. From a switching, create a new safety document. See **Creating a Safety Document from a Switching Sheet** on page 3-80 for more information.

2. Validate that step recording is still turned on in the Steps tab.

3. Click the **Issue** button () on the safety document. 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.

Notes:

Conditions associated to the assets in the Tag Points have to be on the assets for the document to be issued. If the conditions are not on the assets, an error dialog will be displayed with the list of conditions that could not be found. The switching steps associated to those conditions will be highlighted in the switching sheet. This is mode specific, so when in study mode, the conditions have to be on the assets in your study session. Conditions are not required when only the Other Assets field is filled out.

When recording the safety state transition steps in Real-Time, the safety document must have an assigned crew before it can be issued. This is not a requirement when in Study mode.

4. 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.

5. Close the safety document.

   Note: If you changed the Other Assets or 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 3-85.

Safety State Transition Failed Dialog Box

When a safety document is issued the conditions (tags) associated with it are locked. If some of the expected conditions are missing or fail to lock, the Safety Transition Failed dialog box is displayed. The Failed Safety Actions table contains the list of switching steps associated with the safety document, that caused the failure.

The switching steps placing those conditions will be highlighted on the Steps tab. Affected rows in the Tag Points in the safety document will also be highlighted.

Editing the Asset List

The **Tag Points** asset lists on the Hold, Clearance, Delegated Control, Information, and Warning safety documents may only be altered when in the *New* or *Unissued* states.

Adding Assets to a Non-Execute Safety Document

You can add additional assets to a safety document through one of three ways. The first method involves associated steps with assets to the safety document. The second method allows the users to added assets directly to the safety document through asset selections on the viewer. The third method gives the user an Add Asset dialog, from which they can hand enter or search for an asset to be added to the list.

Step Association Method

The step association method is accomplished 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.)

   From the associated switching sheet steps list, select the step with the asset operation you want added to the safety document. For example, if you select an Add or Remove Tag step, the asset is added to the Tag Points list on the safety document dialog.

2. Click the **Link Switching Step Asset** button (🔗) on the safety document dialog. The new asset is added to the appropriate asset list.

   Notes:

- 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.

- If the select step type is not configured for the safety document type, then an error will be displayed indicating the step that does not conform to the configured step to safety document type rules. For a list of step types to safety document types, see **Mapping Step Types to Safety Document Types** on page 3-76.

Asset Recording Method

The asset recording method from viewer asset selections is accomplished 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.)

Click the **Record Off** button (◉) found on the Tag Points toolbar to turn recording on for that asset list.

2. From the viewer, select assets that should be added to the Tag Points asset list.

Safety Document Add Asset Dialog Method

Using the Safety Document Add Asset dialog, assets can be added to the Tag Points list 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.)

2. Click the **Add Asset…** button (🗒) found on the Tag Points toolbar. The Safety Document Add Asset dialog is displayed.

3. From the dialog, enter part or all of an asset alias. The search button (🔍) can be used to find an asset from a partial asset id.
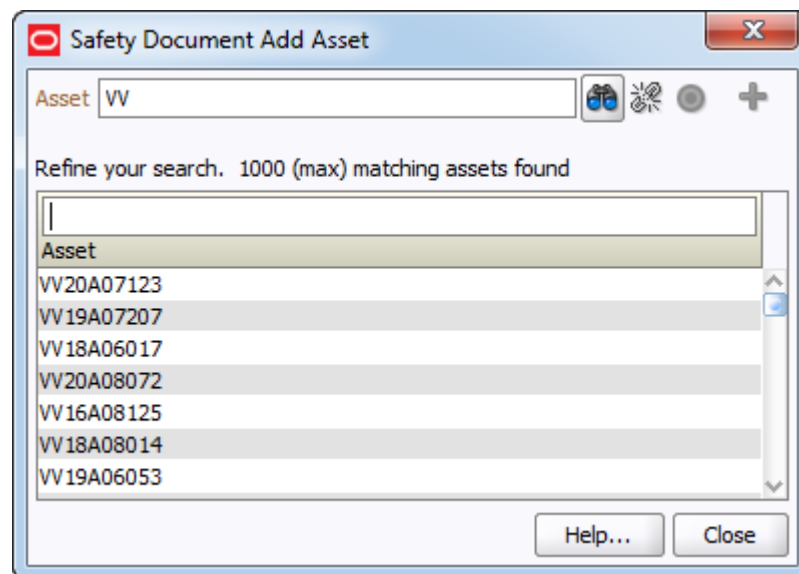
4. Click **Add Asset** (➕). The asset will be added to the Tag Points list.

5. Continue to add assets using steps 3-5 and when completed, click **Close**.

Removing Assets

You can remove assets from an asset 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 asset you would like to remove from the Tag Points.

3. Click the **Remove Asset** button (❌) from the appropriate asset list toolbar. The asset is removed from the list if the document is in the New state or is marked for removal if the document is in the Unissued state

Option 2:

1. From the associated switching sheet steps list, select the step with the asset operation that you want removed from the safety document. For instance, if you select an Add or Remove tag step, the asset will be removed from the Tag Points list.

2. Click the **Unlink From a Safety Document** button (🦥) on the Steps tab toolbar. The asset is removed from the safety document's asset list if the document is in the New state or is marked for removal if the document is in the Unissued state.

> **Note:** The **Unlink From a Safety Document** button can only be used for assets in the safety document that are associated to steps. Assets added without step associations will have to be removed using Option 1 described above.

Adding a Comment to the Audit Log

The Comment section of the Audit Log panel allows you to add a comment to the log. Click in the Comment field and enter a comment; click ➕ to add the comment to the Audit Log.

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, Clearance, etc.) on the asset. The symbol on the asset indicates that a condition exists on the asset, 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 asset changes to indicate that the tag is under the control of the safety document. For example, if configured in your project, 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 asset prior to the safety document being issued. For example, to issue a Hold document, you must place a Hold tag on the asset before the safety document can be issued. This only pertains to assets associated to switching steps. Assets not associated to steps will automatically have conditions placed on the them when the document is issued.

When a safety document is transitioned from the Unissued state to the Issued state, all of the pending asset list changes will be applied. If the transition is initiated in real-time mode, then any assets marked for removal will be removed from the list and related audit log entries will be created for each asset change.

Once a safety document is issued:

- Crews are transitioned to the "Issued" position.

- You cannot complete, delete, or reissue the safety document. The asset lists cannot be altered while in the Issued state.

- The only state related button options available on the safety document dialog are Unissue and Release.

- The Viewer displays a symbol on all assets 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 assets 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 click 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. Click the **Execute** button. A symbol appears on all assets 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.

If any of the assets in the Tag Points list were not associated to switching steps, then conditions will be applied to the assets first. After all the conditions are on the assets, then the conditions will be changed to indicate that they are under the control of the safety document.

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 asset in the Viewer and the original tag symbols are placed back

onto the asset. At this point the Safety Document can either be reissued to a different crew or completed.

> **Note:** Safety Documents cannot be released if any crews are still in the "Issued" position. Crews need to be "Clear" to proceed.

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 asset in the Viewer and the original tag symbols are placed back onto the asset.

   > **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 assets in the Viewer and the original tag symbols are placed back onto the assets. The safety state transition step is also marked as Completed.

Deleting a Safety Document

Safety documents can be marked as *Deleted* from the associated switching sheets Safety Documents tab. Safety documents can only transition to the Deleted state when they do not have safety state transition steps linked to them in the switching sheet's Steps list. Attempting to mark a safety document as Deleted with linked safety state transition steps will result in an error dialog. You will need to delete the safety state transition steps before the safety document can be marked as Deleted.

To mark a safety document as Deleted:

1. Navigate to the associated switching sheets **Safety Documents** tab.

2. From the safety documents list, select the document entry and click the **Delete** button. The document will be marked as Deleted. Safety documents can only be marked as Deleted when in the New state.

Delegating Control of a Network Area
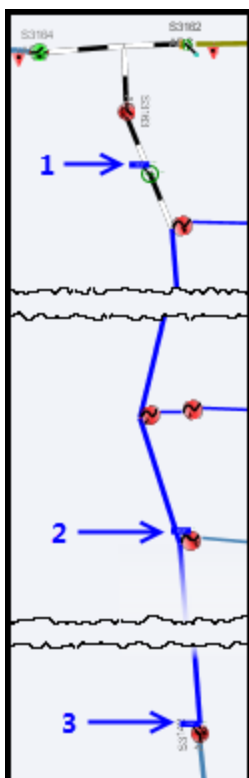
When you issue a DCZ Safety document, the system delegates the segment of the network bounded by the listed assets.

DCZ 1002

Tag Points

Record Off

	Device
1	OH3P-2273963-482758-2273775-483212
2	F1202
3	S3142
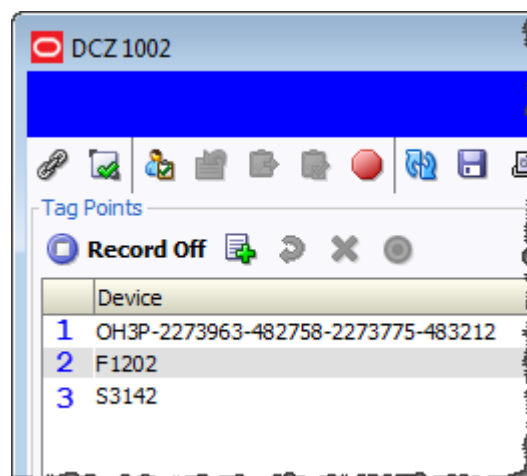
All the conductors in the delegated area recolor to the *Delegated* color, which can be seen in the Viewer Legend.

No operations are allowed on any assets in the segment until the document is released.

DCZ 1002

Tag Points

Record Off

Device
OH3P-2273963-482758-2273775-483212
F1202
S3142

DCZ*   ABC

ABC

Legend

Feeder

State	Color
Phase AB	
Faulted	
Delegated	
Isolated	
Abnormally Radial	
Secured	
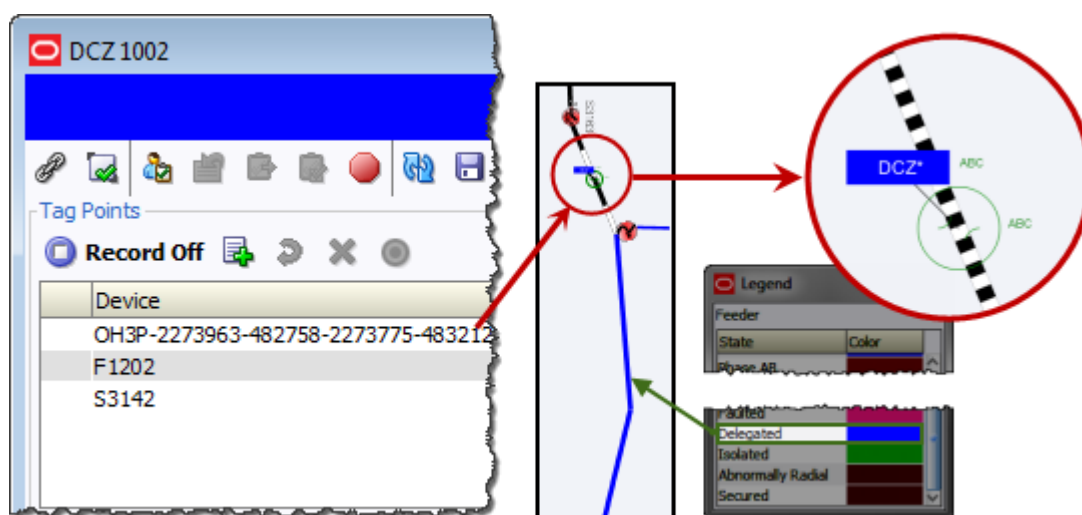
Safety Document List

The Safety Document List is a tool used to manage active safety documents and any safety documents associated to switching sheets that have been completed in the last 30 days. To load safety documents no longer available in the Safety Document List, use the Search Safety Document window. The Safety Document List is not dynamically updated once it is displayed. If you keep the window pinned and visible, then the Refresh button will need to be selected to update the list. If the list is closed and remapped, then the list will be automatically refreshed with the latest data.

The Safety Document List serves as the primary mechanism from which to load safety documents outside or not associated to switching sheets. You can either double click on a single entry or highlight multiple entries and click on the **Open...** toolbar option. A right-click **Open...** menu option is also available. When loading multiple safety documents, a progress bar will be displayed at the bottom of the window. Once an open request has been initiated, it cannot be cancelled, but the system does restrict you from having more than 15 switching sheets open at any one time. Each safety document is linked to a switching sheet.

Menu and Toolbar Features

This section lists and describes the menu options and toolbar icons available in the Safety Document List.

File Menu

The table below describes the options available on the File menu.

Menu Option	Description	Toobar Icon
Export Table...	Opens a dialog to allow you to save the current table view data to a comma separated value (csv) file.	🔼
Print	Displays the Print Preview dialog so you can view or print the list.	🖨
Exit	Closes the Safety Document List window.	--

Sort Menu

The table below describes the options available on the Sort menu.

Menu Option	Description	Toobar Icon
Sort Dialog...	Opens the Sort dialog, allowing you to create, modify, apply, and save user-defined sorts. See **Using the Sort Dialog Box** on page 1-12.	--
Doc #	Applies the default sort, which is the doc # in descending order.	--

Filter Menu

The table below describes the options available on the Filter menu.

Menu Option	Description	Toobar Icon
Filter Dialog...	Opens the Filter dialog where you can create, modify, apply, and save user-defined filters. See **Filtering** on page 1-13.	--
Active	Displays all the active safety documents (safety documents in the Status Issued, Unissued, and Released).	--
All	Displays all safety documents and safety documents associated to completed switching sheets from the last 30 days.	--
Completed	Displays safety documents that are in the Completed state that are not associated to a switching sheet that has been completed longer than 30 days.	
Issued	Displays all safety documents in the Issued state.	--
New	Displays all safety documents in the New state.	

Actions Menu

The table below describes the options available on the Actions menu.

Menu Option	Description	Toolbar Icon
Open...	Opens the selected safety documents and their associated switching sheets. If the window is not pinned or docked, the window will be closed once the safety documents are loaded. **Note:** If the safety is locked by another user, the Failed to Establish User Lock dialog box will be displayed; see **Opening Locked Documents** on page 3-72 for information.	📂
Refresh	Refresh the safety document list with the latest data from the database.	🔄
Pin	Pin the window so that it will not close after an open safety document request. **Note:** The icon shows the current state (*i.e.*, unpinned).	📌
Unpin	Unpin the window so that it will close after an open safety document request. **Note:** The icon shows the current state (*i.e.*, pinned).	📌
Dock	Dock the window into the NMS environment window. The tool will be docked next to the Work Agenda list.	--
Undock	Undock the window out from within the NMS environment window.	--

Help Menu - The table below describes the options available on the Help menu.

Menu Option	Description	Toobar Icon
Safety Document List Help (F1)	Opens the online help system to the Switching Sheet List help content.	--

Safety Document List Data Fields

The Safety Document List provides a tabular view of the safety document. The sort and filter criteria are displayed above the table.

- The **Status** column displays the status of the safety document.

- The **Type** column displays the safety document type.

- The **Doc #** column displays the safety document number.

- The **Sheet #** column displays the switching sheet the document is associated to.

- The **Pressure Zones** column displays pressure zone values as displayed on the safety document.

- The **Issued Date** column displays the date the document was last issued.

- The **Crews** column displays the crews the document was issued to.

- The **Description** is the description of the safety document as entered on the document.

- The **Released Date** displays the date the document was last released.

- The **Completed Date** displays the date the document was completed.

Opening Existing Safety Documents

Note: If the sheet is locked by another user, the Failed to Establish User Lock dialog box will be displayed; see **Opening Locked Documents** on page 3-72 for information.

To open an existing safety document, complete these steps:

From the Web Workspace File menu:

1. Select **Open** and then **Safety Documents…** The Safety Documents List appears.

2. 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 is opened. If the safety document is associated with a switching sheet, the switching sheet will also open.

From the Web Workspace Search Safety Document Dialog

To search for an existing safety document:

1. From the Web Workspace **File** menu, select **Safety Document Search...** from the **Open** option.

2. In the Search Safety Document dialog, enter the desired text to search and press **Enter** or click the **Search** ( ) button.

Open a Safety Document from an Open Switching Sheet

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.

Open a Safety Document from a Switching Step on the Steps Tab

1. Right-click on one or more steps that have safety document associations, then select **Load Safety Documents…** from the options menu. The safety document dialogs are displayed.

   Note: Steps with associated safety documents display the document type and number displayed in the Operation step column.

Open a Safety Document from the Control Tool

1. For active safety documents, double-click on an asset within the Viewer window.

2. From the Control Tool, click the **Safety Documents…** button and then click **Open Safety Documents...** from the sub-menu.

   • If only one safety document is currently active on this asset, then the safety document dialog is displayed.

   • If multiple safety documents are active, the Asset to Safety Document List displays a list of safety documents for the asset. The list includes only safety documents that are part of an active sheet and documents that were completed in the last 30 days. 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, use either of the following methods:

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.

   Any assets in the Tag Points list, that were not associated to steps, will have their conditions removed.

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.

Aborting Safety Documents

If a switching sheet is aborted, you will need to abort any associated safety documents before you can complete the switching sheet.

> **Note**: The Abort option is only available in real-time mode when the safety document is in the New state.

To abort a safety document, follow these steps:

1. Click the Safety Documents tab.

2. Double-click the safety document you want to abort.

3. Click the **Abort** button on the toolbar.

4. When prompted, confirm you action.

Switching Sheet Associations

Safety documents can be associated to different switching sheets and even disassociated and converted into a stand alone safety document. Safety documents can only be associated to different sheets or disassociated if the safety document does not have any switching sheet step links. An error will be issued to you if you attempt to disassociate or move a safety document that has linked switching sheet steps. A safety document's type and number will be displayed in the step's Operation column if a link exists.

When disassociating a safety document from a switching sheet, a confirmation dialog will be displayed to you. You must confirm the operation before the disassociation will proceed. When the document is disassociated, it will be converted into a stand alone safety document. The audit log of the switching sheet and the safety document will indicate when and who initiated the operation.

Safety document associations originate from the Switching Sheet Association dialog. This dialog allows you to select a sheet from a list of switching sheets you already have loaded or you can search for a particular switching sheet in the system. Completed switching sheets and switching sheets that cannot accept safety document associations will be filtered out of the list. Safety document association changes will result in audit log entries in the original switching sheet along with the target switching sheet and the safety document.

Outage Correction

Web Switching Management can be used 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. Even though the scenario is recorded in study mode, the corrections will be made to the real-time outage. Study mode is used so that the model can be altered to resemble the real conditions when the outage was created. In order to use Outage Correction, you will need to have access to an available study session.

Re-Recording the Outage Restoration Sequence in Study Mode

To re-record the correct outage restoration sequence, follow these steps:

1. In your study mode viewer, manipulate the model to represent what the conditions were when the outage was created. This will be used as your template to record a new scenario into the Outage Correction sheet.

2. From the Event Details for a completed event, click the **Switching…** button. The Open Or Create New Switch Sheet dialog is displayed. Select the **Outage Correction** sheet type and then click the **Create** button. An Outage Correction switching sheet is created for the event.

3. In the Outage Correction switching sheet, turn recording on.

4. 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.

5. Manipulate the model back to the baseline, as in step 1. This is important because the algorithm plays the steps against the current study network to determine the customers affected. Use the Impacted Customers tab to verify that the correct number of customers will be impacted by the new set of steps.

6. Click the **Correct Outage** button on the Steps tab toolbar. A confirmation dialog appears.

7. 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 asset. The Event Details, when re-loaded, will reflect any partial restoration changes as well.

   Note: if you are replacing an outage that was involved in a partial restoration scenario, you will need to either update the other related outages or mark them so that they are not reported and calculated in your indices.

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 steps performed in real-time that are not being recorded in a switching sheet. You can use the miscellaneous log rather than creating emergency switching sheets.

This section includes the following topics:

- **Displaying the Miscellaneous Log**

- **Filtering the Log**

- **Editing the Miscellaneous Log Steps**

Displaying the Miscellaneous Log

To view the Miscellaneous Log, select **Miscellaneous Log...** from the **Tools** menu. The Miscellaneous Log displays the same columns as a switching sheet Steps tab (except for the Version column, which will not appear). See **Steps Tab** on page 3-20 for column descriptions.

The following fields and buttons are displayed at the top of the Miscellaneous Log tab.

- The **From** date picker, **Range** drop-down, and the **All Users** checkbox set the log's filter criteria. Note that the **From** date picker only includes dates, but not specific times.

- The **Fetch** button (🔄) is used to get records from the database.

- 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 **Uninstruct** button (👤) swill remove the instruct condition from the asset and delete the instructed step that was recorded into the Miscellaneous Log.

- The **Focus** button (◎) focuses the Viewer on the selected asset.

- The **Cut** button (✂) allows you cut one or more steps from the miscellaneous log. You can then paste the steps into another switching sheet.

- The **Print Preview** button (🖨) allows you to generate and view the Miscellaneous Log report based on any applied filters. The output will include the date range for the steps included in the log, the user, and finally the list of steps. You will be prompted to select a report format (PDF, HTML, RTF, or XML); click **OK** to generate the file, which will open in an application that is associated with that file type (e.g., Adobe Reader for PDFs or your default web browser for HTML). You may save the generated file.

    Note: the filters will be refreshed when the report is generated so they will always contain current data regardless of what steps are displayed at the time the button was clicked.

- The **Print** button ( ) allows you to print the Miscellaneous Log report based on any applied filters (see **Note** for **Print Preview**, above). You will be prompted to select a report format (PDF, HTML, RTF, or XML); click **OK**. You will then be prompted to select a printer.

- The **Email** button ( ) allows you to email the Miscellaneous Log report based on any applied filters (see **Note** for **Print Preview**, above). You will be prompted to select a report format (PDF, HTML, RTF, or XML); click **OK** to generate the file, which will be attached to a new message launched from your default email application.

- The **Help** button ( ) displays help for the Miscellaneous Log tab.

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 **From** 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 **All Users** is checked, the log shows steps that were executed by all users; when unchecked, the log shows only steps that were executed by you.

4. Use the fields at the top of the tab to filter the log.

5. Click the **Fetch** button to refresh the list based on your entries.

Editing the Miscellaneous Log Steps

The **Comments** step column is the only column in the Miscellaneous Log that can be edited. The edits are automatically submitted to the database when cell focus is lost. Cell focus occurs when you press **Enter** or when you tab out of the field. The cell edit will also be submitted to the database if you navigate to another tab within the Oracle Utilities Network Management System environment. Step field edits within the Miscellaneous Log cannot be undone. If you wish to cancel what you are doing in the Comments field, then select the Escape (Esc) button.

Viewing Global Overlaps

The Global Overlaps list allows you to identify overlaps of date/time, control zone and affected assets within a specific time period for all active switching sheets.

To display the Global Overlaps list, choose **Switching Overlaps...** from the **Tools** 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 3-54 for more information.

Click the Help button ( ) to display help for the Global Overlaps tab.

Web Safety

Web Safety provides *Stand Alone Safety Documents* for recording tagging operations outside of a switching plan. **Web Safety** is not a substitute for safety documents created in switching plans and, therefore, does not support the use of aggregate actions when recording tag points. **Web Safety** limits asset associations to those not involved in *Open* and *Close* operations.

Understanding the Stand Alone Safety Document Window

Stand Alone Safety Documents windows share many features and behaviors of switching sheet windows. Like switching sheets, Stand Alone Safety Documents cannot be moved outside of the confines of the NMS workspace. Stand Alone Switching Document windows open in the lower right quadrant of the workspace, but may be moved anywhere within the workspace or maximized to the full workspace dimensions.

Each open safety document has its own tabbed window, which is labeled with a combination of the safety document type and the number. Multiple safety documents and switching sheets are typically docked together and displayed as a tab group. Double-click any tab (or the empty area to the right of the tabs) to maximize the tab group; double-click again to restore the size.

Right-click a tab to access the options menu, which provides the following:

> **Note:** for simplicity the term *sheet* will be used to mean either a stand alone safety document or switching sheet.

- **Maximize:** maximizes the window.

- **Restore:** restores the maximized window to its original size and position.

- **New Tab Group:** displays the sheet separately.

- **Collapse Tab Groups:** regroups separate windows into tab groups.

- **Windows...:** opens a dialog that lists all open sheets, which you can then:

  - Activate (*i.e.*, bring to front in a tab group) a single sheet.

  - Close selected sheets.

- **Close** (**Ctrl+F4**)**:** closes the sheet.

- **Close All** (**Ctrl+Shift+F4**)**:** closes all open sheets.

- **Close Others:** closes all open sheets except the sheet that was right-clicked.

Menu and Toolbar Features

File Menu

The table below describes the options available on the File menu.

Menu Option	Description	Toobar Icon
Save (Ctrl+S)	Saves the Safety Document.	🖫
Copy As...	Opens the Safety Document Types dialog that allows you to create a new safety document with the current document's data.	--

Menu Option	Description	Toobar Icon
Associate...	Display the Switching Sheet Association dialog. From the dialog you can associate the safety document to a switching sheet. See **Switching Sheet Associations** on page 3-93 for more details. Once the safety document is associated, it is no longer a stand alone safety document and when viewed the document takes on the look of a switching sheet associated safety document.	
Delete	Transition the document to the Deleted state and remove it from any of the safety document lists. This option is only available while the document is in the New state.	--
Print Preview... (**Ctrl+Shift+P**)	Opens the Switching Report Format dialog that allows you to choose the criteria for previewing a safety document report.	
Print (**Ctrl+P**)	Opens the Switching Report Format dialog that allows you to choose the criteria for printing a safety document report.	
Email...	Opens the Switching Report Format dialog that allows you to choose the criteria for emailing a safety document report.	
Exit	Closes the active safety document.	--

Help Menu.

Option	Description	Toolbar Button
Web Safety Help (**F1**)	Opens online help content for safety documents.	--
About Web Safety	Opens a window with environment and software information.	--

Toolbar Buttons

- The ⬤ Recording On / ◯ Recording Off buttons show you the current status of recording and allows you to toggle Control Tool related recording off or on, respectively.

- The **Paste** button (📋) allows you to add a step cut from the Miscellaneous Log or copied from another Safety document. See **Adding Assets to a Non-Execute Safety Document** on page 3-83 for more information.

- The **Place Condition** button (▶) is used to apply conditions when the condition actions were recorded in study mode through the Control Tool.

- The **Issue** button (🔷) issues the selected safety document. A record of the transition is added to the Audit Log. Selecting this button will cause the **Unissue** and **Release** buttons to be enabled.

- The **Unissue** button (📋) is used to place an Issued safety document or a Released safety document into an Unissued (edit) state where the asset lists can be altered. While in the

Unissued state, you can add assets to the lists and mark assets already in the list for removal. Only when the safety document transitions back to the Issued state will the changes be applied. Selecting this button will cause the **Issue** button to be enabled.

- The **Release** button (📤) releases the selected safety document. This button is only enabled if the safety document has been issued. Selecting this button will cause the **Issue** and **Complete** button to be enabled.

- The **Complete** button (📋) completes the selected safety document.

- The **Abort** button (🔴) allows you to set the status of the safety document to Aborted. The system prompts you to confirm the action before aborting. This button is only available in real-time mode and only for safety documents that are in the New state.

- The **Confirm Model Changes** button (✔) becomes available when model changes have occurred that impact one or more assets in the safety document.

  The Web Switching service checks all the active safety documents after a model edit has occurred. If a safety document has an asset that matches an asset that was directly impacted by a model change, that asset will be marked as needing verification. When the safety document is displayed, these assets will be highlighted in yellow. You can either check off each asset in the document as they are verified or check off the entire document.

  While the safety document has verifications pending, safety state transitions cannot be performed within the document.

  Individual Verification

  To check off each asset individually, right-click the highlighted step and select **Model Verify**.

  Whole Safety Document Verification

  To check off all of the assets in a sheet, click ✔ to confirm all model changes. All highlighted assets will be marked as verified.

  Once the assets have been verified, safety state transitions can continue for the document.

- The **Reset Study Session** (🔧) allows you reset your study session to a copy of either Real Time or Nominal conditions.

- The **Real Time** button (🔻) switches the document to real time mode.

- The S**tudy Session** button (🔧) switches the document to study mode.

- The **Step Actions** button (📋) toggles the actions view at the bottom of the safety document. The actions are identical to switching steps found in switching sheets. The actions list includes the tag and safety state transition actions associated to the document.

Safety Document Fields

The Stand Alone Safety Document dialog displays the following fields:

- **Tag Points** display the assets that the safety document is associated with.

    - **Table Columns**

        - **Edit State:** an iconic representation of the edited state of the asset in the Unissued state. The edits will be applied when the document is issued. When working in Study mode, the edit state indicators will remain visible until the document is issued in real time.

            - ✖ **:** The asset has been marked for removal.

            - ➕ **:** The asset has been added to the asset list and will be used as a boundary point the next time the document is issued.

        - **Asset:** the asset used to define the area or point of coverage of the safety document.

    - **Toolbar Buttons**

        - 🔴 **Recording On**/⚪ **Recording Off**: Toggles recording of assets off or on. The Tag Points list allows users to record assets via selections from the viewer. To enable this feature, simply turn on recording and select assets in the viewer.

        - The **Add Asset...** button (⊞) allows you to manually add an asset to the list.

        - The **Undo Asset Edit** button (↺) allows you to undo an addition or removal of an asset from the list. This option is only available when making asset modifications in the Unissued state.

        - The **Remove Asset** button (✖) allows you to remove a selected asset from the Tag Points asset list.

        - The **Object Focus** button (◎) focuses the Viewer 1 window on the selected asset.

        - .

- **Other Assets** is a text field that allows you to enter a list of non-modeled assets.

    Note: An entry is required in at least one of these fields: **Tag Points** or **Other Assets**.

- **Pressure Zones** field allows you to enter pressure zone values. The following button is displayed to the right of the Pressure Zones field:

    - The **Update** button (🔄) is used to populate the Pressure Zones field with the list of pressure zones associated with assets listed on the safety document.

- **Asset** displays the asset being worked on (not necessarily the asset being switched). This asset is also used to identify what control zone the document is found in. If you do not have authority over the zone the document is associated to the document will not show up in the Open Safety Document list. The following buttons are displayed to the right of the Asset field:

    - The **Asset Lookup** button (🔍) is used to search for and select an asset.

    - The **Link Asset** button (🔗) to link an asset selected from the Viewer to this switching sheet. First, click on the asset in the Viewer, then click this button. The Asset field is populated with the selected asset's name.

    - The **Unlink Asset** button (⚙) clear a linked asset from the asset field.

- The **Object Focus** button (🔴) focuses the Viewer 1 window on the selected asset.

- **Assigned Crews** displays a table list of the Crew IDs of the crews that the safety document has been issued to, as well as each crew's mobile number, pager number, and crew type. A crew is required in this list before the document can be issued.

    - To select a crew to assign to this safety document, click the **Select Crew...** (🗇) button to open the Select Safety Crew dialog. See **Assigning Crews to a Safety Document** on page 3-81.

    - To change a crews position, click the **Crew Issued/Clear** (🗇) button and select either **Issued** or **Clear** from the options menu.

    - To delete crews from this list, click the crews and then click the **Clear Crew**s button (❌). When the document is in the Issued state, all but the last crew can be cleared from the list. At least one crew must remain assigned while the document is in the Issued state.

- **Description** is a text field that allows you to enter notes for the safety document.

- **Audit Log** contains the following information:

    - **Table Fields:**

        - **Date**: the date and time of each entry.

        - **Description:** a description of the state change or asset operation.

        - **Asset:** the asset associated with the step.

        - **User:** the name of the user who recorded the action.

        - **Crews**: the crew identifiers pertaining to the audit log entry.

    - The **Comment** section of the Audit Log panel allows you to add a comment to the log.

- The **Edit Log** tracks the changes made to the entry fields of the document. It contains the following information:

    - **Date:** the date and time of each entry.

    - **User:** the name of the user who recorded the action.

    - **State:** the state of the safety document when the entry was added.

    - **Field:** The name of the field that was updated.

    - **Previous Value:** The previous value of the field before the update.

- The **Steps** section contains all of the step actions associated with the safety document.

Creating New Stand Alone Safety Documents

From the Web Workspace

To create a new Stand Alone Safety Document from the Web Workspace, from the **File** menu, select **New**, and then select **Safety Document...** The *New Safety Document* window will open.

> **Note:** you may click the toolbar button (🔶) rather than the File menu.

From the New Safety Document window, you may create a safety document based on a blank template or from a pre-existing safety document.

Create a New Blank Safety Document

To create a blank safety document from the New Safety Document dialog, do the following:

1. Select a safety document type from the Safety Document Type list.

2. Click **Create**; the new safety document will open.

    Note: you may create a blank safety document from the Control Tool's **Safety Documents...** button. See **Create a New Safety Document from the Control Tool** on page 3-102.

Create a New Safety Document with Existing Safety Document Data

You may want to create a new safety document with data from an existing safety document; for example, creating multiple safety documents types to be used in a multistep switching operation.

1. Select a safety document type from the Safety Document Type table.

2. From the Pre-Created Safety Documents table, select an existing safety document that has the data you need for the new document.

3. Click **Create a Copy**; the new safety document will open and be populated with asset data from the pre-created safety document. The Create a Copy button will only be visible after you have selected a safety document type and a safety document within the pre-created safety document list.

Create a New Safety Document from the Control Tool

To create a new Stand Alone Safety Document from the Control Tool, do the following:

1. Open the Control Tool for the asset to be associated with a new safety document.

2. Click the **Safety Documents...** button and then select the option to create the new safety document type:

    *   Create HOLD Document

    *   Create Clearance Document

    *   Create Information Document

    *   Create Warning Document

    *   Create Delegated Control Document

A new safety document will be created with the Tag Points list automatically populated with the originating asset's id.

Using Stand Alone Safety Documents

Record Tag Operations

1. Create a new stand-alone safety document. The new document will open in Real-Time mode with Control Tool action and viewer asset selection recording on.

2. Turn Tag Points viewer asset selection recording off.

3. Double-click an asset in the Viewer to launch its Control Tool.

4. Click **Tag...** and choose a place tag operation associated to that document type.

    For example, select **Place HOLD Tag** for a HOLD document.

    The asset are displayed in the Tag Points list.

5. Click the **Step Actions** toggle button (🗒) and note that the operations are recorded there as well. This is the source list and this list feeds the Asset list found on the document's main form.

Remove an Asset from a Safety Document

1. Create a stand-alone safety document.

2. Record tagging operations in real-time.

3. Select one of the assets in the Tag Points list and click ✖ to remove the asset.

   Note: the *Remove* option is only available when the document is in the New or Unissued state.

4. Open the Miscellaneous Log and note that it now lists the Place Tag operation step that was removed from the safety document.

Issuing, Releasing, and Completing a Safety Document

1. Create a stand-alone safety document.

2. Record some tagging operations in Real Time.

3. From the document, assign a crew to the document.

4. Issue the document. The conditions on the viewer will change to indicate that they are under the control of a safety document. This is indicated by displaying an asterisk within the viewer symbol. The status of the document is updated in the status bar, which is found at the bottom of the document. An audit log entry is created for the state transition.

5. Release the document. The conditions on the viewer will change to indicate that they are no longer under the control of the safety document. The status of the document is updated in the status bar, which is found at the bottom of the document. An audit log entry is created for the state transition.

6. From the viewer, remove the tagging operations while record is active in the safety document. The actions are recorded in the Audit Log of the safety document.

7. Complete the document. The safety document status is updated and unlocked and placed into View Only mode. All the toolbar options are desensitized except for the Copy As..., Print, Email, Help, Exit, and Focus options.

Loading a Safety Document

1. From the Open Safety Document list, load a safety document not associated to a switching sheet. The document should be loaded into the workspace editor.

Deleting a Safety Document

1. Create a stand-alone safety document.

2. From the document's File menu, select **Delete**. The document will be marked as Deleted and will no longer show up in the Safety Document List. Safety documents can only be deleted when no Real Time tags are associated and listed in the Tag Points.

Copying a Safety Document

1. From the New Safety Document dialog, refresh the pre-created safety document list.

2. Select a pre-created safety document and a target document type.

3. Click **Create a Copy**. A new safety document is created. This new document will have the same list of assets as the original document. The Audit Log of the new document will have one entry describing when the document was created.

Create a Safety Document in Study Mode

1. From the New Safety Document dialog, select a safety document type and click **Create**. The new document is created and by default goes into Real-Time mode.

2. Click ![icon] .

3. Verify that Control Tool action recording is on and Viewer asset selection recording is off.

4. Open the Viewer in Study Mode.

5. Add appropriate tags to assets. As the actions are recorded by the safety document, the assets show up in the Tag Points.

6. Once all of the tags have been applied, issue the safety document and release it to test it in Study mode.

7. Reset the study session from the safety document.

8. Select the Tag Points and place the tag points in the model. This can be done by selecting the asset and clicking the **Place Condition** button (![icon]).

9. Click the **Focus** button (![icon]). The Viewer will display the appropriate conditions on the assets.

10. Issue the safety document. The conditions displayed in the Viewer will change to indicate that they are under the control of a safety document. This is indicated by displaying an asterisk within the Viewer symbol. The status of the document is updated in the status bar, which is found at the bottom of the document.

Associate an Existing Place Tag Action to a Safety Document

1. With no switching sheet or safety document in record mode, find an asset that can have a HOLD condition.

2. Double-click the asset to launch the Control Tool.

3. Select **Place Hold Tag** from the **Tag...** menu's **Hold Tags** sub-menu. A Hold Tag step is recorded into the Miscellaneous Log.

4. Create a HOLD safety document.

5. Load the Miscellaneous Log and refresh the list so that the Place Hold Tag step is displayed.

6. Select the Place Hold Tag step. Click the **Cut Step** button (![icon]) to cut the step.

7. Go back to the newly created Hold Safety document and click the Paste button (![icon]). The asset associated to the Place Hold Tag step is displayed in the safety document's Tag Points list. The safety document can now be issued.

> **Note:** If you attempt to add a step action association that is not valid for the safety document type, an error message will be displayed. For example, you would get an error if you attempted to add a step action for a Place Hold Tag into a Clearance document.

Chapter 4

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 to 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 an import file to be rebuilt.

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.

Using the Model Management Window

The Model Management window displays the following information:

- **Menu and Toolbar Options**
- **Pending Map Section**
- **Patches Section**
- **Menu and Toolbar Options**
- **Status Bar**

Model Management actions include:

- **Displaying Map History**
- **Displaying the Preprocessor Log**
- **Building Maps**
- **Rebuilding a Patch**
- **Displaying the Patch Build Log**
- **Displaying the Patch Build Report**
- **Enabling and Disabling Model Building**

Menu and Toolbar Options

The Model Management menu and toolbar provide access to commonly used functions. Most of the functions in the Actions menu are also available on the toolbar.

File Menu

Menu Option	Description	Toolbar Icon
Print...	Opens the Print Preview dialog, which allows you to print the contents of the Model Management window.	

Actions Menu

Menu Option	Description	Toolbar Icon
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 4-9 for more information.	
Enable Model Build	Enables model building activity that was previously halted.	

Menu Option	Description	Toolbar Icon
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 DDService, 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`	📄

Preferences Menu

Menu Option	Description
Smaller Font (**Ctrl+Minus Sign**)	Decreases the font size in text and icons. Repeat to further decrease the font size.
Bigger Font (**Ctrl+Plus Sign**)	Increases the font size in text and icons. Repeat to further increase the font size.
Reset Font (**Ctrl+0**)	The application will reset the text and icons to use their default font size.

Help Menu

Menu Option	Description
Model Management Help (**F1**)	Launches the online help system and loads the Model Management content.
Email Log Files... (**Ctrl-Shift-M**)	Gathers the environment's log files and attaches them to a new email message using your default email client. The log files can then be sent to your support team or contact for further analysis.

Menu Option	Description
Set Debug... (Ctrl-Shift-D)	Launches the Set Debug dialog allowing you to set debug on or off within your current environment. This is used for debugging and analysis purposes. See **Setting Debug** on page 5-30 for more information.
About Model Management	Opens a window with environment and software information.

Logout Menu

Menu Option	Description
User Logout	Exits Model Management.

Pending Map Section

The **Pending Maps** section lists all maps that need to be built. This section displays the following columns:

- **Order** displays the order that the maps will be built. The value is returned by the *<project>*_maps_to_build.ces script.

- **Map Name** displays the name of the model map.

- The **Pending Actions** column displays one of the following:

  - **To be preprocessed**: The *.mp files have not been preprocessed into *.mb files, which is necessary before they can be built into the model.

  - **To be committed**: The *.mp 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 4-9 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 4-9 for details on correcting this problem

  - **In progress**: The pending action is currently in progress.

Pending Map Actions

With a map selected in the Pending Maps section, right-click to view the options menu. The options, listed below, are dependent on the state of the file selected.

- **Map History...** - see **Displaying Map History** on page 4-8 for information.

- **Preprocessor Log...** - see **Displaying the Preprocessor Log** on page 4-8 for information.

- **Delete...** - allows you to delete processed files that need to be rebuilt or that you do not want to commit to the model. Only *.mb or *.mbd files may be deleted; if you attempt

to delete an *.mp file, you will receive an error notifying you that you cannot delete preprocessor files.

- **Build Maps** - see **Building Maps** on page 4-8 for information.

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 Names** displays the name of the model maps.

- **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 4-9 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 4-9 for details on correcting this problem.

    - **In Progress** - The patch is currently being processed by the Model Builder. The map files are either being parsed, being applied, or being committed to the database.

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, click the **Halt Model Build** button (![halt]).

    - **Halted** - Model building has been halted. To re-enable, click the **Enable Model Build** button (![enable]).

    - **In Progress** - A model build is currently in progress.

Model Management Actions

You can perform the following actions from the Model Management window:

- **Displaying Map History**
- **Displaying the Preprocessor Log**
- **Building Maps**
- **Rebuilding a Patch**
- **Displaying the Patch Build Log**
- **Displaying the Patch Build Report**
- **Enabling and Disabling Model Building**

Displaying 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 options 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 options 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.

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 Maps** 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 Halt Model Build button ( ).

To resume model building, select **Enable Model Build** from the **Actions** menu or click the **Enable Model Build** button ( ).

Chapter 5

Configuration Assistant

Oracle Utilities Network Management System 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 Common Configuration Assistant Features**
- **Using the User Administration Tab**
- **Using the Mobile User Administration Tab**
- **Using the Event Management Rules Tab**
- **Using the Event Details Options Tab**
- **Using the Work Agenda Predefined Filters Tab**
- **Using the State Transitions Tab**
- **Using the Default Restoration Times Tab**
- **Using the Customer Administration Tab**

Getting Started with the Configuration Assistant

This section includes the following topics:

- **Accessing Configuration Assistant**
- **Logging In**
- **Using Common Configuration Assistant Features**

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 plug-

in. 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 log in 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.

Using Common Configuration Assistant Features

This section describes the common options available from the Configuration Assistant.

Configuration Assistant Menus and Toolbar

This section describes the menu and toolbar options available with the Configuration Assistant.

File Menu.

Menu Option	Description	Toolbar Icon
Export Configuration ...	Generates SQL statements for the current state of the configuration associated with every tab on the application. Once generated, the SQL statements are displayed in a window with options to save or print the information.	
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. See **Printing** on page 1-16 for details on using Print Preview.	

Actions Menu

The Actions menu can vary by tab. See the tab descriptions for Actions menu option differences.

Menu Option	Description
Create Client Installer...	Launches the client installer application. See the *Oracle Utilities Network Management System Installation Guide* for details on creating the installer and installing local copies of the Oracle Utilities Network Management System client applications. This menu item is available on all tabs.

Preferences Menu

The **Preferences** menu allows you to control certain common features of the Configuration Assistant.

Menu Option	Description
Smaller Font (Ctrl+Minus Sign)	Decreases the font size in text and icons. Repeat to further decrease the font size.
Bigger Font (**Ctrl+Plus Sign**)	Increases the font size in text and icons. Repeat to further increase the font size.
Reset Font (Ctrl+0)	The application will reset the text and icons to use their default font size.

Help Menu

Menu Option	Description
Configuration Assistant Help	Opens the Configuration Assistant online help file.
Email Log Files... (`Ctrl-Shift-M`)	Gathers the environment's log files and attaches them to a new email message using your default email client. The log files can then be sent to your support team or contact for further analysis.
Set Debug... (Ctrl-Shift-D)	Launches the Set Debug dialog allowing you to set debug on or off within your current environment. This is used for debugging and analysis purposes. See **Setting Debug** on page 5-32 for more information.
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.

Logout Menu

The **Logout** menu includes the **Logout User** function. Once selected, the Configuration Assistant exits.

Using the User Administration Tab

The Configuration Assistant User Administration tab allows an administrator to add and remove users, modify user types associated with users, and view user login activity. The User Administration tab contains the following panels:

- **Understanding the Current Users Panel**
- **Understanding the User Type Memberships Panel**
- **Understanding the User Log Panel**

From this tab, you can perform the following tasks:

- **Adding a User**
- **Editing a User**
- **Removing a User**
- **Saving an Exported User Configuration**
- **Changing User Type Memberships**
- **Reorder Current User Types**
- **Resetting a User Login**

Understanding the Current Users Panel

The Current Users panel 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.

Each time you select a row in the Current Users table, the User Type Memberships and User Log panels populate 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 last logged on.

- The **Last Logoff** column contains the date and time the user was last logged off.

- The ➕ **Add** button 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 🔁 **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. Click ➕ **Add** in the Current Users panel. The Add / Edit User Information dialog appears.

2. Enter the user information in the data fields:

   - **Username:** the new user's system login name.

   - **Full Name:** the user's full name.

   - **Default Zone Set:** optionally, add the name of the control zone set that the user will be automatically subscribed to when they log in to the system.

   - **Excluded Zone Set:** optionally, enter a zone set that the user cannot subscribe to.

     Note: once you select a zone in either the Default Zone or the Excluded Zone, that zone will be removed as a choice from the other.

3. Select the user's account setting:

   - **Active User**: designates an active user account; required to login to NMS.

   - **Priority User**: used for callback processing, which sends priority customer callback notifications to users with the Priority User account setting selected.

   - **External User**: designates an external system user agent that connects to NMS via an interface, such as Web Callbacks or IVR.

     Note: Temporarily Inactivating a User

     When a user will be inactive for a period of time, you may wish to set their user status to inactive by deselecting the Active User option. This will keep them from logging into the system, but allows for simple reinstatement when they become available.

4. Click 💾 **Save**. The new user is added to the Current Users table.

   Note: If the entered **Username** already exists, an error will appear and you will have to modify the username.

Editing a User

To edit the name information for an Oracle Utilities Network Management System user, complete these steps:

1. Select the user you wish to edit in the Current Users table.

2. Click ✏️ **Edit**. The Add / Edit User Information dialog appears.

3. Modify any of the enabled fields, as desired.

4. Click 💾 **Save**. The user information is updated in the Current Users table.

   Note: If the modified Username already exists, an error will appear and you will have to modify the username.

Removing a User

To remove a user from Oracle Utilities Network Management System, complete these steps:

1. Select the user you wish to remove in the Current Users table.

2. Click ✖ **Remove**. A confirmation dialog appears.

3. Click **Yes** to remove the user or **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. Click ⬆ **Export Configuration...** beneath the Current Users table. A dialog appears indicating that the configuration is being generated.

2. Once the generation is finished, the Generated Configuration dialog appears.

   • To save the generated SQL statements to a file, click 💾 **Save**. The Save Configuration File dialog appears. Type a name for the file into the File name field. The Save Configuration File dialog disappears.

   • To print the generated SQL statements, click 🖨 **Print**. The Print Preview dialog appears.

   • Click 🗑 **Cancel** to close the Generated Configuration dialog.

Understanding the User Type Memberships Panel

The User Type Memberships Panel allows you to assign a selected user to Oracle Utilities Network Management System applications and set their permissions by user type (see also **User Types** on page 1-2) for each.

The **User Type Membership Panel** displays the following fields and buttons:

- The **Products** column lists the Oracle Utilities Network Management System component applications.

- The **Remaining User Types** column lists the available user types for the selected product that the selected user does not have access to.

Product-User Type Matrix

User Type	Configuration Assistant	Model Management	Service Alert	Storm Management	Web Call Entry	Web Callbacks	Web Workspace
Administration	x		x				x
Crew Operations							x
Full Operations				x		x	x
Full Operations Plus Switching							x
Model Validation		x					
Storm Administration				x			
Switching Request							x
Trouble Maintenance							x
View Only				x			x
Web Call Entry					x		

- The **Current User Types** column lists the user types for the selected product that the selected user has access to.

- The ✚ **Add Selected User Types** 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 Types** 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. 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.

2. Select the desired product from the Products column. The Remaining User Types and Current User Types columns populate with the user type information for that product for the selected user.

   • To add a user type for a selected product, select user types from the **Remaining User Types** column.

     • Click ➕ **Add Selected User Types**. The selected user type will move to the Current User Types column

   • To remove a user type for a selected product:

     • Select the user type from the Current User Types column. Click ✖ **Remove Selected User Types**. The selected user type will move to the Remaining User Types column.

     Note: see the *Oracle Utilities Network Management System Configuration Guide* for details on adding and configuring user types.

Reorder Current User Types

To change the order of the configured user types on the login window, complete the following steps:

1. 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.

2. 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.

3. Click the appropriate arrow to change the user type order:

   • Click ⏫ to move the selected user type up to the top of the list.

   • Click 🔼 to move the selected user type up one position in the list.

   • Click 🔽 to move the selected user type down one position in the list.

   • Click ⏬ to move the selected user type down to the bottom of the list.

Understanding the User Log Panel

The User Log panel displays the login history for the selected user. From this panel you may also fix log entries for a user that is unable 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 **Export Table...** button opens a dialog to allow you to save the user log table view data to a comma separated value (csv) file.

- 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. The system also unsubscribes the user from any zones to which they were subscribed.

Resetting a User Login

To reset a user login, complete the following steps:

1. 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.

2. Select the rows in the User Log table that pertains to the login you wish to reset. The **Reset Login** button sensitizes.

    Note: the Reset Login button is only available for rows where the Logout Date, Logout Status, and Logout Method columns are blank.

3. 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.

Using the Mobile User Administration Tab

The Mobile User Administration tab allows you to configure users and permissions for the Oracle Utilities Operations Mobile Application.

Mobile Users

This contains the current user accounts, which can be added, removed, or edited. The available columns are:

• **Username:** The username of the user that is used to log into the application.

• **First Name:** The first name of the user.

• **Last Name:** The last name of the user

• **Creation Key:** The key that was used to create a user, if one was used.

• **Company:** The company that was created.

• **Permission Set:** The permission sets of the user.

• **Crew:** The current crew of the user.

• **Password:** The password of the user

The **Add**, **Remove**, **Edit**, **Refresh**, and **Export Configuration...** buttons operate the same way as in the User Administration tab; see **Using the User Administration Tab** on page 5-5 for details.

Current Keys

Key: The key that can be given to a crew to create a user account. The key should be sufficiently complex so that it could not be guessed.

Crew Prefix: A prefix that should be prepended to the user name to create a crew id for the new user (if it is configured to create a new crew).

Permission Set: The permission set that the created user will be a member of.

Crew Type: If a crew type is listed, then a crew of that type will be created automatically when this key is used to create a user. If it is left blank, then the user will choose an existing crew from a list when the user logs on.

Available: The number of user accounts that can be created using the key. It is decremented each time it is used.

Permission Sets

This contains the list of permission sets, which is a group of permissions that can be used to define what access a user has to the system.

Changing Permission Sets

To modify the permissions for a permission step, do the following:

1. Select the set you wish to modify.

2. To add a permission, select from the Available Permissions column. Click Add Selected Permission. The selected user type will move to the Current Permissions column

3. To remove a permission, select the permission from the Current Permissions Column and click Remove. The selected permission will move to the Available Permissions column.

Permissions

Permissions define what a user has access to, and can also be used to customize the gui for a particular subset of users. There are certain permissions that the system uses to automatically limit access to certain functionality:

- **Change Crew:** This access allows a user to change the crew. If it is not assigned to a user then the user will be locked to their existing crew.

- **Allow Non MDT Crew:** This allows the user to select a Non MDT crew. If not enabled, then only MDT crews are available to the user.

Other permissions can be defined which can be accessed by the mobile application itself. However, using permissions in that manner should not be used for security purposes, because only the above permissions are integrated into the server's permissions.

Using the 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 Web Trouble in various situations, such as outage prediction, crew behavior, etc.

This section contains the following information:

- **Event Management Rules Components**

- **Working with Rules**

Event Management Rules Components

The Event Management Rules tabs contains three panels:

- **Rule Categories Panel**

- **Currently Configured Rules Panel**

- **Documentation Panel**

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 search function at the top of the panel allows you to search for rules.

The Rule Categories may be expanded or collapsed using the buttons below the Categories tree:

- **Expand All:** expands all of the rule category folders to display their contents.

- **Collapse All:** 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 bullet (⬤) symbol indicates that the rule is already configured in at least one rule set. The red **x-like** (✖) 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 expand or collapse it by clicking the directional arrows next to the upper right corner of the rules categories panel.
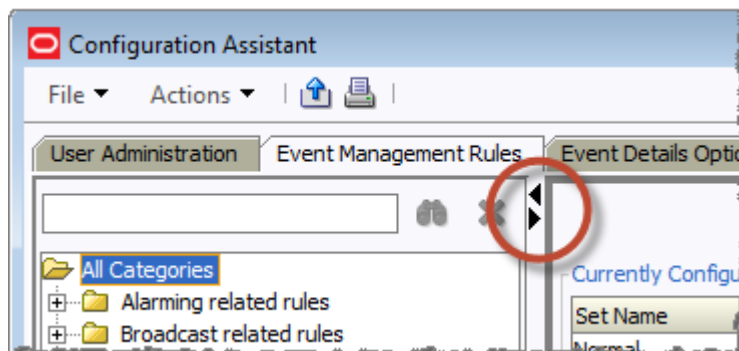
Searching for a Rule

You may filter the rules by adding a search term to the search field and clicking the search ( ) button.
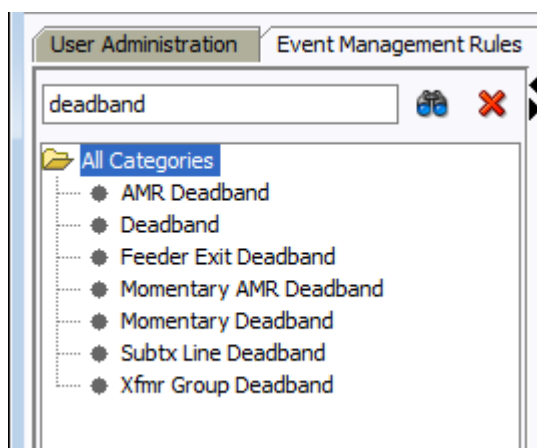
To clear the search, click the button.

Currently Configured Rules Panel

The Currently Configured Rules panel on the **Using the Event Management Rules Tab** tab lists the SRS rules configured for Oracle Utilities Network Management System. It allows you to add, edit, and remove rules.

> **Note:** The table uses *friendly* names for readability. For example, one SCADA data related rule has a friendly **Rule Name** of **Allow Calculated Points**, but the code rule name is RT_CALCULATED_POINTS. See **Documentation Panel** on page 5-16 for more information.

Action Buttons

- 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 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.

Currently Configured Rules Table

The Currently Configured Rules panel displays the following fields and buttons:

- The **Set Name** column displays the friendly 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.

Filtering the Currently Configured Rules Table

To filter the Currently Configured Rules table based upon a selected column value, complete these steps:

1. Click a cell that contains the value you want to filter the table by. The row will be highlighted and the cell that was clicked will have a border indicating that it is selected.

2. Right-click and choose **Toggle Auto Filter** from the options menu to filter the table by the selected column/cell value combination.

   To remove filtering, right-click anywhere in the table and select **Toggle Auto Filter**. The filter will be removed and all table rows will appear.

Documentation Panel

When you select an individual rule and certain categories from the list in the Rule Categories panel, the Documentation panel populates with documentation for the selected rule. For categories, the information is usually descriptive, but the individual rules documentation has the database names for the rule, its attributes, and valid values. If there are related rules, the related rule will be included and will link to the documentation content for that rule.

Example

If you select the **Broadcast related rules** category, the Documentation panel populates with:

These rules control how calls and jobs get broadcast, including which calls appear in the viewer.

If you select the **Broadcast Clues** rule, the Documentation panel will update with documentation for broadcastClues (the database name). Part of the broadcastClues description includes a link to the documentation page for the related broadcastIncidents rule, which broadcastClues is normally used with.

The friendly names in the Currently Configured Rules panel correspond to the database names as follows:

Friendly Name	Database Name	Database Description
Set Name	set_name	A name used to identify what set a rule should belong to.
Incident Type	incident_type	See each individual rule description for valid value for this column.
Rule Name	rule_name	The name of the rule.
Rule Value 1	rule_value_1	A character string. See each individual rule description for valid and default values, if applicable.
Rule Value 2	rule_value_2	An integer value. See each individual rule description for valid and default values, if applicable.
NCG CLS	ncg_cls	Used in conjunction with the ncg_idx value to narrow the application of a rule to a specific control zone.
NCG Index	ncg_idx	Used in conjunction with the ncg_cls value to narrow the application of a rule to a specific control zone.
Rule Value Integer 1	rule_value_integer_1	An integer value. See each individual rule description for valid and default values.
Rule Value Integer 2	rule_value_integer_2	An integer value. See each individual rule description for valid and default values.
Rule Value Integer 3	rule_value_integer_3	An integer value. See each individual rule description for valid and default values.
Rule Value Integer 4	rule_value_integer_4	An integer value. See each individual rule description for valid and default values.
Rule Value Integer 5	rule_value_integer_5	An integer value. See each individual rule description for valid and default values, if applicable.

Working with Rules

Add a Rule to the Configuration

To add a rule to the configuration, complete these steps:

1. Click ➕ **Add** to open the Event Management Rule Fields dialog.

    Note: If you had first selected a row in the Currently Configured Rules table, the dialog will be initialized with the values from that row.

2. Select the name of the rule you wish to add from the **Rule Name** drop-down menu.

3. Select the name of the rule set you wish to add the rule to from the **Ruleset** drop-down menu.

4. Indicate whether or not you want the rule to be activated in the rule set by checking (or unchecking) the **Active** checkbox.

5. Enter the desired configuration values for the remainder of the fields.

    Note: see the Documentation Panel for valid values for the fields.

6. Click 💾 **Save** to save the newly added rule.

7. If the newly added rule already exists in the specified rule set, a conformation dialog appears.

    *   Clicking **Yes** overwrites the existing rule configuration with the new configuration.

    *   Clicking **No** will not add the new rule and you will be returned to the Event Management Rule Fields dialog.

    Note: This is the only validation currently performed when adding a rule. Please refer to the individual rule documentation in the Documentation Panel for further information regarding valid values.

Edit a Rule in the Configuration

To edit a rule in the configuration, complete these steps:

1. Select the rule you wish to edit in the Currently Configured Rules table.

2. Click 🖊 **Edit**. The Event Management Rule Fields dialog appears.

3. Modify the rule fields as desired.

    Note: see the Documentation Panel for valid field values.

4. Click 💾 **Save**. The rule information is updated in the Currently Configured Rules table.

    Note: If you modify a rule's rule set to have values that already exists in that other rule set, an error dialog appears. Clicking **Yes** will overwrite the existing rule configuration with the new configuration that you specified. Clicking **No** will preserve the existing rule.

    For example, you select a **Crew Incident Alarm** rule that is in the Major Storm rule set and then select **Minor Storm** from the **Ruleset** options. If the rule already exists in the Minor Storm rule set, you will get the error.

    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.

Remove a Rule from the Configuration

To remove a rule from the configuration, complete these steps:

1. Select the rule you wish to remove in the Currently Configured Rules table.

2. Click ✖ **Remove**. A confirmation dialog appears.

3. Click **Yes** to remove the rule or **No** to cancel.

Export 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. Click the ⬆ **Export Configuration...** button beneath the Currently Configured Rules table. A dialog appears indicating that the configuration is being generated.

2. Once the generation is finished, the Generated Configuration dialog appears.

    *   To save the generated SQL statements to a file, click 💾 **Save**. The Save Configuration File dialog appears. Type a name for the file into the File name field. The Save Configuration File dialog disappears.

    *   To print out the generated SQL statements, click 🖨 **Print**. The Print Preview dialog appears.

    *   Click the 🗑 **Cancel** button to close the Generated Configuration dialog.

Using the Event Details Options Tab

The Event Details Options tab allows an administrator to configure the contents of each of the option menus that reside Event Details windows. (See **Event Details** on page 2-1 for more information.)

This tab contains one panel:

• **Event Details Options Panel**

Use this tab to perform the following tasks:

• **Adding an Options Panel Submenu**

• **Adding an Option**

• **Removing an Option**

• **Editing an Option**

• **Saving Exported Event Details Configuration**

• **Reordering 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 Event Details windows (see **Event Details** on page 2-1 for details).

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 or submenu 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 Options Panel Submenu

Submenus allow you to create cascading groups of Event Details options that provide logical categories for the user to drill down to make their selection. To add a submenu to an option menu, complete the following steps:

1. Select the **Event Type** whose option menu you wish to change.

2. Select the option menu you wish to change from the **Event Details Option Menus** drop-down list.

3. Click ✚ **Add**. The Add/Edit Option dialog appears.

4. Enter the new option name in the **Option Name** field.

5. Enter the same name in the **Display Menu** field.

6. If the new submenu is being added to another submenu, enter the name of the parent submenu in the **Submenu** field.

7. Click 💾 **Save**. The Options for Currently Selected Menu table updates with the new option.

   Note: when changing an existing event details option to use cascading drop down menus, a configuration change to an Event Details XML file (i.e., EVENTDETAILS_PNL_ACTIONS.inc) is also needed. You will need to edit the ComboBoxBehavior element by adding the display_menu and submenu attributes. For more information, see the Event Details Configuration section of the *Oracle Utilities Network Management System Configuration Guide*.

Adding an Option

To add a new option to an option menu, complete the following steps:

1. Select the **Event Type** whose option menu you wish to change.

2. Select the option menu you wish to change from the **Event Details Option Menus** drop-down list.

3. Click ✚ **Add**. The Add/Edit Option dialog appears.

4. Enter the new option name in the **Option Name** field.

5. Leave the **Display Menu** field blank.

6. If the option is being added to a submenu, enter the name of the submenu in the **Submenu** field.

7. Click **Save**. The Options for Currently Selected Menu table updates with the new option.

   Note: If the option name already exists, an error will appear and you will have to modify the name.

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, 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.

7. Click **Save** 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.

    • To save the generated SQL statements to a file, click 💾 **Save**. The Save Configuration File dialog appears. Type a name for the file into the File name field. The Save Configuration File dialog disappears.

    • To print out the generated SQL statements, click 🖨 **Print**. The Print Preview dialog appears.

    • Click the 🗑 **Cancel** button to close the Generated Configuration dialog.

Reordering Options

To change the order of the options on an option menu, complete the following steps:

1. Select the Event Type whose option menu you wish to change.

2. 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.

3. 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.

4. Use the arrow buttons to rearrange options:

    • Click 🔼 to move the selected user type up to the top of the list.

    • Click 🔼 to move the selected user type up one position in the list.

    • Click 🔽 to move the selected user type down one position in the list.

    • Click 🔽 to move the selected user type to the bottom of the list.

Using the 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**

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 **Filter Option Table** contains the following columns:

  - 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 ❌ **Remove** 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 ➕ **Add** 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** to save the new filter criteria.

   Note: To make the new filter criteria available in the Work Agenda, the name of the new filter needs to be added to the OTHER_FILTERS column in the DYNTABLE_VIEWS table for the desired Work Agenda view.

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 ✖ **Delete**. 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.

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. Click the ⬆️ E**xport Configuration...** button beneath the Current Filter table.

2. Once the generation is finished, the Generated Configuration dialog appears.

   - To save the generated SQL statements to a file, click 💾 **Save**. The Save Configuration File dialog appears. Type a name for the file into the File name field. The Save Configuration File dialog disappears.

   - To print out the generated SQL statements, click 🖨️ **Print**. The Print Preview dialog appears.

   - Click the 🗑️ **Cancel** button to close the Generated Configuration dialog.

Using the State Transitions Tab

In Oracle Utilities Network Management System, events, switching sheets, safety documents, and damage assessment pass through different phases over their lifecycle. These phases are represented by *states*. Transitions between states are knows as state transitions. A transition between any two states happens when certain actions are performed by a user or the system.

The State Transitions tab allows you to view the state transitions of events, switching sheets, safety documents, and damage assessment in tabular and graphical views. The tab is divided into 3 panes:

1. Selection Pane

State transitions in NMS are divided logically into multiple groups. The highest level division is based on the application (**APP**); the second level is based on sub-categorizations of the applications into groups (**Group**); the last level are states applicable to the application group.

Filter Options Menus

- **App**: the application type option menu lists codes for the NMS applications with state transitions:

  - DA - Damage Assessment

  - SF - Safety

  - TE - Trouble Events (generic for events)

  - WSW - Web Switching

- **Group:** the group selection lists the available groups for the selected application. For example, if the application is TE, you may select OUT for outage events.

- **States:** the states selection lists the available states for the chosen app-group combination. In addition to the specific states selection, you may choose **All States** to see all state transitions for the app-group combination.

Buttons

- 🔍 **View:** Based on the selection of different combo boxes, on clicking this button, it will display the filtered set of transitions in table and graphical view.

- **Refresh:** refreshes the data by reading from the database table, but retains previously selected filters by user.

2. **Tabular Section**

   The table displays transitions in tabular view and contains following columns:

   - **APP**: Application name
   - **TRANS_KEY**: unique key of transitions
   - **TRANS_GROUP_KEY**: transition type (OUTAGE/MEET).
   - **FROM_STATE_KEY**: unique value for state (from).
   - **TO_STATE_KEY**: unique value for state (to).
   - **TRANS_ACT_KEY**: unique value for action.
   - **DESCRIPTION**: description of this state transition.

3. **Graphical Section:**

   The transitions from the table are displayed in a hierarchical view in this section. States are displayed as rectangular boxes labeled with the state name. Transitions are displayed with arrow symbols beginning at the *from state* and ending at the *end state* with the action name of the transition on top of the edge. When you select an arrow in the graphical view, the corresponding table row will be highlighted.

Viewing State Transitions

To view state transitions, do the following:

1. Select the application from the **App** options menu.

2. Select the group from the **Group** options menu.

3. Select a specific state from the **State** options menu.

4. Click **View**.

The table and graph will be updated for the state transitions applicable to your selection.

Example: New Damage Assessments State Transitions

1. Select **DA** from the **App** menu.

2. Select **Damage Assessment** from the **Group** menu.

3. Select **New** from the **State** menu.

4. Click the arrow that starts at the **New** box and ends at the **Assessed** box.

Using the Default Restoration Times Tab

The Default Restoration Times tab on the Configuration Assistant window displays the current default restoration time configuration and allows you to modify the ERT values for each asset class by control zone.

> **Note**: To change the system-wide default restoration time, see **Setting the System-Wide Estimated Restoration Time** on page 2-22.

Asset/Zone Default Restoration Times Pane

The Asset/Zone Default Restoration Times pane provides a tabular view that provides the relationship between a control zone, an asset, and the default restoration time that has been set for them.

Columns

- The **Control Zone** column displays the control zone name.

- The **Asset Class** column displays the asset class name.

- The **User** column lists the user who configured the default restoration time.

- The **Default Restoration Times (minutes)** column displays the number of minutes to be used for the default restoration time for this control zone-asset class combination.

Buttons

- The ✚ **Add** button opens the Add Default Restoration Time dialog.

- The ✖ **Remove** button marks the selected default restoration time for deletion.

- The 💾 **Save** button saves any changes you have made.

- The 🔄 **Refresh** button refreshes the screen. If you have any unsaved changes, the system asks if you want to save them.

- The ⬆ **Export Configuration** button opens the Generated Configuration window, which displays the SQL statements used to generate the current configuration.

Row Highlighting

The table uses row highlighting to indicate changes that have not been saved. Red indicates that the row is marked for removal, green indicates the row has been edited, and light blue indicates that the row has been added.

Adding an Asset/Zone-Based Default Restoration Time

To add a default restoration time for a specific asset class-control zone combination, follow these steps:

1. Click **Add**. The Add Default Restoration Time window appears.

2. Click the **Control Zone Selection** button ( ) to display a list of control zones.

3. Select a Control Zone and click **OK**.

4. Click the **Select** button to display a list of asset classes.

5. Select an asset class and click **OK.**

6. Modify the Restore Time (minutes) field, as necessary.

7. Click **OK**. The Asset/Zone Default Restoration Times pane refreshes with a new row, which is highlighted in light blue to show the addition.

8. Click **Save** to commit the addition.

> **Note:** if you decide against adding the new Default Restoration Time, click **Refresh**. The system will prompt you to save changes; click **No**.

Modifying an Asset/Zone-Based Default Restoration Time

To edit an existing default restoration time, do the following:

1. Double-click the Default Restoration Time cell to open it for editing.

2. Edit the value.

3. Click anywhere outside the cell to finish the edit. The row will be highlighted in green to indicate the pending change.

4. Click **Save** to commit the change.

> **Note:** if you decide not to save changes, click **Refresh**. The system will prompt you to save changes; click **No**.

Deleting an Asset/Zone-Based Default Restoration Time

To edit an existing default restoration time, do the following:

1. Select the row to be removed.

2. The **Remove**. The row will be marked for removal pending saving changes. **T**he row will be highlighted in red to indicate the pending change.

3. Click **Save** to commit the change.

> **Note:** if you decide against deleting the row, click **Refresh**. The system will prompt you to save changes; click **No** to confirm the refresh.

Saving an Exported Default Restoration Time Configuration

To generate and save SQL statements for the current state of the configuration associated with the Default Restoration Times tab, complete the following steps:

1. Click the E**xport Configuration...** button beneath the Asset/Zone Default Restoration Times table.

2. Once the generation is finished, the Generated Configuration dialog appears.

   • To save the generated SQL statements to a file, click **Save**. The Save Configuration File dialog appears. Type a name for the file into the File name field. The Save Configuration File dialog disappears.

   • To print out the generated SQL statements, click **Print**. The Print Preview dialog appears.

   • Click the **Cancel** button to close the Generated Configuration dialog.

Using the Customer Administration Tab

The Customer Administration tab allows you to define a weighted priority for a customer. The weighted priority may be used for sorting events in the Work Agenda or viewed in the Trouble Info Customers view.

Menus and Toolbar

When the Customer Administration tab is active, the Configuration Assistant's Actions menu and toolbar change to provide functions for Customer Administration. The Options menu provides search methods.

Actions Menu

Menu Option	Description	Icon
Customer Search	Initiates a search when criteria has been added to the Searchable Information table in the Customer Weighted Priority Editor pane.	
Save	Saves information entered in the Customer Weighted Priority Editor.	
Reset to default	Used to reset a Customer weighted priority to the default value.	--
Clear Form	Clears all data from the Customer Weighted Priority Editor pane.	

Options Menu

Menu Option	Description
Set Wild Card Searching • Before • After • Both	Options for setting a wild card searches: Before, After, or Both. Note that you do not have to add a wild card character (*e.g.*, *). **Example:** using the "After" wild card search. **Name**: *Mary S* returns: • Mary S Abbott • ... • Mary Szbrinski

Menu Option	Description
Use Sound Search	Returns searches with "sounds like" matches. **Example:** Use Sound Search **Name**: *Fredric* returns: • Fredric • Fredrick • Frederick • Fred • Freda
Use Exact Match Search	Returns only exact matches.
Set Max Searching Results	Opens the Set Maximum Searching Result dialog where you can set the limit for matches to return. The system will display a message when a search returns over 200 results, which is the maximum allowed by default.

Setting Debug

The Set Debug dialog is initiated from the Help menu of all the NMS Environments. In some cases, issues cannot be properly diagnosed with only a list of actions the users partakes within the environment. In those cases, additional debug is required. The Set Debug dialog should be used to turn debug categories on and off within an environment. When the dialog is initiated from the Configuration Assistant user type, then additional options are available allowing the user to manage debug on all the clients and also within the Oracle Utilities Network Management System services.

Columns

• The **Name** column displays the name of the debug category. In some cases this is the fully qualified class name.

• The **On/Off Toggle** column displays and allows you to set whether the debug for that row is on or off.

• The **Level** column displays whether the debug is on or off.

• The **Application** column displays the application that the debug pertains to. If it is a generic debug category, then it will have an Application value of *All*. Other examples include, but are not limited to Web Switching, Authority, Call Entry, etc.

• The **Destination** column displays where the debug setting will be set. For Java clients, the value will be Clients. Other values include, but are not limited to WebLogic, PFService, publisher, etc.

> **Note:** This column is only visible if you are viewing the dialog as a Configuration Assistant user. All other users will be limited to viewing debug pertaining to their client environment. Only a Configuration Assistant user can set debug levels on other clients, within WebLogic or within the Oracle Utilities Network Management System services.

- The **Description** column displays the documented description for the debug entry. Not all debug entries will have a description as some entries will be determined dynamically based on what the client has access to.

Manual Debug Entry

The Manual Debug Entry form is used to enter settings for debug that is not available in the table list or may require a level setting other than on or off.

> **Note:** Only Oracle Utilities Network Management System services can accept debug number values greater than 1. Any value greater than 1 that is sent to a Java based destination will be viewed as an *on* request for the debug specified.

- The Name field allows you to enter a debug name that may not be available from the table list.

- The Destination field defines where the debug setting should be applied. If you have a custom adapter that has debug capabilities, then you can manually enter the registered name of this adapter in this field.

  > **Note:** This field is only visible if you are viewing the dialog as a Configuration Assistant user. All other users will be limited to setting debug on their client environment.

- The **Level** field is used to define what level of debug you would like to define for the name that was entered. The field can take manual entries as well in case the list of levels do not include the debug level you wish to send to your specified Destination. If you are not a Configuration Assistant user, then the only levels you should use are on and off.

- The **Set** button sets the debug level within the current client environment or sends it to the Destination indicated if you are running this as the Configuration Assistant user.

The **Help...** button opens the online help window for this section.

The **OK** button closes the dialog.

Using the Customer Administration Weighted Priority Editor

The Customer Weighted Priority Editor is divided into two panes: **Searchable Information** and **Additional Customer Information**. As the name suggests, the **Searchable Information** pane is used to search for and load customer information. Once the customer is found and selected, the **Additional Customer Information** is populated with current information and the **New Weighted Priority** field becomes editable.

> **Note:** the Configuration Assistant Customer Administration search functions are much like Web Call Entry's search behavior.

Searching for a Customer

To set a weighted priority for a customer, perform the following steps:

1. Set your search option; see **Options Menu** on page 5-31 for more information on search options.

2. Enter Search Criteria. You can search for a customer based on any of the fields in the Searchable Information pane:

   - Account Number

   - Telephone Number

- Name

- Address

- City

3. Press Enter (or click the ⬛ search toolbar button).

- If the search does not return a value, the system will return "*No customers matched your search criteria.*" Click **OK** to dismiss the message.

- If the search returns more than 200 records (or your defined Max Searching Results value), the system will return the "Too Many Customers Found" message, which will remind you of the option to set a higher maximum searching results. Click **OK** to dismiss the message. The Customer Selection dialog opens listing the search results up to the maximum searching results value.

4. Select the customer to edit and click **OK**.

Editing a Customer Weighted Priority

Once you have selected a customer from the search results, the customer account information is loaded into the Customer Weighted Priority Editor. The **New Weighted Priority** field, which is at the bottom of the Additional Customer Information pane, is the only editable field.

1. Enter an integer value in the **New Weighted Priority** field. Notice that the ⬛ Save button becomes enabled.

> **Note:** If you decide against editing the selected customer, click 🖌 to reset the form.

2. Click ⬛.

Resetting Weighted Priority

If you need to set a customer's weighted priority back to its original value, perform the following steps:

1. Search for the customer to load their data into the Customer Weighted Priority Editor.

2. From the Actions menu, select **Reset to default**. The **New Weighted Priority** field will be populated with the customer's original weighted priority value.

3. Click ⬛.

Appendix A

Acronyms

This appendix lists acronyms found in the Oracle Utilities Network Management System and its documentation.

Acronym	Description
AMI	Advanced Metering Infrastructure
ACT	Active
AMR	Automated Meter Reading
API	Application Programming Interface
App	Application (typically mobile or tablet based)
ATO	Automatic Throw Over
AVL	Automatic Vehicle Location
CCB	Oracle Utilities Customer Care and Billing
CIS	Customer Information System
CMI	Customer Minutes Interrupted
CSS	Oracle Utilities Customer Self Service
CSV	Comma Separated Values
CVR	Conservation Voltage Reduction
DA	Distribution Automation / Damage Assessment
DCZ	Delegated Control Zone
DER	Distributed Energy Resource
DG	Distributed Generation
DMS	Distribution Management System
DNP	Distributed Network Protocol
DR	Demand Response
EAT	Estimated Assessment Time

Acronym	Description
EMR	Emergency
ERT	Estimated Restoration Time
FLA	Fault Location Analysis
FLISR	Fault Location, Isolation, and Service Restoration
FLM	Feeder Load Management
GIS	Geographic Information System
GPS	Global Positioning System
GRP	Group
HSB	Hue/Saturation/Brightness
HTML	Hypertext Markup Language
ICCP	Inter-Control Center Communications Protocol
IEEE	Institute of Electrical and Electronics Engineers
iOS	Operating System for Apple Mobile Devices.
IVR	Interactive Voice Response
JDBC	Java Database Connectivity API
JNDI	Java Naming and Directory Interface
kV	kilovolt
kVA	kilovolt-ampere
kVAr	kilovolt-ampere reactive
kW	kilowatt
MDM	Oracle Utilities Meter Data Management System
MED	Medical
MWM	Oracle Utilities Mobile Workforce Management
NCG	Network Control Group
NMS	Oracle Utilities Network Management System
NTS	NMS Training Simulator
ODM	Oracle Utilities Operational Device Management
OMS	Outage Management System
ORS	Oracle Real-Time Scheduler
OS	Operating System
OSX	Apple Operating System for Macintosh Computers
OUA	Oracle Utilities Analytics
PDF	Portable Document Format

Acronym	Description
PF	Power Flow
RDBMS	Relational Database Management System
RGB	Red/Green/Blue
RTF	Rich Text Format
RTU	Remote Terminal Unit
SA	Service Alert
SCADA	Supervisory Control and Data Acquisition
SDK	Software Development Kit
SGG	Oracle Utilities Smart Grid Gateway
SMS	Short Message Service
SMTP	Simple Mail Transfer Protocol
SQL	Structured Query Language
SS	Suggested Switching
STD	Standard
TBG	To Be Grouped
TBU	To Be Ungrouped
TTL	Time-to-Live
URI	Uniform Resource Identifier
URL	Uniform Resource Locator (Internet Address)
VA	Number of Violations After
VB	Number of Violations Before
VVO	Volt/VAr Optimization
WAM	Oracle Utilities Work and Asset Management
WCB	Web Callbacks
WCE	Web Call Entry
WLS	Oracle WebLogic Server
WMS	Work Management System
WS	Web Service
WW	Web Workspace
XML	Extensible Markup Language
XSL	Extensible Stylesheet Language
XSLT	Extensible Stylesheet Language Transformations

Appendix B

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 displays the current status of each event listed. The event status is also displayed on the Call Information window. The following table provides the event status codes, their descriptions, and the associated icons used in the Work Agenda and associated tools.:

Status Code	Description	Icon
ASN	Crew is assigned to the event.	
CMP	Event has been completed (job and event details are complete).	
C-CNL	Event was cancelled by the cancel call and has a dispatched crew, which requires operator action. Once the crew has been released, the event may be cancelled.	
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.	
INC	Event has been completed, but information needs to be entered in the Event Details window.	
MADE-SAFE	The event has been made safe.	
MNP	Maintenance pending.	
NEW	New unacknowledged event.	--

Status Code	Description	Icon
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-CNL	SCADA event has been cancelled from the Work Agenda.	
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.	--
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.	--

Status Code	Description	Icon
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.	✔️
SNT	Unassigned (acknowledged) event manually sent to the mobile system.	✉️
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 system reports that the meter at the outage location is not isolated. This state provides an indication for the operator to verify that the customer indeed is outaged.	--
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
CSVO	confirmed service outage
FUZZY	fuzzy event
MEET	meet
NFY	notify alarm
NON	non-outage
PDO	probable asset outage
PLAN	planned outage
PSO	probable service outage
RDO	real asset outage
SWP	switching job

Appendix C

Color Coding

This appendix lists and describes color coding that appears in Oracle Utilities Network Management System screens, including:

- **Crew Status**

- **Event Status**

- **Callback Status**

> **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 color coding used on the Crew Actions and Crew List windows to indicate crew status when cell coloring is enabled in the Web Workspace **Preferences** menu (see **Color Coding Options** on page 1-7). These colors are also used for AVL crew symbols in the Viewer.

Color	Crew Status
Green	En Route
Dark Green	Onsite
Yellow	Unavailable
Cyan	Assigned
Orange	Suspended
Brown	Crew has no control zone (i.e., the crew's assigned control zone has been removed from the control zone hierarchy).
White	Available

Event Status

The table below identifies the color coding used on the Work Agenda list to indicate the event status when cell or row coloring is enabled in the Web Workspace **Preferences** menu (see **Color Coding Options** on page 1-7).

Row Color	Event Status
White text on dark red background	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
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
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

Pipe Symbology

In the Viewer, pipe symbology changes color and line style (*e.g.*, pattern, thickness) for different types of pipes and topology states. Pipe symbology is configurable. The following table shows the default color coding used for pipe symbology:

Line Style	Color	Description
Dashed	Black and white	Isolated
Thick	Light blue overlay	In Trace mode, indicates a pipe that is part of the path from a selected device
Thick	Magenta overlay	Loop, bi-directional flow
Thick	Purple overlay	Parallel
Solid	Varies	Standard pipe

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.

Appendix D

Tool to User Type Matrix

This appendix lists the Oracle Utilities Network Management System tools that are available to each user type in the following environments:

- **Web Workspace**

- **Storm Management**

Web Workspace

Tool (license)	Full Operations plus Switching	Full Operations	Trouble Maintenance	Crew Operations	View Only	Administration	Switching Request	Trainer
Alarms and Device Lists	X	X	X		X	X	X	X
AMI Requests (amr)	X	X				X	X	X
Attributes	X	X	X	X	X	X	X	X
Authority	X	X	X	X	X	X	X	X
Call Entry								X
Condition Summaries	X	X	X		X	X	X	X
Configuration Assistant	X	X				X		X
Control	X	X	X	X	X	X	X	X
Crew Actions	X	X	X	X	X	X	X	X
Conservation Voltage Reduction (powerflow)	X					X	X	X
Damage Assessment	X	X				X	X	X
Damage Reports	X	X				X	X	X

Tool (license)	Full Operations plus Switching	Full Operations	Trouble Maintenance	Crew Operations	View Only	Administration	Switching Request	Trainer
DMS Summary (flm)	X	X			X	X	X	X
Event Details	X	X	X	X	X	X	X	X
Event Log	X	X	X	X		X	X	X
Fault Location Analysis (fla)	X	X				X	X	X
FLISR (flisr)	X					X	X	
FLM Summary (flm)	X	X				X	X	X
FLM Tool (flm)	X	X				X	X	X
Manage Documents	X	X				X	X	X
Safety (switching)	X					X	X	
SCADA Summary	X	X				X	X	X
Suggested Switching Solutions (suggested_switching)	X					X	X	
Suggested Switching (suggested_switching)	X					X	X	
Switching (switching)	X					X	X	
Topology Validation Viewer	X	X				X	X	X
Trouble Info	X	X		X	X	X	X	X
Trouble Summary	X	X			X	X	X	X
User Log	X	X				X	X	X
Viewer	X	X	X	X	X	X	X	X
Volt/VAr Optimization (volt_var)	X					X	X	
Weather Zone Forecast (flm)	X	X			X	X	X	X
Work Agenda	X	X	X	X	X	X	X	X

Storm Management

Tool	Full Operations	View Only	Storm Administration
Calculate Crews		X	
ERT Override	X		
Forecast Profiles	X		
Force Simulation	X		
Storm List			X
Storm Report	X	X	
Study Session Control	X		
Summary Information	X	X	
Toggle Storm Mode	X		
Zone Selection	X	X	