Oracle Utilities Meter Data Management

User's Guide

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Module: jsbn library

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What's New

New Features in the Oracle Utilities Meter Data Management User's Guide

This chapter outlines the new features of the 1.6.0 and 1.6.1 releases of Oracle Utilities Meter Data Management that are documented in this guide.

New Features for Release 1.6.1.16

Feature	Description	For more information, refer to...

New parameters on the validation and estimation rules	The following parameters have been added to the following validation rules:
	• Meter Changeout Start Time and Value (Consumption and TOU)
	  • Require Previous Final Usage
	• Fill Missing Start Time and Value (Consumption and TOU)
	  • Require Previous Final Usage
	• Interval Estimation Rules
	  • Use Prior Cuts Only
		Estimation Rules:
		• **Interval Estimation Rules** on page 3-54
		Consumption Rules:
		• **Meter Changeout Start Time and Value** on page 3-26
		• **Fill Missing Start Time and Value** on page 3-29
		TOU Rules:
		• **Meter Changeout Start Time and Value** on page 3-35
		• **Fill Missing Start Time and Value** on page 3-38

New Features for Release 1.6.0.0

Feature	Description	For more information, refer to...
Support for Billing Determinant Calculation	This release includes support for calculating billing determinants at the Account, Service Point, and Meter level. This includes screens for initiating billing determinant calculation, viewing calculation requests and results, and a validation that can be used to trigger automatic recalculation of billing determinants in the case of replacement usage.	All Rules validations: • **Bill Determinant Recalculation** on page 3-24 **Chapter 8**: **Billing Determinant Calculations** **Chapter 6**: **Setting Up Oracle Utilities Meter Data Management Billing Determinant Calculations** in the *Oracle Utilities Meter Data Management Installation and Configuration Guide*.
Support for Demand Readings	This release includes support for demand readings, including the ability to calculate demand for consumption and TOU meters. In addition, the Usage Add/Edit and Usage Analysis features have been enhanced to support display of demand usage.	Consumption Rules validations: • **Calculate Demand** on page 3-27 TOU Rules validations: • **Calculate Demand** on page 3-36 Usage Add/Edit: • **Searching Usage** on page 4-2 Usage Analysis: • **Searching Usage Analysis** on page 4-20 • **Viewing Usage Analysis** on page 4-22
Support for Meter Change-Out	A "Meter Changeout" occurs when the associations between a physical and logical meter changes, and the current physical meter that is installed at a service point is swapped out for a new physical meter. This can occur when a physical meter is damaged or replaced. This release includes validations that can check for meter changeouts, check if readings overlap a meter changeout, and can calculate the start time and value for consumption and TOU readings that occur on or near meter changeout and that are missing the start time and/or start value.	All Rules validations: • **Meter Changeout Overlap Check** on page 3-19 Consumption Rules validations: • **Meter Changeout Start Time and Value** on page 3-26 TOU Rules validations: • **Meter Changeout Start Time and Value** on page 3-35 **Meter Changeout Validations** on page 5-50 in the *Oracle Utilities Meter Data Management Installation and Configuration Guide*.

Feature	Description	For more information, refer to...
New Validations	This release includes several new usage validations.	All Rules validations: • **Zero Consumption** on page 3-22 • **Negative Consumption** on page 3-22 • **Active Account** on page 3-23 • **Valid Service Point** on page 3-23 • **Low Average Daily Usage** on page 3-23 • **Vacant Premise Average Daily Usage** on page 3-24 Interval Rules validations: • **Consecutive Zeros** on page 3-48 • **Consecutive Missing** on page 3-49 • **Percent Change** on page 3-49 • **Load Factor Check** on page 3-50
Enhanced Process Control Interface	The Process Control Interface has been extended to display additional information related to payload and transaction processing. In addition, this release includes two new process control reports. The Energy Information Platform dashboard includes a clip that displays statistics related to usage import processes performed by the Oracle Utilities Meter Data Management.	**Process Control Interface** on page 5-13 Reports: • **Process Control Summary Report** on page 9-10 • **Process Control Detail Report** on page 9-11 MDM Process Control Interface Clip: • **Dashboard Clips** on page 3-3 in the *Oracle Utilities Energy Information Platform User's Guide*

Chapter 1

Oracle Utilities Meter Data Management Overview

This chapter provides an overview of the Oracle Utilities Meter Data Management application, including:

- **Introduction**
- **What is this book?**
- **Oracle Utilities Meter Data Management Components and Documentation**
- **International and Multiple Currency Support**
- **What is Oracle Utilities Meter Data Management?**
- **Working with Oracle Utilities Meter Data Management**
- **Oracle Utilities Meter Data Management Glossary**

Introduction

Oracle Utilities Meter Data Management is a web-enabled application that provides access to Oracle Utilities Meter Data Management functionality via an Intranet/Internet using Microsoft Internet Explorer. Because all Oracle Utilities web applications share a common framework, users can switch between different Oracle Utilities web applications (such as Oracle Utilities Billing Component and Oracle Utilities Quotations Management) without having to open multiple applications.

Important Note

Before you can use this version of Oracle Utilities Meter Data Management, you must ensure that appropriate data and records have been created in the Oracle Utilities Data Repository. The instructions in this user guide assume that these records exist. For more information about creating, updating, or editing records, see the *Oracle Utilities Meter Data Management Installation and Configuration Guide* and the *Data Manager User's Guide*.

What is this book?

The *Oracle Utilities Meter Data Management User's Guide* describes the Oracle Utilities Meter Data Management functionality, including the following:

- **Chapter 1**: **Oracle Utilities Meter Data Management Overview** provides an overview of the Oracle Utilities Meter Data Management application and the documentation provided with it.
- **Chapter 2**: **Working with the Oracle Utilities Energy Information Platform** describes how users work with the Oracle Utilities Energy Information Platform web interface, including information about general navigation and common controls. Also it describes how to run and view Oracle Utilities Meter Data Management reports.
- **Chapter 3**: **Meter Management** describes how users work with the Oracle Utilities Meter Data Management meter management functions, including Meters, Meter Configurations, and Validation Groups.
- **Chapter 4**: **Usage Management** describes how users work with the Oracle Utilities Meter Data Management usage management functions, including Usage Add/Edit and Usage Analysis.
- **Chapter 5**: **Operations** describes how users work with the Oracle Utilities Meter Data Management operations functions, including Open Usage Exceptions, Physical Meter Events, and Work Queue items.
- **Chapter 6**: **Revenue Protection Events** describes how users work with the Oracle Utilities Meter Data Management revenue protection events.
- **Chapter 7**: **Assets and Setup** describes how users work with Oracle Utilities Meter Data Management assets and setup data.
- **Chapter 8**: **Billing Determinant Calculations** describes how users work with Oracle Utilities Meter Data Management billing determinant calculation functions, including initiating calculations and viewing calculation results.
- **Chapter 9**: **Oracle Utilities Meter Data Management Reports** describes the reports provided with Oracle Utilities Meter Data Management.

Oracle Utilities Meter Data Management Components and Documentation

Oracle Utilities Meter Data Management comprises the following application components and documentation.

Oracle Utilities Meter Data Management

This is the web-enabled Oracle Utilities Meter Data Management application.

The *Oracle Utilities Meter Data Management User's Guide* (this book) describes how to use this application. The *Oracle Utilities Meter Data Management Installation and Configuration Guide* describes how to install and configure Oracle Utilities Meter Data Management.

Data Manager

Data Manager is the tool you use to view, edit, and update records in the Oracle Utilities Data Repository.

The *Data Manager User's Guide* explains how to use Data Manager to view and maintain data in the Oracle Utilities Data Repository.

Oracle Utilities Rules Language

The Oracle Utilities Rules Language is a powerful command language that defines business rules and specific items such as meter data validations and billing determinant calculations.

The *Oracle Utilities Rules Language User's Guide* and *Oracle Utilities Rules Language Reference Guide* describe the Oracle Utilities Rules Language and how it is used with Oracle Utilities products.

Batch Executables

Your installation of Oracle Utilities Meter Data Management comes with a set of command line programs that can be used to process records and data in batch mode.

The *Oracle Utilities Energy Information Platform Configuration Guide* describes the various batch files that are used with Oracle Utilities applications.

International and Multiple Currency Support

This section outlines international and multiple currency support in the Oracle Utilities Energy Information Platform, including:

- **Locales and Languages**
- **Date and Numeric Presentation**
- **Currency Presentation**
- **Multiple Currency Support**
- **File Formats**
- **Database Support**

Locales and Languages

Two fundamental concepts underlying international support in Oracle Utilities applications are **languages and locales**. Languages determine the specific language in which text labels and controls of an application appear. Locales determine the specific region or country in which the user is working. Specifically, locales are used to specify display and input formatting for:

- Date/time and numeric presentation, and
- Currency presentation

How a user selects a language and/or locale is determined by the type of application being used.

Web-enabled Products

For web-enabled products, a user's locale and language are selected from the **Locales** tab of the **Set Preferences** screen. The selected locale and language are stored in the user's security properties. The available locales on this screen are specified in the LOCALES.CFG.XML configuration file (see **Chapter 2**: **Configuration Files** in the *Oracle Utilities Energy Information Platform Configuration Guide* for more information). Locales included in the LOCALES.CFG.XML file must also be installed on the web server and be accessible from the Regional Settings Control Panel. If a selected locale is not installed on the web server, currency formatting and presentation may be incorrect.

If a user does not select a locale (or selects a locale of "None"), the default locale is the Server System Locale (defined by the operating system installed on the web server). Oracle Utilities recommends that all users specify a locale before using internationalized applications.

Client/Server Products

For client/server products, the user's locale is determined by the Regional Settings of the client and/or application server machine.

Languages

The language for client/server products is specified using a command line switch and/or a parameter in the LODESTAR.CFG file. See **Oracle Utilities Application Command Line Parameters** on page 4-11 in the *Oracle Utilities Energy Information Platform Installation Guide* for more information about command line parameters. See **LODESTAR.CFG** on page 2-2 in the *Oracle Utilities Energy Information Platform Configuration Guide* for more information about the LODESTAR.CFG file. At this time, available languages include English, French, German, and Italian.

Reports

For client/server applications, the locale for reports is determined by the Regional Settings of the machine on which the report is run.

For web-enabled applications, the locale for reports is based on the Server System Locale (defined by the operating system installed on the web server)

Languages

For client/server applications, the language that appears on reports is determined by the language of the application that generated the report, specified either by a command line parameter or a configuration file parameter.

For web-enabled applications, the language is specified by the Regional Settings of the machine on which the report is run, unless overridden by the LANGUAGE parameter in the LODESTAR.CFG file.

Date and Numeric Presentation

The display and input of dates and numbers is based on the selected locale.

Web-enabled products

Display formatting of both numbers and date/times is based on the user's selected locale.

Copy, cut, and paste operations are supported for all input controls. Required fields are identified by asterisks. Null values are represented by blank (empty) controls. Moving the mouse pointer over an input area displays sample formatting for that field.

Number input controls only accept formatting based on the user's selected locale. The only allowable characters include digits, decimal separator, and minus sign. Any other characters are filtered from input.

Date input controls only accept formatting based on the user's selected locale. Dates can either be keyed in or selected from a pop-up calendar control. All times are keyed in and based on 24 hour format (no AM or PM indicator).

Input validation occurs upon data entry.

Client/Server Products

Formatting for numbers and date/times is based on the locale determined by the regional settings of the client and/or application server machine. Date/time formatting can be overridden from the General Options tab of the Default Options dialog.

Reports

Display formatting of both numbers and date/times for reports is based on the Server System Locale on the machine on which the reports are run.

Currency Presentation

Currency information is stored in the LSCurrency table in the Oracle Utilities Data Repository. This table contains one or more currencies, each defined by a currency code, currency symbol, and formatting rules (such as the number of decimal places). Currency codes in this table use ISO-4217 codes. The LSCurrency table also indicates the Default currency for the database. See **LSCurrency** on page 3-3 in the *Oracle Utilities Energy Information Platform Configuration Guide* for more information about setting up the LSCurrency table.

Note: Although records in the LSCurrency table are not required, Oracle Utilities strongly recommends that at least one record with all properties specified be created and set as "Default". This will ensure consistent display of currency information.

Currency Presentation in Oracle Utilities Receivables Component and Oracle Utilities Quotations Management

Currency input and display is identical to that for numbers with two exceptions:

- A currency indicator is also displayed next to currency input controls and currency displays. The specific currency symbol displayed and the manner in which currency is formatted are determined in the following order:

    a. The currency associated with the account being viewed (from the LSCurrency field in the Account table).

    b. The default currency in the LSCurrency table. If there is no default currency, the first record in the LSCurrency table (sorted alpha-numerically by Currency Code).

    b. If the LSCurrency table is not present or does not contain any records, the currency and formatting of the Server System Locale (defined by the operating system installed on the web server),specified in the **HKEY_USERS\.DEFAULT\Control Panel\International** key in the Windows Registry on the web server.

- Currency formatting rules for the user's selected locale are overridden if specific formatting rules for the currency are stored in the LSCurrency table. Typically, the only formatting rules that would be overridden at the currency level would be the ISO code, symbol, and number of decimal places. This applies to Oracle Utilities Receivables Component reports as well, except that the initial locale formatting rules come from the regional settings of the machine on which the report is run.

Currency Presentation in Other Web-enabled Products

Currently, other web-enabled products do not require input of currency values.

Display of currencies is based on the formatting of the selected locale and of the default currency in the database (currency specific formatting always overrides locale specific formatting).

Enabling Display of International Currency Symbols

Display of international currency symbols requires the appropriate Encoding option is selected on Internet Explorer.

How to select encoding options:

1. Select **View-›Encoding** from the Internet Explorer menu bar.
2. Select the appropriate option from the list. For example, to enable displaying of the Euro symbol and other Western European currency symbols, select the **Western European (Windows)** option.

Currency Presentation in Client/Server Products

Client/server products do not require input of currency values.

Display of currencies is based on the formatting of the client machine's regional settings and of the default currency in the database. Currency specific formatting always overrides locale specific formatting. If the default currency in the database does not specify any formatting, the currency symbol is used for formatting. If the currency table does not exist or does not contain any records then the default currency is determined by the Regional Settings on the client/server machine. This applies to reports as well.

Multiple Currency Support

Multiple Currency Support allows for accounts with different associated currencies. This is accomplished through the presence of the Currency Code column on the Account, Journal Account, and Checking Account tables in the Oracle Utilities Data Repository. This column references records in the LSCurrency table

Multiple Currency and Oracle Utilities Receivables Component

All input screens which have amount fields on them indicate what currency type is expected as input.

All elements that represent a currency in Oracle Utilities Receivables Component XML structures have a CURRENCY attribute that indicates the corresponding currency type for the amount. The string values used for this attribute are the same as the Currency Code values in the LSCurrency table. On output, the CURRENCY attribute is set for the account as specified in the database. If the account's currency type is not specified in the database, the default currency is used.

A CURRENCY attribute (using the standard stem.tail notation) is supported for Oracle Utilities Receivables Component transaction identifiers to specify the currency type for the account.

On input, the CURRENCY attribute of all Oracle Utilities Receivables Component transactions is checked against the currency value of the account against which the transaction is being posted using the following rules:

1. If a currency type is specified for the account in the database, the transaction must indicate the same currency type or it is an error.
2. If a currency type is not specified for the account in the database, the transaction must indicate either no specific currency type or the default currency type for the database or it is an error.

All transactions that involve two or more accounts (such as Payment and Balance Transfers) validate that the currency types are the same for each account (no currency translation will occur). The credit/debit account pairs for each journal translation record are validated to ensure that they both have the same currency type. Only journal translation records that have credit/debit accounts with the same currency type as the account against which the transaction is being posted are used. Additional currency validations occur for payment files and refund checks.

Multiple Currency and Oracle Utilities Receivables Component Reports

Where applicable, Oracle Utilities Receivables Component reports are grouped by Currency Code.

Multiple Currency and Other Oracle Utilities Products

Oracle Utilities Billing Component, Oracle Utilities Rate Management and Data Manager reports display the Currency Code associated with each account where applicable. Reports that contain multiple currency types do not include the Summary Results page.

In Oracle Utilities Rate Management - Revenue Forecasting, the default currency type is used for all presentation of currency amounts, regardless of whether or not a specific currency has been indicated in the database for any accounts.

File Formats

Input/Output File Formats

Numbers and date/times in input and output files (such as files used with the PLIMPORT program) are independent from locale settings.

Non-English characters are supported in input/output files.

XML Formats

All dates, times, and numbers contained in XML files are represented using the standard formatting rules as defined by the W3C XML Schema Recommendation. For backward compatibility, previously accepted formats for dates and times will continue to be accepted on input, however, all output will use the XML Schema representation.

> **Note**: XML files created by the SAVE TO XML Rules Language statement are an exception. The date, time, and number formats in Rules Language generated XML files are based on the Rules Language configuration used to create them.

Non-English characters are supported in XML files

Database Support

In addition to the LSCurrency table and related columns in the Account, Journal Account, and Checking Account tables, database support for internationalization includes the addition of the COUNTRY column in the Address table and the change from ZIP Code to Postal Code on user interfaces.

What is Oracle Utilities Meter Data Management?

Oracle Utilities Meter Data Management provides functionality for handling large volumes of meter data to enable increased accuracy, flexibility and scalability. Key functional areas of the Oracle Utilities Meter Data Management application include:

- **Import of Usage Data**
- **Automatic Validation and Estimation**
- **Meter Data Maintenance**
- **Exception Management**
- **Billing Determinant Calculation**
- **Reporting**

Import of Usage Data

Usage data import into Oracle Utilities Meter Data Management is done via the Oracle Utilities Adapter component of the Oracle Utilities Energy Information Platform.

Usage data can be scalar (consumption) data, interval data, and Time of Use (TOU) meter data, and must be in the Oracle Utilities Meter Data (*.LSM) format. This XML format is described in the *Oracle Utilities Meter Data Management Installation and Configuration Guide*.

The **Usage Add/Edit** option on the Oracle Utilities Meter Data Management user interface also provides utilities that allow users to manually upload usage data, and to manually add consumption readings.

Automatic Validation and Estimation

Upon import of usage data, Oracle Utilities Meter Data Management automatically performs a series of critical and user-defined usage validations on the incoming data. These automated processes for validating, estimating or otherwise correcting invalid data include:

- Checking database constraints
- Checking meter identification (Meter ID, Channel ID, etc.)
- Verifying meter constants (meter multiplier, number of dials, etc.)
- Spike check
- Gap Check
- Overcounts
- Undercounts
- High/Low Usage checks

The Oracle Utilities Meter Data Management data estimation calculations are based on industry-standard validation, editing, and estimation (VEE) rules, and include point-to-point linear interpolation and average of selected reference days.

Oracle Utilities Meter Data Management also provides the ability to trigger estimation if a read is not received within a user-specified window of the scheduled time.

Usage Import Life Cycle

This section outlines the process usage data undergoes as it is imported into the Oracle Utilities Meter Data Management application.

- **Critical Validation**: Upon import, Oracle Utilities Meter Data Management performs critical validations on the data. Critical validations are validations that prevent data from being loaded into the Oracle Utilities Data Repository, such referential database integrity checks.
    - If the data passes all critical validations, Oracle Utilities Meter Data Management sets the Reading Category of the reading to RAW.
    - If the data fails any of the critical validations, it is rejected, and a usage exception is generated.
- **Usage Validation**: If the usage data passes the critical validations, Oracle Utilities Meter Data Management next performs any usage validations associated with the meter that corresponds to the usage (as defined in the Validation Groups and Meter Configuration tables).
    - If the data passes all usage validations, Oracle Utilities Meter Data Management sets the Reading Category of the reading to FINAL and the Reading Status to VALID. At this point the data is ready for use with other down-stream processes, such as pricing, billing, or settlement.
    - If the data fails any of the usage validations, a corresponding exception is generated, and Oracle Utilities Meter Data Management sets the Reading Category of the reading to STAGING and the Reading Status to FAILED. Users can then use the **Usage Add/ Edit** and **Usage Analysis** features to view and/or manually correct and re-validate the usage.

Note: Only Oracle Utilities Meter Data Management Exceptions of Exception Type "ERROR" set the Reading Category of the reading to STAGING and the Reading Status to FAILED. Oracle Utilities Meter Data Management Exceptions of Exception Type "INFORMATIONAL" allow Oracle Utilities Meter Data Management to set the Reading Category of the reading to FINAL and the Reading Status to VALID. See **Usage Exceptions** on page 5-2 for more information about Oracle Utilities Meter Data Management Exceptions.

Meter Data Maintenance

After usage data has been imported and validated, Oracle Utilities Meter Data Management also provides tools for maintaining meter usage and asset data.

Usage Data

Usage data maintenance features of Oracle Utilities Meter Data Management include:

- Storage of all historical versions of meter reads and audit trails on edits.
- Screens for adding and editing of scalar, interval, and TOU meter data
- Cumulative and Time of Use (TOU) meter read analysis tools integrated with interval data analysis tools
- Ability to view and assign a load profile to a meter. If a profile is not available for consumption and TOU meters, assume a flat distribution.
- Ability to overlay TOU periods on interval readings
- Ability to group/roll-up usage by Account or Service point
- Ability to promote historical versions of meter readings to "current" status
- Ability to export usage data

Meter Assets

Meter asset maintenance features of Oracle Utilities Meter Data Management include:

- Meter inventory management capability for managing meter returns, exchanges and other physical inventory functions
- Storage of current and historical meter inventory data
- Support for basic meter installs and change outs.
- Ability to define meter read cycles and schedules

Exception Management

Oracle Utilities Meter Data Management uses the Work Queues component of the Oracle Utilities Energy Information Platform to provide integrated exceptions management for more efficient work management.

Exceptions and Work Queues functions of Oracle Utilities Meter Data Management include:

- Generation of Work Queue exceptions for critical failures
- Generation of warnings that allow processes to continue
- Work Queue functionality to correct and re-submit failed meter reads
- Logging of Revenue Protection Events (e.g. Tamper events, Tilts, Reversed Meters, and Bleep Counts)

Billing Determinant Calculation

Oracle Utilities Meter Data Management includes the ability to calculate billing determinants at the Account, Service Point, and Meter level. Billing determinant calculation functionality of Oracle Utilities Meter Data Management include:

- Initiation of billing determinant calculations (via batch, web service, or user interface)
- Review of calculation requests
- Viewing of calculation requests

Reporting

Oracle Utilities Meter Data Management also includes several operational reports, including reports that track:

- Detail and Summary Work Queue Activity
- Revenue Protection Events
- Meter Population Summary by Meter Read System or Read Cycle
- Process Control
- Missing Reads
- Usage on Inactive Meters
- Tamper Alerts

Working with Oracle Utilities Meter Data Management

This section describes some typical tasks performed when using the Oracle Utilities Meter Data Management application, including:

- **Meter Management**
- **Usage Management**
- **Operations**
- **Revenue Protection Events**
- **Oracle Utilities Meter Data Management Assets and Setup Data**
- **Billing Determinants**
- **Run and View Reports**

Meter Management

Meter Management involves creating and maintaining meters, meter configurations, and validation groups for use with the Oracle Utilities Meter Data Management application.

- **Meters** represent logical meters used to record interval usage and consumption.

  A Note About Physical and Logical Meters: Physical meters are the devices used to measure usage. Logical meters are used to distinguish between the different types of usage recorded by a single physical meter. More than one logical meter can be associated to a single physical meter. For example, a physical meter might be used to measure multiple registers of usage data. To represent this in Oracle Utilities Meter Data Management, you would create a single Physical Meter record for the actual physical device, and two Oracle Utilities Meter Data Management Meter records: one to record interval usage, the other to record consumption.

- **Meter Configuration** records define specific characteristics of a meter and its use within the Oracle Utilities Meter Data Management application. Characteristics defined by meter configuration records include read cycles, time of use schedules, validation groups, profile meters, meter multipliers, number of dials, meter offset, seconds per interval, and other characteristics.

- **Validation Groups** represent groupings of validations and operations that are applied to meter readings in the Oracle Utilities Meter Data Management application.

See **Chapter 3**: **Meter Management** for more information on working with meter management functions.

Usage Management

Usage management involves viewing, adding, and editing meter readings in the Oracle Utilities Meter Data Management application. There are two primary usage management functions:

- **Usage Add/Edit** allows users to manually add and/or edit meter readings.
- **Usage Analysis** allows users to view usage at the meter level, similar to the way in which Interval Data Viewer component of the Oracle Utilities Energy Information Platform allow users to view series of interval data cuts.

See **Chapter 4**: **Usage Management** for more information on working with usage management functions.

Operations

Operations functions involve viewing and/or resolving usage exceptions, physical meter events, and work queue items related to Oracle Utilities Meter Data Management operations.

- **Usage Exceptions** are usage-related exceptions and events.
- **Physical Meter Events** are events related to physical meters that record interval and consumption usage.
- **MDM Work Queue** items are warnings or error messages generated during Oracle Utilities Meter Data Management processing.
- **My WQ Items** are open work queue items related to Oracle Utilities Meter Data Management that are currently assigned to the current user.

See **Chapter 5**: **Operations** for more information on working with Oracle Utilities Meter Data Management operations functions.

Revenue Protection Events

Revenue Protection Events are exceptions and events related to revenue protection, such as Meter Alerts, Tampering, Reverse Rotation events. These also include results of business rules that have lower-than-expected usage, and average daily usage (ADU) tolerance checks that compare the ADU for a meter reading to that of an assigned profile meter.

See **Chapter 6**: **Revenue Protection Events** for more information on working with Oracle Utilities Meter Data Management revenue protection events-related functions.

Oracle Utilities Meter Data Management Assets and Setup Data

Oracle Utilities Meter Data Management assets include physical assets related to meters, such as physical meters, meter read systems, and meter manufacturers.

- **Physical Meters** are the actual physical meters that record usage and consumption.
- **Physical Meter Location History** are records that identify where physical meters are located.
- **Meter Read Systems** are the systems used for collection of meter reads.
- **Meter Manufacturers** are manufacturers of physical meters used with the Oracle Utilities Meter Data Management application.

Oracle Utilities Meter Data Management setup records define types of meters and meter events, meter inventory data, as well as meter read cycle data. This includes:

- **Meter Exception Codes** are codes that represent specific exceptions that can occur during Oracle Utilities Meter Data Management processing such as validation and estimation.
- **Meter Events** are specific meter-related events.

- **Meter Event Types** are specific types of meter-related events.
- **Physical Meter Statuses** are specific statuses that can apply to physical meters.
- **Physical Meter Locations** are locations where physical meters might be stored.
- **Physical Meter Location Types** are specific types of locations where physical meters are stored.
- **Physical Meter Types** are specific types of physical meters.
- **Read Cycle Frequencies** are the frequencies (weekly, monthly, etc.) at which meters within a given read cycle are read.
- **Read Cycles** are meter read cycles, which determine when specific meters are read.
- **Read Cycle Dates** are the dates on which meters associated with a meter read cycle are read.

See **Chapter 7**: **Assets and Setup** for more information on working with Oracle Utilities Meter Data Management assets and setup data.

Billing Determinants

Billing Determinants functions involve initiating calculations and viewing requests and calculation results.

- **Initiating Billing Determinant Calculations** allows users to initiation billing determinant calculations.
- **Searching and Viewing Billing Determinant Calculation Requests** allows users to search and view billing determinant calculation requests.
- **Searching and Viewing Billing Determinant Results and Values** allows users to search and view billing determinant calculation results.
- **Viewing Scheduled Billing Determinant Calculation Jobs** allows users to view scheduled billing determinant calculation requests.

See **Chapter 8**: **Billing Determinant Calculations** for more information on working with Oracle Utilities Meter Data Management billing determinants functions.

Run and View Reports

Running and viewing reports allows users to produce the following reports:

- **MDM Adapter Interface Status Report**: displays the status of all incoming files processed by the Energy Information Platform Adapter.
- **MDM Closed WQ Detail Report**: displays details for all Oracle Utilities Meter Data Management work queue items that have been closed.
- **Meter Population Summary by Meter Read System Report**: displays details for meters related to specific meter read systems.
- **Meter Population Summary by Read Cycle Report**: displays details for meters related to specific read cycles.
- **MDM Missing Reads Report**: displays information about all meters that have not been read per the read schedule.
- **MDM Physical Meter Events Report**: displays details for all physical meter events.
- **MDM Revenue Protection Usage Events Report**: displays the statuses of all revenue protection events.
- **MDM Usage Exceptions Report**: displays the status of all usage exceptions/events.

- **Process Control Summary Report**: summarizes all payloads and all transactions processed for a user-specified time period.
- **Process Control Detail Report**: displays details for all payloads and all transactions processed for a user-specified time period.

See **Chapter 9**: **Oracle Utilities Meter Data Management Reports** for more information on reports.

Oracle Utilities Meter Data Management Glossary

ADU

The Average Daily Usage for a meter.

Billing Determinants

Calculated values based on usage readings, used in billing calculations. For example, the total energy consumption for a meter reading.

Consumption

A measurement of the amount of energy consumed for a given meter for a given time period. Sometimes also referred to as scalar usage.

Critical Validations

Validations that prevent data from being loaded into the Oracle Utilities Data Repository, such as database referential integrity checks.

Demand Response

Actions that result in short-term reductions in peak energy demand.

Estimations

Operations that calculated estimated values for usage readings when data is partially (or entirely) missing.

Final Usage

Usage that has passed all **Critical Validations** and **Usage Validations** and is ready for use by other down-stream processes.

Logical Meter

Used to distinguish between the different types of usage recorded by a single physical meter. More than one logical meter can be associated to a single physical meter. For example, a physical meter might be used to measure both interval usage and consumption.

Meter

The generic term for a measurement type, and refers to scalar (consumption) meters, interval recorders, and Time Of Use (TOU) meters.

Physical Meter

The actual physical recording devices that record interval usage and consumption.

Raw Usage

Usage data that has passed all **Critical Validations**, but to which **Usage Validations** and **Estimations** have not been applied.

Replacement Usage

A new meter reading that replaces an existing reading.

Staging Usage Status

Usage that has failed one or more **Usage Validations** and is being held for manually intervention.

Usage Validations

Operations that validate specific characteristics of usage data before allowing insertion into the Oracle Utilities Data Repository. Examples include comparison of usage to specific tolerances (such as high/low), verifying the correct unit of measure (UOM) or Seconds Per Interval (SPI).

Time of Use

Time of Use (TOU) meters record usage of electricity at certain times of the day over the length of a billing or meter reading period. The TOU function within the Oracle Utilities Meter Data Management application has a pre-selected number of rate "bins" or registers. Each rate bin accumulates daily energy consumption with no specific time stamp, except that the consumption was recorded during a predetermined and pre-programmed time period.

Chapter 2

Working with the Oracle Utilities Energy Information Platform

This chapter describes how you work with the Oracle Utilities applications. This includes:

- **Starting the Application and Logging In**
- **Navigating The Oracle Utilities Energy Information Platform**
- **Searching, Viewing and Entering Data in the Oracle Utilities Energy Information Platform**
- **Run Reports**
- **View Reports**

Starting the Application and Logging In

You log on to Energy Information Platform using Microsoft Internet Explorer.

How to log in:

1. Start the application by double-clicking the shortcut icon, or entering the URL for the Oracle Utilities Energy Information Platform in the **Address** field on the Internet Explorer window.

   Note: Contact your system administrator for the URL for the Oracle Utilities Energy Information Platform.

2. The Login screen appears.

3. Enter your user ID in the **User ID** field, enter your password in the **Password** field, and click **Login**. The Energy Information Platform home dashboard screen appears in the browser.

Navigating The Oracle Utilities Energy Information Platform

This section describes the framework of the Oracle Utilities Energy Information Platform and how to use the menus and icons to navigate between functions including:

- **Framework**
- **Menus**
- **Navigation**

Framework

The Energy Information Platform is a web-based framework, consisting of the Top menu, the Left menu, and the Main Workspace.

Top Menu

The Top menu displays a number of menu items, including:

- **Home**: Returns the user to the home dashboard screen.
- **Help**: Expands to display the following:
  - **Content and Index**: Opens **Online Help** window for the current option or function (if applicable).
  - **Online Support**: Opens the Oracle Utilities website in the Main Workspace.
  - **About**: Opens the About dialog, which displays the user's current preferences and the software version installed.
- **Logout**: Logs the user out of the Energy Information Platform, ends the current session, and returns the user to the Login screen.

Left Menu

The Left menu displays menu options available to the user. This menu can be set to one of two modes: the Main menu or the Data menu. The bottom of the Left menu displays a number of icons. The meanings of these icons are as follows:

Icon	Description
	**Default Menu**: Changes the Left menu from the **Main Menu** to the **Data Menu**.
	**Default Menu**: Changes the Left menu from the **Data Menu** to the **Main Menu**.
	**Current Data Base**: Opens the **Set Preferences** screen. When you hover the mouse over this icon, a tool tip opens, displaying currently selected data source.
	**Security Administration**: Opens the **Security Administration** screen.
	**Home**: Returns the user to the home dashboard screen.
	**Change Theme**: Opens the Change Theme dialog.

Main Menu

The Main menu opens by default, and lists the functions available from the Energy Information Platform. Clicking on a menu item displays the corresponding screen in the Main Workspace on the right. A down-pointing arrow at the left of a menu choice indicates that the choice has associated submenu items below it. To open the submenu list, click on the arrow. The arrow becomes a right-pointing arrow, and the submenu options are displayed below the menu item.

> **Note**: The options that appear on the Main menu are dependent on the specific set of products licensed and installed.

Data Menu

The Data menu lists database tables accessible via the Data Navigator, which allows users to search, add, view, and edit database records and tables in the Oracle Utilities Data Repository. See **Chapter 8**: **Searching and Viewing Data in the Oracle Utilities Data Repository** in the *Oracle Utilities Energy Information Platform User's Guide* for more information about Data Navigator.

Main Workspace

The center of the window is occupied by the Main Workspace, which holds the screen corresponding to the selected function.

Menus

As noted above, the Main menu includes a number of submenus, each relating to a specific activity or product. Oracle Utilities Meter Data Management uses the following menus:

Oracle Utilities Meter Data Management Menu

The Oracle Utilities Meter Data Management menu includes the following options:

- **Meter Management**: Expands to display the Meter Management menu, which includes the following options:
  - **MDM Meters**: Opens the **MDM Meter** screen.
  - **Meter Configuration**: Opens the **Meter Configuration** screen.
  - **Validation Groups**: Opens the **Validation Group** screen.
- **Usage Management**: Expands to display the Usage Management menu, which includes the following options:
  - **Usage Add/Edit**: Opens the **Usage Add/Edit** screen.
  - **Usage Analysis**: Opens the **Usage Analysis** screen.
- **Operations**: Expands to display the Operations menu, which includes the following options:
  - **Usage Exceptions**: Opens the **Usage Event/Exception** screen.
  - **Physical Meter Events**: Opens the **Physical Meter Event History** screen.
  - **MDM Work Queue**: Open the **Work Queue Items** scree on the Open Item Details tab, displaying open work queue items with a Product code of "MDM" (Meter Data Management).
  - **My WQ Items**: Opens the **My Work Queue** screen.
  - **Process Control Interface**: Opens the **Process Control Interface** screen.
- **Revenue Protection Events**: Expands to display the Revenue Protection Events menu, which includes the following options:
  - **Search Events**: Opens the **Search Revenue Protection Event** screen.
- **Assets**: Expands to display the Assets menu, which includes the following options:

- **Physical Meters**: Opens the **Physical Meter** screen.
- **Physical Meter Location History**: Opens the **Physical Meter Location History** screen.
- **Meter Read Systems**: Open the **Meter Read System** screen.
- **Meter Manufacturers**: Opens the **Meter Manufacturer** screen.

- **Setup**: Expands to display the Setup menu, which includes the following options:
  - **Meter Exception Codes**: Opens the **MDM Exception Codes** screen.
  - **Meter Events**: Open the **Meter Event** screen.
  - **Meter Event Types**: Opens the **Meter Event Type** screen.
  - **Physical Meter Statuses**: Opens the **Physical Meter Status** screen.
  - **Physical Meter Locations**: Opens the **Physical Meter Location** screen.
  - **Physical Meter Location Types**: Opens the **Physical Meter Location Type** screen.
  - **Physical Meter Types**: Opens the **Physical Meter Type** screen.
  - **Read Cycle Frequencies**: Open the **Read Cycle Frequency** screen.
  - **Read Cycles**: Open the **Read Cycle** screen.
  - **Read Cycle Dates**: Open the **Read Cycle Date** screen.
- **Billing Determinants**: Expands to display the Billing Determinants menu, which includes the following options:
  - **Initiation**: Opens the **Initiate Billing Determinants Generation** screen.
  - **Requests**: Opens the BD Requests search screen.
  - **Results and Values**: Opens the Bill History search screen.
  - **Scheduled Jobs**: Opens the **Scheduled Jobs** list screen.
- **WQ Items**: Opens the **Work Queue Item Search Result** screen displaying open work queue items with a Product code of "MDM" (Meter Data Management).
- **My WQ Items**: Opens the **My Work Queue** screen (Groups tab).
- **Run Reports**: Opens the **Run Reports** screen, displaying reports associated with Meter Data Management (Product code "MDM").
- **View Reports**: Opens the **View Reports** screen, listing previously run reports associated with Meter Data Management (Product code "MDM").

Navigation

Oracle Utilities recommends using links and menu options when moving between screens in the Energy Information Platform. Use of the Internet Explorer **Forward** and **Back** buttons can produce unexpected results.

Searching, Viewing and Entering Data in the Oracle Utilities Energy Information Platform

This section describes how users search, view, and enter data in the Energy Information Platform, and includes:

- **Searching and Viewing Data**
- **Entering Data**

Searching and Viewing Data

This section provides specific information about searching and viewing data in the Energy Information Platform, including:

Searching

When searching records, users enter data in each of the fields they wish to use in their search. See **Entering Data** below for more information about how to enter specific types of data. If a search returns only one record, the record itself is displayed instead of the list screen.

Specifying How Results are Sorted

To specify how search results are sorted, click the **Sort by** plus ("+") sign. This opens a pop-up window that lists the fields that can be used to sort the search results.

To sort by a specific field(s), check the corresponding checkbox(s). By default, records are sorted in ascending order (denoted by the arrow). To sort records in descending order, click the arrow. The arrow will be replaced by the arrow.

To change the order by which the search results are sorted, click on the area and move the field to the appropriate position in the list.

After specifying how the results are to be sorted, click the **Sort by** minus ("-") sign to close the list.

For example, if a user were searching accounts and wanted to sort the results first by Customer ID in ascending order, and then by Start Time in descending order, the user would first check the Customer ID checkbox, then check the Start Time checkbox and click the arrow.

Note that sorting settings are reset each time you perform a search.

Viewing Search Results

Search results appear on a list screen that displays the records that match the search criteria. Each item on the list contains the entire record. Use the horizontal scroll bar to view columns that appear to the right of the list screen.

Sorting Search Results

Search results are sorted as specified by the user (see **Specifying How Results are Sorted** above). The direction (ascending or descending) in which each column is sorted is displayed at the top of each column.

Columns sorted in ascending order display a blue arrow pointing up.

Columns sorted in descending order display a red arrow pointing down.

To change the direction in which the results are sorted, click the up (ascending) or down (descending) arrow at the top of the appropriate column on the list screen.

To continue the above example, if a user had searched accounts and sorted the results first by Customer ID in ascending order, and then by Start Time in descending order, the Customer ID column would display a blue arrow pointing up ( ) and the Start Time column would display a red arrow pointing down ( ).

Locking Columns

Some columns on search results list screens can be locked, or "pinned" in place, keeping the identity of the search results visible at all times. As the user scrolls to the right using the horizontal scroll bar, locked columns remain in place, while non locked columns scroll "beneath" the locked column(s).

Columns that can be locked have a pin button ( ) on them.

To lock a column, click the pin button ( ). This rotates the pin button, indicating that the column is locked.

To unlock a column, click the pin button ( ) again.

Entering Data

This section provides specific information about entering data in the Energy Information Platform screens, including:

- **Entering Date and Date/Time Values**
- **Entering Lookup Values**
- **Selecting Values from Drop-Down Lists**
- **Specific Data Formats**

Entering Date and Date/Time Values

Date and Date/Time fields store dates and/or datetimes, such as Start Date, Start Time, and Bill Month values. To enter date/time values, either type the date and time manually, or click the arrow button ( ) to the right of the field and select the date using the calendar control.

The calendar control displays the current month when opened. Click the appropriate day to select it. To change the month, click the arrows on either side of the month displayed. To change the year, click the arrows on either side of the year displayed. To select the current date, click **Today**. To clear the date value, click **Clear**.

> **Note**: When entering dates manually, use the four digit format (i.e. "2004").
>
> **Note**: When you select a date using the calendar control, the time defaults to 00:00:00.

Entering Lookup Values

Lookup values are references to records in other tables in the Oracle Utilities Data Repository, including both lookup records such as Operating Company and Jurisdiction records, and parent records such as Customer or Account records. When populated, lookup fields display the identity of the referenced record. To select a lookup, click the **Browse** button ( ). This opens a dialog window that lists all the records in the corresponding table in the Oracle Utilities Data Repository.

If there is more than one page of records, you can move between pages using the and . buttons. Use the button to return the first page, and the button to navigate to the last

page. To change the number of results that appears on each page, enter the number in the **Rows** field and press the **Enter** key.

To search for a specific record, click **Search**. The dialog displays a search screen.

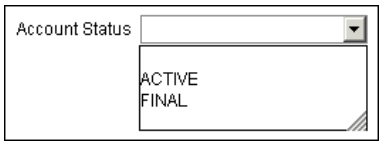
Enter the appropriate parameters for your search and click **Search**. The dialog will display a list of records that match the search criteria.

Click the **[...]** link to select the appropriate record. The lookup field is automatically populated.

Selecting Values from Drop-Down Lists

Drop-down lists allow users to select a value from a pre-populated list, and can contain either pre-set values or values from tables in the Oracle Utilities Data Repository.

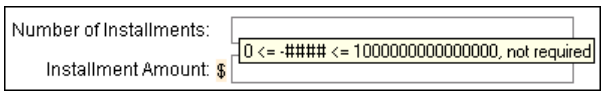
To select a value from a drop-down list, click the arrow next to the field. This opens a lists that includes all the values available.



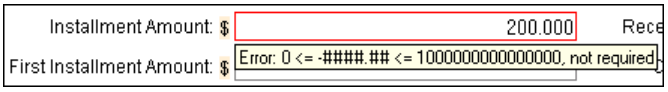
If one or more of the values is longer than the default size of the list, click the lower right corner of the list and resize the list as necessary.

Specific Data Formats

Some fields on some screens of the Energy Information Platform require that data be entered in a specific format. This most often applies to currency and date fields, but can also apply to other number fields and other types of data. Moving the mouse pointer over the icon displays a tooltip that contains the correct format for the field.



If data is entered in an incorrect format, the border of the field turns red indicating that there is an error in the data in the field. Moving the mouse pointer over the field displays a tooltip that describes the correct format for the field.



Required Fields

Fields that are required are indicated by an asterisk (*).

Currency Fields

Currency fields are indicated by a currency symbol to the left of the field.

Run Reports

The **Run Reports** option displays reports available through the Energy Information Platform Reporting Framework. From this screen, users can select and run reports. Each product has its own **Run Reports** option that displays reports associated with that product. For example, the Oracle Utilities Billing Component list displays billing reports, while the Oracle Utilities Receivables Component reports list displays it's reports.

How to run reports:

1. Select the **Run Reports** option from the appropriate menu (Tools and Utilities, Work Queues, Billing, Financials, etc.). The Run Reports screen opens.

   The Run Reports screen displays the following information for each report:

   - **Report Name**: The name of the report.
   - **Description**: A description of the report.
   - **Priority**: The priority of the report (High, Medium, or Low).
   - **Type**: The type of report (PLBX, LSRate (Oracle Utilities Rules Language), Active, or BIPublisher).
   - **Output Format**: The output format for the report (applies to reports of type "BIPublisher" only).
   - **Creation Date**: The date the report template was created.
   - **User**: The User ID who created the report template.
   - **Generate ASP**: A flag that indicates if the report framework generates an ASP parameters page for the report.

2. Select the report you wish to run by clicking the **Report Name** link from the list.

   The **Enter Report Parameters** screen opens displaying the report parameters for the selected report.

3. Enter the parameters for the report as appropriate.

   The **Report Title** field is the title that appears on the **View Reports** screen when the report is run.

4. Select the **Priority** for the report. This determines the priority (High, Medium, or Low) in which the report will be generated.

5. Uncheck the **Shared Report** checkbox if you wish to make the results of the report private. If you leave this checkbox checked, the report results will be available to all users.

6. Click **Run** to run the report. Click **Schedule Report** to schedule the report using the Schedule Process screen (see **Scheduling Reports** below, for more information). When the report is complete, the report opens in the appropriate viewer (Active, etc.). In addition, the report is also listed on the **View Reports** screen.

How to search reports:

1. Click **New Search** on the Run Reports screen. The Run Reports search screen appears.

   You can search based on the Report Name, Report Type, User ID (who created the report or who last updated the report), Output Format, Creation Date, Priority, Report Category, Product, or the report Description.

   You can search for reports whose creation dates are Less Than (<), Greater Than (>), Less Than or Equal To (<=), or Greater Than or Equal To (>=) the supplied date by selecting the appropriate operand from the drop-down list.

You can use the percent sign ("%") as a wildcard character when entering values in any of the text fields. For instance, if you want to search for all reports whose name begins with the letter G, you could enter "G%" in the Name field. You can use this wildcard before or after specified letters or numbers (i.e. you would use %t to search for all reports whose names end with the letter t, etc.).

Note that account Report Names, User IDs, and Descriptions are **case-insensitive**. For example, there is no difference between the "WQAging" and "wqaging" report names.

2. Specify how the search results are displayed.
   - Select the manner in which the results are sorted from the **Sort By:** drop-down list. You can sort the results by Creation Date, Description, Report Name, Report Type, or User ID.
   - Specify how many results should appear on each page in the **Page Length** field.
3. Click **Search** to perform the search. To clear all the search fields, click **Reset**.
4. The search results appear on the Run Reports screen.

Scheduling Reports

The Schedule Process screen allows users to define a schedule for running processes unattended.

How to schedule a process:

1. Click **Schedule** (or **Schedule Report**). The Schedule Process screen opens.
2. Enter the **Start Time** for the scheduled process by entering the date and time manually or clicking the arrow and select the date using the calendar control and typing the time manually. See **Entering Date and Date/Time Values** on page 2-8 for more information about using the calendar control.

   Note: The **Server Time** displayed above the Start Time field is the current time of the web server running the scheduler, including both the location and Time Zone where the server is located. Scheduled processes run based on the server time, not the time on the client machine.
3. Select a **Recurrence Pattern** for the scheduled process. You can select one of the following:

   None: The scheduled process runs only once at the specified start time. **Note**: Scheduled processes with a recurrence pattern of None ignore Business Calendars and will run on non-business days.

   Intra Daily: The scheduled process runs multiple times, from as frequent as once every 15 minutes to once every several hours. To base the recurrence on a number of minutes, select the **Every x minutes** radio button and select the number from the **Minutes** drop-down list. To base the recurrence on a number of hours, select the **Every x hours** radio button and enter the number of hours in the text box. Intra Daily processes may run throughout a single day or may span multiple days.

   Daily: The scheduled process runs once per day or once per number of days. To base the recurrence on a number of days, select the **Every x days** radio button and enter the number of days in the text box. To set the scheduled process to run every weekday, check the **Every weekday** radio button.

   Weekly: The scheduled process runs once or more per week (or number of weeks) on specified days. Enter the number of weeks in the **Recur every x week(s) on** text box, and check the specific days of the week on which the process should run. For example, to schedule a process to run on Monday and Wednesday every two weeks, you would enter 2 in the **Recur every x week(s) on** text box and check the Monday and Wednesday checkboxes.

   Monthly: The scheduled process runs once per month or once per number of months. A monthly recurrence can be based on either a specific day of the month (such as the the 10th

day of the month), or a specific type of day (such as the 2nd Friday of the month). To base the recurrence on a specific day, select the **Day x of every x month(s)** radio button and enter the specific day and number of months in the text boxes. To base the recurrence on a specific type of day, select the **The x x of every x month(s)** radio button and select the appropriate number (First, Second, Third, Fourth, or Last) and day (Sunday through Saturday) from the drop-down lists and enter the number of months in the text box.

Important Note: Each execution of a recurring scheduled process uses the original parameters entered for the process.

4. Set the **Range of Recurrence** for the scheduled process. This specifies how many times the scheduled process will run (based on the specified recurrence pattern). There are three options:

   - **No end date**: To specify no ending date for the recurrence, select the **No end date** radio button.
   - **End after occurence**: To specify that the recurrence ends after a predetermined number, select the **End after occurrence** radio button and enter the number of recurrences in the text box.
   - **End by**: To specify a date on which to end the recurrences, select the **End by** radio button and enter the date and time by which the recurrence should end. Enter the date and time manually or click the arrow and select the date using the calendar control and type the time manually. See **Entering Date and Date/Time Values** on page 2-8 for more information about using the calendar control.

5. Set any applicable **Recurrence Exceptions** for the scheduled process. Recurrence exceptions define which business calendar, if any, is used in scheduling and how to handle processes scheduled to run on non-business days. There are two options:

   - **Business Calendar**: To schedule the process using a business calendar, click the Browse button (...). This opens a dialog window that lists all the available Business Calendars. Click the **[...]** link to select the appropriate calendar. The field is automatically populated.
   - **Roll to next business day**: Check this checkbox to specify that a process scheduled to run on a non-business day is rolled forward to the next business day. If the process is already scheduled to run on the next business day, a new process is NOT scheduled.

   Note: When using a Business Calendar, if the Start Time entered for a process is later than the last date in the Business Calendar, an error will be returned. Also, for scheduled processes with the No End Date option selected, occurrences that would have occurred on dates later than the last date in the Business Calendar will not occur, and do not appear on the View Reports screen.

View Reports

The **View Reports** option displays previously run reports available through the Energy Information Platform Reporting Framework, including other processes such as uploading data via the Upload Usage option. From this screen, users can view and delete reports. Each product has its own **View Reports** option that displays reports associated with that product. For example, the Oracle Utilities Billing Component View Reports screen displays billing reports, while the Oracle Utilities Receivables Component View Reports screen displays it's reports.

How to view reports:

1. Select the **View Reports** option from the appropriate product menu (Tools and Utilities, Work Queues, Billing, Financials, etc.) The View Reports screen opens.

   The View Reports screen displays the following information for each report:

   - **Status Icon**: An icon that displays the status of the report. If an output format was specified for the report, the icon indicates the output format. See **Report Icons** for more information.
   - **Run/Schedule Time**: The time the report was run or is scheduled to run.
   - **Report Title**: The title of the report, specified when the report was run. For LSRate (Oracle Utilities Rules Language) reports, this column will display the name of the Report Template used to generate the report, unless specified using the SETREPORTTITLE Rules Language function.
   - **Priority**: The priority of the report (High, Medium, or Low).
   - **Type**: The type of report (PLBX (Oracle Utilities Billing Component), LSRate (Oracle Utilities Rules Language), Active, or BIPublisher).
   - **User**: The user ID of the user who ran the report.
   - **Progress**: The current percentage of the report instance that has been generated, from 0 to 100 percent.
   - **Shared**: A flag that indicates if the report is shared by all users or is accessible only by the user who ran the report.
   - **Base**: A flag that indicates if the report is provided by Oracle Utilities or is a custom report.
   - **Process**: The (machine) name of the server on which the report was executed.
   - **Account Name**: The name of the account associated with the report, if applicable.
   - **Account ID**: The ID of the account associated with the report, if applicable.
2. To view a specific report, click the **Report Title** link for the report. The selected report opens in the appropriate viewer.
3. To refresh the contents of the screen, click **Refresh Periodically**. To have the screen continually refresh its contents, check the **Refresh Periodically** checkbox.

   Note: The current state of the Refresh Periodically checkbox (selected or not) is stored in the user's settings, and is used as the default setting when subsequently opening this screen.

How to delete reports:

1. Check the checkbox next to the reports(s) to delete. To select all reports, check the top check box.
2. Click **Delete**.

How to search reports:

1. Click **New Search** on the View Reports screen. The View Reports search screen appears.

You can search based on the Report Title, Report Type, User ID (who created the report), Output Format, Creation Date, Report Category, or Product.

You can search for reports whose creation dates are Less Than (<), Greater Than (>), Less Than or Equal To (<=), or Greater Than or Equal To (>=) the supplied date by selecting the appropriate operand from the drop-down list.

You can use the percent sign ("%") as a wildcard character when entering values in any of the text fields. For instance, if you want to search for all reports whose name begins with the letter G, you could enter "G%" in the Name field. You can use this wildcard before or after specified letters or numbers (i.e. you would use %t to search for all reports whose names end with the letter t, etc.).

Note that account Report Titles, User IDs, and Descriptions are **case-insensitive**.

2. Specify how the search results are displayed.
   - Select the manner in which the results are sorted by clicking the **Sort by** plus ("+") sign. See **Specifying How Results are Sorted** on page 2-7 for more information.
   - Specify how many results should appear on each page in the **Page Length** field.
3. Click **Search** to perform the search. To clear all the search fields, click **Reset**.
4. The search results appear on the View Reports screen.

Report Icons

The icon listed next to each report indicates the status of the report. The meanings of these icons are as follows:

Icon	Description
	**Report Starting**: Report processing is starting.
	**Report in Process**: Report processing
	**Report Complete**: Report processing is complete.
	**Report Complete** (Adobe Acrobat format): Report processing is complete.
	**Report Complete** (Microsoft Excel format): Report processing is complete.
	**Report Complete** (Microsoft Word format): Report processing is complete.
	**Report Complete** (Rich Text format): Report processing is complete.
	**Report Complete** (Comma Separated Values format): Report processing is complete.
	**Report Scheduled**: Report is scheduled to run at a future time. To view scheduling details, click the arrow in the far right column. To edit the schedule, click **Edit**.
	**Report Reminder**: Indicates that a scheduled report is due to run in 15 minutes or less.

Icon	Description
	**Report Error**: One or more errors or warnings associated with the report. To view the error, click the Error icon.

Viewing Oracle BI Publisher Reports

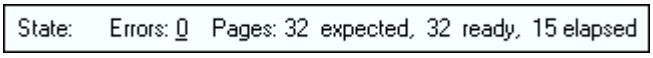
When you select an Oracle BI Publisher Report, the report opens in a viewer based on the output format defined for the report. For the default output formats, this includes:

- Adobe Acrobat
- Microsoft Excel
- Microsoft Word (for MS Word and Rich Text Format reports. If Microsoft Word is not installed, Rich Text Format reports open in the installed application (if any) associated with the *.rtf file extension).

Viewing Oracle Utilities Rules Language Reports

When you select a Oracle Utilities Rules Language Report (one with a Type of LSRate), the report opens in the Report view screen.

The **State** section above the top left corner of the report displays the state of the report, including the number of Errors, the number of Pages expected and ready, and the elapsed time (in seconds) it took for the report to run.



The **From:** and **To:** fields above the top right corner of the report show the current pages displayed. The **From:** field displays the current page. The ◀ and ▶ buttons and the field between them are used to navigate the report. The field between the buttons defines how many pages display in the report window at a time. The default is 1. To display more than one page at a time, enter the number of pages you wish to view in the field.

Emailing Reports

You can also email reports from the View Reports screen. This allows users to distribute reports to other parties via email.

Note: The Send Email function requires the presence of the LSRELAY.CFG.XML file in the C:\LODESTAR\CFG directory on the web server computer. Contact your system administrator for more information about this file.

How to email a report:

1. Select the report (or reports) you wish to send via email and click **Send Email** on the View Reports screen.

   The Send Email screen opens.

2. Select a **From** address from the drop-down list. This list is based on available records in the From Addresses table. If there are no available records in the From Addresses table, the current user's email address is populated (if provided on the User Overview screen on the Security Adminstration user interface).

3. Enter an email address in the **To** field, or click Address Book (or the "+" sign) to add a contact or group name. See **Using the Address Book** on page 2-15 for more information about using the Address Book.

4. *Optional.* Enter an email address in the **CC** field, or click Address Book (or the "+" sign) to add a contact or group name. See **Using the Address Book** on page 2-15 for more information about using the Address Book.

   To remove the CC field, click **Remove CC**.

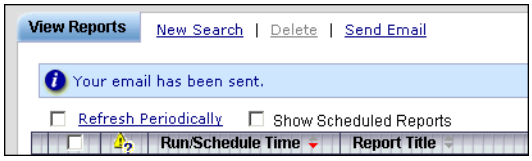
5. *Optional.* To add the BCC field, click **Add BCC**, and enter an email address in the **BCC** field, or click Address Book (or the "+" sign). See **Using the Address Book** on page 2-15 for more information about using the Address Book.

6. Enter a subject for the email in the **Subject** field.

7. Enter the email message in the **Message** field.

8. To send the email, click **Send**. To clear all the fields, click **Reset**.

   A message will appear at the top of the View Reports screen after your email has been sent.



Using the Address Book

In addition to entering email addresses manually, you can use the Address Book feature to select email recipients from those defined in the Oracle Utilities Data Repository. The Address Book contains listings of:

- **Contacts**
- **Groups**

Contacts

Contacts are specific individuals related to parties (such as Service Points or Market Participants) defined in the Oracle Utilities Data Repository.

How to select an existing contact from the Address Book:

1. Click **Address Book** (or the "+" sign) on the Send Email screen.

   The Address Book dialog opens on the Contacts tab.

2. Enter the search criteria for the contacts you wish to send email to. You can search by Last Name, First Name, Middle Name, or Company.

3. Specify how the search criteria are to be combined by selecting the appropriate **Combine with** option (**AND** or **OR**), located in the upper right corner of the search screen. The default combine option is **AND**.

4. Specify whether or not the search is Case-sensitive by checking or unchecking the **Case-sensitive** checkbox, located in the upper right corner of the search screen. The default setting is case-sensitive.

5. Specify how the search results are displayed.

   - Select the manner in which the results are sorted by clicking the **Sort by** plus ("+") sign. See **Specifying How Results are Sorted** on page 2-7 for more information.
   - Specify how many results should appear on each page in the **Page Length** field.

6. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new contact to the Address Book, click **Add**.

7. The search results appear on the Address Book dialog.

8. Select the contact(s) you wish to send the email to and click **To**. The selected contact(s) will appear in the To field on the Send Email screen.

   To remove a contact from the To, CC, or BCC field, select the contact and click the Delete Key, or click the right mouse, and select **Remove**.

9. *Optional*. To add a contact to the CC (or BCC) field, select the contact(s) you wish to send the email to and click **CC** (or **BCC** as appropriate). The selected contact(s) will appear in the CC (or BCC) field on the Send Email screen.

How to add a contact using the Address Book:

1. Click **Add** on the Contacts tab of the Address Book dialog.

   The Edit Contact screen opens.

2. Enter personal information for the contact (First, Middle, and Last Names, Title, etc.) in the **Personal Information** pane.

3. Enter contact methods (phone numbers, email addresses, etc.) for the contact in the **Contact Method** pane.

4. Enter optional address(es) for the contact in the **Address Information** pane.

5. Click **Save** to save the contact.

6. Click **Return to Email** to return to the Send Email screen and Address Book dialog.

7. Select the new contact and click **To**, **CC**, or **BCC** to add the contact to the appropriate field.

See **Contacts** on page 7-2 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about creating contacts.

Groups

Groups are groupings of contacts in the Oracle Utilities Data Repository.

How to select an existing group from the Address Book:

1. Click **Address Book** (or the "+" sign) on the Send Email screen.

   The Address Book dialog opens on the Contacts tab. Click the **Groups** tab.

2. Enter the search criteria for the contacts you wish to send email to. You can search by Group Name or Desciption.

3. Specify how the search criteria are to be combined by selecting the appropriate **Combine with** option (**AND** or **OR**), located in the upper right corner of the search screen. The default combine option is **AND**.

4. Specify whether or not the search is Case-sensitive by checking or unchecking the **Case-sensitive** checkbox, located in the upper right corner of the search screen. The default setting is case-sensitive.

5. Specify how the search results are displayed.

   - Select the manner in which the results are sorted by clicking the **Sort by** plus ("+") sign. See **Specifying How Results are Sorted** on page 2-7 for more information.
   - Specify how many results should appear on each page in the **Page Length** field.

6. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new group to the Address Book, click **Add**.

7. The search results appear on the Address Book dialog.

8. Select the group(s) you wish to send the email to and click **To**. The selected group(s) will appear in the To field on the Send Email screen.

To remove a group name from the To, CC, or BCC field, select the group name and press the Delete key, or click the right mouse, and select **Remove**.

9. *Optional.* To add a group to the CC (or BCC) field, select the group(s) you wish to send the email to and click **CC** (or **BCC** as appropriate). The selected group(s) will appear in the CC (or BCC) field on the Send Email screen.

How to add a group using the Address Book:

1. Click **Add** on the Groups tab of the Address Book dialog.

   The Edit Group screen opens.

2. Enter a name for the group in the **Group Name** field.
3. Enter a description of the group in the **Description** field.
4. *Optional.* Check the **Is Private** checkbox to indicate that the group is private. Private groups can be only be viewed by the user who created the group. Public groups (Is Private unchecked) can be viewed by all users.
5. To add a contact to the group, click **Add** on the Membership title bar, and select the contact from the **Contact ID** drop-down list. Repeat this step for each contact you wish to add to the group.
6. Click **Save** to save the group.
7. Click **Return to Email** to return to the Send Email screen and Address Book dialog.
8. Select the new group and click **To**, **CC**, or **BCC** to add the group to the appropriate field.

See **Groups** on page 7-5 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about creating contact groups.

Chapter 3

Meter Management

This chapter describes how users work with the Oracle Utilities Meter Data Management Meter Management functions, including:

- **Meters**
- **Meter Configuration**
- **Validation Groups**
- **Oracle Utilities Meter Data Management Validations and Estimations**

Meters

Records in the MDM Meter table represent logical meters used to record interval usage and consumption.

A Note About Physical and Logical Meters

Physical meters are the devices used to measure usage. Logical meters are used to distinguish between the different types of usage recorded by a single physical meter. More than one logical meter can be associated to a single physical meter. For example, a physical meter might be used to measure both interval usage and consumption. To represent this in Oracle Utilities Meter Data Management, you would create a single Physical Meter record for the actual physical device, and two Oracle Utilities Meter Data Management Meter records: one to record interval usage, the other to record consumption.

This section describes how users search, view, and add meters used with the Oracle Utilities Meter Data Management application, including:

- **Searching Meters**
- **Viewing and Editing Meters**
  - **Meter Configuration**
  - **MDM Exceptions**
- **Adding Meters**

Searching Meters

You can search for existing meters in the Oracle Utilities Data Repository.

How to search meters:

1. Select **Meter Data Management-›Meter Management-›MDM Meters**.

   The MDM Meter screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Meter ID, Expected Unit of Measure, Channel ID, Service Point, End Use Code, Usage Type Code, Related Data Channel, or Notes associated with the meter.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Meters** on page 3-8 for more information about adding new meters.

4. The search results appear on the MDM Meter screen.

   The MDM Meter screen displays the following information for each meter:

   - UID
   - Meter ID
   - Expected Unit of Measure
   - Channel ID
   - Service Point
   - End Use
   - Usage Type Code

- Related Data Channel
- Notes

See **Viewing and Editing Meters** on page 3-3 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Meter ID, click the Meter ID column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.
6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the MDM Meter screen. See **Viewing and Editing Meters** on page 3-3 for more information.
7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.
8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.
9. To add a new record, click **Add**. See **Adding Meters** on page 3-8 for more information about adding new meters.

Viewing and Editing Meters

Individual meters are viewed on the MDM Meter screen. This screen opens when you select a record from the MDM Meter search results screen.

How to view and edit meters:

1. Click on the **[...]** link for the meter you wish to view. The selected record opens on Meter tab of the MDM Meter screen.

   This tab displays the following information for the selected record:

   - **UID**: A unique id for the meter record
   - **Meter ID**: The meter ID of the meter
   - **Expected Unit of Measure**: The expected unit of measure for the meter, from the **Unit of Measure** table
   - **Channel ID**: The channel number associated with the meter
   - **Service Point**: The service point associated with the meter
   - **End Use**: The end use code associated with the meter, from the **End Usage** table
   - **Usage Type Code**: The usage type (CONSUMPTION, INTERVAL, or TOU) associated with the meter, from the **Usage Types** table
   - **Related Data Channel**: A related meter, from the **MDM Meter** table
   - **Notes**: Notes about the meter
   - **Meter Configurations**: A pane that displays configuration details for the meter, including **Meter Configuration** records and **MDM Exceptions**.
2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.
3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.
4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.
6. To delete the current record, click **Delete**.
7. To view an auditing trail for this meter, click the **Auditing** tab. See **Auditing Tab** on page 3-4 for more information.
8. You can also add, edit, or delete Meter Configuration records, MDM Exception records for the meter. See **Meter Configuration** on page 3-4, and **MDM Exceptions** on page 3-6 for more information about adding, editing, and deleting these records.

Auditing Tab

The Auditing tab displays a list of the current and previous versions of the MDM Meter record as stored in the Oracle Utilities Data Repository.

This tab displays the following information for each meter version record:

- **Icon**: An icon that designates if the version record was inserted, updated, or deleted:
  -  : Designates that the record was inserted
  -  : Designates that the record was updated
  -  : Designates that the record was deleted
- **User**: The user ID of the user who created/edited the version record
- **Time**: The date and time when the version record was edited
- **Table**: The database name of the table in which the version record is stored (LSMDMTRDATACHANNEL).
- **Database Record**: The individual columns and column values for the version record

To return to the MDM Meter search screen, click **Search**.

To return to the previous MDM Meter search results screen, click **List**.

Meter Configuration

The Meter Configuration tab lists Meter Configuration records for the meter. Meter configuration records define several characteristics of a meter and its use within the Oracle Utilities Meter Data Management application.

This tab displays the following information for each record:

- **UID**: A unique id for the meter configuration record
- **Physical Meter**: The physical meter corresponding to the meter configuration record, from the **Physical Meters** table
- **Start Time**: The start time of the meter configuration record
- **Stop Time**: The stop time of the meter configuration record
- **Read Cycle**: The read cycle for the meter configuration record, from the Read Cycle table
- **TOU Schedule**: The time-of-use (TOU) schedule used with the meter configuration record, from the TOU Schedules table
- **Validation Group**: The validation group used with the meter configuration record, from the Validation Groups table (see **Validation Groups** on page 3-14 for more information about validation groups)
- **Profile Meter**: The profile meter associated with the meter configuration record, from the MDM Meter table

- **Meter Multiplier**: The meter multiplier of the meter defined in the meter configuration record
- **Number of Dials**: The number of dials on the meter defined in the meter configuration record
- **Meter Offset**: The meter offset of the meter defined in the meter configuration record
- **Seconds Per Interval**: The seconds-per-interval (SPI) of the meter defined in the meter configuration record
- **Default Number of Decimals**: The default number of decimals included in meter readings from the meter defined in the meter configuration record
- **Pulse Multiplier**: The pulse multiplier of the meter defined in the meter configuration record
- **Power Flow Direction**: The power flow direction (Received or Distributed) of the meter defined in the meter configuration record
- **Totalize**: A flag that indicates the method (Include, Total, or Exclude) by which the data (interval or scalar) recorded by the meter defined in the meter configuration record is totalized
- **Billed?**: A flag (Yes or No) that indicates whether or not the data stored by the meter defined in the meter configuration record is required for billing
- **KE**: The solid state meter constant of the meter defined in the meter configuration record (data schema specific)
- **CT**: The current transformer ratio of the meter defined in the meter configuration record (data schema specific)
- **VT**: The voltage transformer ratio of the meter defined in the meter configuration record (data schema specific)
- **KH**: The watt-hour meter constant of the meter defined in the meter configuration record (data schema specific)
- **TR**: Additional dial constant (for universal register meters) of the meter defined in the meter configuration record (data schema specific)
- **Account ID**: The account associated with the meter defined in the meter configuration record, from the Accounts table
- **Transformer Loss Factor**: The transformer loss factor of the meter defined in the meter configuration record

To view a record, click on the corresponding **[...]** link. The selected record will appear in the Meter Configuration screen. See **Viewing and Editing Meter Configurations** on page 3-11 for more information.

To search for specific meter configuration records, click **Search**. See **Searching Meter Configurations** on page 3-9 for more information.

To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

To add a meter configuration record for the meter, click **Add**. See **Adding Meter Configurations** on page 3-13 for more information.

MDM Exceptions

The MDM Exceptions tab lists exceptions for the meter.

This tab displays the following information for each record:

- **UID**: Unique ID of the exception related to the event
- **Usage Category**: The usage category of the usage that triggered the exception/event, from the Usage Categories table
- **Start Read Time**: The start reading time of the reading that triggered the exception/event
- **Stop Read Time**: The stop reading time of the reading that triggered the exception/event
- **Exception Code**: The exception code of the exception
- **Exception Time**: The time exception was triggered
- **Description**: A description of the exception
- **Exception Status**: The status of the exception, from the Usage Exception Statuses table

To view a record, click on the corresponding **[...]** link. The selected record will appear in the MDM Exceptions screen. See **Viewing and Editing MDM Exceptions** on page 3-6 for more information.

To search for specific exception records related to the meter, click **Search**. See **Searching MDM Exceptions** on page 3-7 for more information.

To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

Viewing and Editing MDM Exceptions

You can view individual MDM Exceptions.

How to view MDM exceptions for a meter:

1. Click the **[...]** link for the exception you wish to view on the MDM Exceptions tab.

   The related exception opens in the MDM Exceptions screen.

   This screen displays the following information about the exception:

   - **UID**: Unique ID of the exception
   - **Meter Data Channel**: The meter associated with the exception, from the MDM Meters table
   - **Usage Category**: The usage category of the usage that triggered the exception, from the Usage Categories table
   - **Start Read Time**: The start reading time of the reading that triggered the exception
   - **Stop Read Time**: The stop reading time of the reading that triggered the exception
   - **Exception Code**: The exception code of the exception
   - **Exception Time**: The time exception was triggered
   - **Description**: A description of the exception
   - **Exception Status**: The status of the exception, from the Usage Exception Statuses table

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To search for specific exception records related to the meter, click **Search**. See **Searching MDM Exceptions** on page 3-7 for more information.
5. To open a list of records, click **List**.
6. To delete the current record, click **Delete**.

Searching MDM Exceptions

You can also search for MDM exceptions related to the current meter.

How to search MDM exceptions for a meter:

1. Click **Search** on the MDM Exceptions screen.

   The MDM Exception screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Meter Data Channel (pre-populated based on the current meter), Usage Category, Start Read Time, Stop Read Time, Exception Code, Exception Time, Description, or Exception Status associated with the exception.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**.
4. The search results appear on the MDM Meter screen.

   The MDM Exceptions screen displays the following information for each meter:

   - UID
   - Meter Data Channel
   - Usage Category
   - Start Read Time
   - Stop Read Time
   - Exception Code
   - Exception Time
   - Description
   - Exception Status

   See **Viewing and Editing MDM Exceptions** on page 3-6 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Meter Data Channel, click the Meter Data Channel column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.
6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the MDM Meter screen. See **Viewing and Editing MDM Exceptions** on page 3-6 for more information.
7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.
8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

Meter Data Tab

The Meter Data Readings tab lists usage records for the selected meter. When viewing an interval meter, this tab is labeled Meter Data Channel Cuts. When viewing consumption or time-of-use meters, this table is labeled Meter Data Readings.

To view a record, click on the corresponding **[...]** link. The selected record will appear in the Edit Values (or Edit Usage or Edit TOU Usage) screen. See **Viewing and Editing Usage** on page 4-8 for more information about viewing usage.

To search for specific usage records, click **Search**. A search screen of the corresponding record type (Meter Data Channel Cut or Meter Data Reading) opens.

Adding Meters

You can also add new meters.

How to add meters:

1. Click **Add** on the MDM Meter search or list screens. A blank MDM Meter screen opens.
2. Enter the meter ID for the meter in the **Meter ID** field.
3. Select the expected unit of measure for the meter in the **Expected Unit of Measure** field.
4. Enter the channel ID for the meter in the **Channel ID** field.
5. Select the service point associated with the meter in the **Service Point** field.
6. Select the end use code associated with the meter in the **End Use** field.
7. Select the usage type of the meter in the **Usage Type Code** field.
8. Select a related meter in the **Related Data Channel** field.
9. Enter optional notes about the meter in the **Notes** field.
10. To return to the search screen without adding a record, click **Search**.
11. To save the record, click **Save**.

    The new meter appears on the screen.
12. To add a Meter Configuration record for the meter, click **Add** on the Meter Configuration tab. See **Meter Configuration** on page 3-4 for more information about adding these records.

Meter Configuration

Records in the Meter Configuration table define specific characteristics of a meter and its use within the Oracle Utilities Meter Data Management application. Characteristics defined by meter configuration records include read cycles, time of use schedules, validation groups, profile meters, meter multipliers, number of dials, meter offset, seconds per interval, and other characteristics.

This section describes how users search, view, and add meter configurations used with the Oracle Utilities Meter Data Management application, including:

- **Searching Meter Configurations**
- **Viewing and Editing Meter Configurations**
- **Adding Meter Configurations**

Searching Meter Configurations

You can search for existing meter configuration records in the Oracle Utilities Data Repository.

How to search meter configuration records:

1. Select **Meter Data Management›Meter Management›Meter Configuration**.

   The Meter Configuration screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Meter Data Channel, Physical Meter, Start Time, Stop Time, Read Cycle, TOU Schedule, Validation Group, Profile Meter, Meter Multiplier, Number of Dials, Meter Offset, Seconds Per Interval, Default Number of Decimals, Pulse Multiplier, Power Flow Direction, Totalize flag, Billed? flag, KE, CT, VT, KH, TR, Account ID, or Transformer Loss Factor associated with the meter configuration.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Meter Configurations** on page 3-13 for more information about adding new meter configuration records.

4. The search results appear on the Meter Configuration screen.

   The MDM Meter screen displays the following information for each meter:

   - UID
   - Meter Data Channel
   - Physical Meter
   - Start Time
   - Stop Time
   - Read Cycle
   - TOU Schedule
   - Validation Group
   - Profile Meter
   - Meter Multiplier
   - Number of Dials

- Meter Offset
- Seconds Per Interval
- Default Number of Decimals
- Pulse Multiplier
- Power Flow Direction
- Totalize
- Billed?
- KE
- CT
- VT
- KH
- TR
- Account ID
- Transformer Loss Factor

See **Viewing and Editing Meter Configurations** on page 3-11 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Meter Data Channel, click the Meter Data Channel column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.
6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Meter Configuration screen. See **Viewing and Editing Meter Configurations** on page 3-11 for more information.
7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.
8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.
9. To add a new record, click **Add**. See **Adding Meter Configurations** on page 3-13 for more information about adding new meter configuration records.

Viewing and Editing Meter Configurations

Individual meter configuration records are viewed on the Meter Configuration screen. This screen opens when you select a record from the Meter Configuration search results screen.

How to view and edit meter configuration records:

1. Click on the **[...]** link for the meter configuration you wish to view. The selected record opens on Configuration tab of the Meter Configuration screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the meter configuration record
   - **Meter Data Channel**: The meter corresponding to the meter configuration record, from the MDM Meter table
   - **Physical Meter**: The physical meter corresponding to the meter configuration record, from the Physical Meters table
   - **Start Time**: The start time of the meter configuration record
   - **Stop Time**: The stop time of the meter configuration record
   - **Read Cycle**: The read cycle for the meter configuration record, from the Read Cycle table
   - **TOU Schedule**: The time-of-use (TOU) schedule used with the meter configuration record, from the TOU Schedules table
   - **Validation Group**: The validation group used with the meter configuration record, from the Validation Groups table (see **Validation Groups** on page 3-14 for more information about validation groups)
   - **Profile Meter**: The profile meter associated with the meter configuration record, from the MDM Meter table
   - **Meter Multiplier**: The meter multiplier of the meter defined in the meter configuration record
   - **Number of Dials**: The number of dials on the meter defined in the meter configuration record
   - **Meter Offset**: The meter offset of the meter defined in the meter configuration record
   - **Seconds Per Interval**: The seconds-per-interval (SPI) of the meter defined in the meter configuration record
   - **Default Number of Decimals**: The default number of decimals included in meter readings from the meter defined in the meter configuration record
   - **Pulse Multiplier**: The pulse multiplier of the meter defined in the meter configuration record
   - **Power Flow Direction**: The power flow direction (Received or Distributed) of the meter defined in the meter configuration record. Unless specifically supplied in a meter reading, the Power Flow Direction (DC_FLOW) of all readings for the meter defined in this record will be set to this setting.
   - **Totalize**: A flag that indicates the method (Include, Total, or Exclude) by which the data (interval or scalar) recorded by the meter defined in the meter configuration record is totalized
   - **Billed?**: A flag (Yes or No) that indicates whether or not the data stored by the meter defined in the meter configuration record is required for billing
   - **KE**: The solid state meter constant of the meter defined in the meter configuration record (data schema specific)

- **CT**: The current transformer ratio of the meter defined in the meter configuration record (data schema specific)
- **VT**: The voltage transformer ratio of the meter defined in the meter configuration record (data schema specific)
- **KH**: The watt-hour meter constant of the meter defined in the meter configuration record (data schema specific)
- **TR**: Additional dial constant (for universal register meters) of the meter defined in the meter configuration record (data schema specific)
- **Account ID**: The account associated with the meter defined in the meter configuration record, from the Accounts table
- **Transformer Loss Factor**: The transformer loss factor of the meter defined in the meter configuration record

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.
3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.
4. To perform a new search, click **Search**.
5. To open a list of records, click **List**.
6. To delete the current record, click **Delete**.
7. To view an auditing trail for this meter configuration record, click the **Auditing** tab. See **Auditing Tab** on page 3-12 for more information.

Auditing Tab

The Auditing tab displays a list of the current and previous versions of the Meter Configuration record as stored in the Oracle Utilities Data Repository.

This tab displays the following information for each meter configuration version record:

- **Icon**: An icon that designates if the version record was inserted, updated, or deleted:
  -  : Designates that the record was inserted
  -  : Designates that the record was updated
  -  : Designates that the record was deleted
- **User**: The user ID of the user who created/edited the version record
- **Time**: The date and time when the version record was edited
- **Table**: The database name of the table in which the version record is stored (LSMDMTRDATACHANHIST).
- **Database Record**: The individual columns and column values for the version record

To return to the Meter Configuration search screen, click **Search**.

To return to the previous Meter Configuration search results screen, click **List**.

Adding Meter Configurations

You can also add meter configuration records.

How to add meter configuration records:

1. Click **Add** on the Meter Configuration search or list screens. A blank Meter Configuration screen opens.
2. Select the meter for the record in the **Meter Data Channel** field.
3. Select the physical meter for the record in the **Physical Meter** field. You can also add a new Physical Meter by clicking Add on the Physical Meters dialog. See **Adding Physical Meters** on page 7-8 for more information about creating Physical Meter records.
4. Enter the start time for the record in the **Start Time** field.
5. Enter the stop time for the record in the **Stop Time** field.
6. Select the read cycle for the record in the **Read Cycle** field.
7. Select the time of use schedule for the record in the **TOU Schedule** field.
8. Select the validation group for the record in the **Validation Group** field.
9. Select a profile meter for the record in the **Profile Meter** field.
10. Enter the meter multiplier for the record in the **Meter Multiplier** field.
11. Enter the number of dials for the record in the **Number of Dials** field.
12. Enter the meter offset for the record in the **Meter Offset** field.
13. Enter the seconds per interval for the record in the **Seconds Per Interval** field.
14. Enter the default number of decimals for the record in the **Default Number of Decimals** field.
15. Enter the pulse multiplier for the record in the **Pulse Multiplier** field.
16. Select the power flow direction for the record in the **Power Flow Direction** field. Unless specifically supplied in a meter reading, the Power Flow Direction (DC_FLOW) of all readings for the meter defined in this record will be set to this setting.
17. Select the totalize method for the record in the **Totalize** field.
18. Select the required for billing flag in the **Billed?** field.
19. Enter the solid state meter constant for the record in the **KE** field.
20. Enter the current transformer ratio for the record in the **CT** field.
21. Enter the voltage transformer ratio for the record in the **VT** field.
22. Enter the watt-hour meter constant for the record in the **KH** field.
23. Enter the additional dial constant (for universal register meters) for the record in the **TR** field.
24. Select the account associated with the record in the **Account ID** field.
25. Enter the transformer loss factor for the record in the **Transformer Loss Factor** field.
26. To return to the search screen without adding a record, click **Search**.
27. To save the record, click **Save**.

Validation Groups

Records in the Validation Groups table represent groupings of validations and operations that are applied to meter readings in the Oracle Utilities Meter Data Management application.

This section describes how users search, view, and add validation groups used with the Oracle Utilities Meter Data Management application, including:

- **Searching Validation Groups**
- **Viewing and Editing Validation Groups**
- **Adding Validation Groups**

Searching Validation Groups

You can search for existing validation groups in the Oracle Utilities Data Repository.

How to search validation groups:

1. Select **Meter Data Management->Meter Management->Validation Groups**.

   The Validation Group screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Name, or Description of the validation group.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Validation Groups** on page 3-15 for more information about adding new validation groups.

4. The search results appear on the Validation Group screen.

   The Validation Group screen displays the following information for each meter:

   - UID
   - Name
   - Description

   See **Viewing and Editing Validation Groups** on page 3-15 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Name, click the Name column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Validation Group screen. See **Viewing and Editing Validation Groups** on page 3-15 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Validation Groups** on page 3-15 for more information about adding new meters.

Viewing and Editing Validation Groups

Individual validation groups are viewed on the Validation Group screen. This screen opens when you select a record from the Validation Group search results screen.

How to view and edit validation groups:

1. Click on the **[...]** link for the validation group you wish to view. The selected record opens on the Validation Group screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the validation group record
   - **Name**: The name of the validation group
   - **Description**: A description of the validation group
   - **Validation Groups**: A pane that displays the specific validations in the validation group. See **Viewing Validations** on page 3-17 for information about viewing individual validations within a validation group. See **Adding, Editing, and Deleting Validations** on page 3-18 for information about editing validations within a validation group.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Validation Groups

You can also add new validation groups.

How to add validation groups:

1. Click **Add** on the Validation Group search or list screens. A blank Validation Group screen opens.

2. Enter the name for the validation group in the **Name** field.

3. Enter a description of the validation group in the **Description** field.

4. Define the specific validations that belong to the validation group in the **Validation Groups** pane. See **Adding, Editing, and Deleting Validations** on page 3-18 for more information about adding validations to a validation group.

5. To return to the search screen without adding a record, click **Search**.

6. To save the record, click **Save**.

Oracle Utilities Meter Data Management Validations and Estimations

This section describes how and when validations are performed by the Oracle Utilities Meter Data Management application, how users view validations within a validation group, and the validations and operations available in the Oracle Utilities Meter Data Management application. This section includes:

- **How and When Validations are Performed**
- **Validations Tree**
- **Viewing Validations**
- **Adding, Editing, and Deleting Validations**
- **MDM Validations**
- **Interval Data Validations**
- **Estimations**
- **Creating Custom Rate Validations and Estimations**

How and When Validations are Performed

The validations defined in Validation Groups are validations and operations that are applied to meter readings in the Oracle Utilities Meter Data Management application. When validations are triggered for a meter reading, Oracle Utilities Meter Data Management determines the Validation Group associated with the meter that corresponds to the meter reading (defined in the **Meter Configuration** table), and triggers the validation(s) defined in the Validation Group.

For example, assume the following meter configuration:

- **Meter ID**: METER1
- **Validation Group**: VALGROUP1 (includes Number of Dials and Meter Multiplier validations)

When validation is triggered for METER1, Oracle Utilities Meter Data Management would perform the Number of Dials and Meter Multiplier validations on the meter reading.

Validations are triggered in one of two ways:

- **Upon Import**: When a meter reading is imported into the application, any validations associated with the corresponding meter are triggered automatically.
- **Manual**: Validations can also be triggered manually on the Edit Values, Edit Usage, or Edit TOU Usage screens (accessible via the **Usage Management>Usage Add/Edit** and **Usage Management>Usage Analysis** options of the Meter Data Management menu.

Which Validations

When performing validations, Oracle Utilities Meter Data Management uses the Validation Group that is in effect as of the Stop Read Time on the meter reading. For example, assume the following Meter Configurations:

Meter Configuration 1:

- **Meter ID**: METER1
- **Validation Group**: VALGROUP1
- **Start Time**: 01/01/2005 00:00:00
- **Stop Time**: 07/31/2005 23:59:59

Meter Configuration 2:

- **Meter ID**: METER1
- **Validation Group**: VALGROUP2
- **Start Time**: 08/01/2005 00:00:00
- **Stop Time**: 12/31/2005 23:59:59

Meter readings for METER1 with a Read Stop Time before 07/31/2005 23:59:59 would use VALGROUP1 for validations, while meter readings whose Read Stop Time is later than 08/01/2005 00:00:00 (but before 12/31/2005) would use VALGROUP2 for validations.

Validations Tree

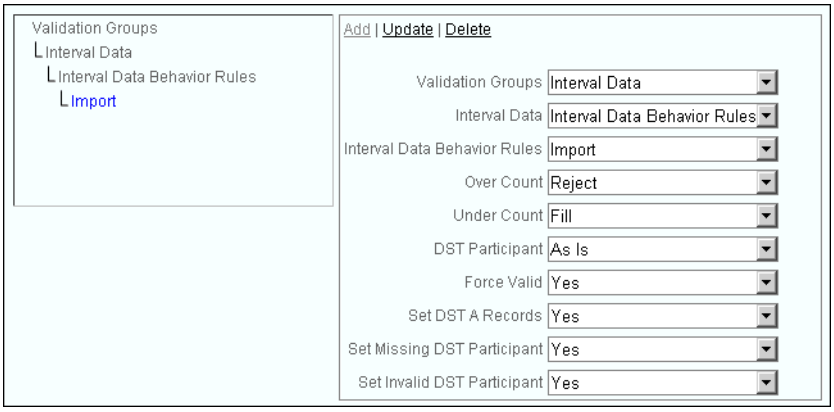
Validations can be viewed on the Validation Groups pane on the Validation Groups screen. The tree displays groupings of validations. The top element in the tree is "Validation Groups." Below this are the validation group elements (MDM, Interval Data, Estimation). Below these are categories of validations (All Rules, Consumption, etc.) which are the parents of individual groupings of validations. Below these you can define individual validations.

In the validations tree:

- Validation Groups and categories are displayed in **Grey** text.
- Names of individual validations are displayed in **Blue** text.

Viewing Validations

To view a validation, click the name of the validation on the tree display in the Validations Groups pane. The selected validation appears in the validations box (to the right of the Validation Groups pane).



Adding, Editing, and Deleting Validations

You can add, edit, and delete validations within a validation group. Validations belonging to a validation group appear in a tree structure in the Validation Group pane. Details of a specific validation appear in the validation box (to the right of the Validation Group pane) when you select a specific validation in the tree.

How to add a validation to a validation group:

1. Select the validation group (MDM, Interval Data, or Estimation) to add on the **Validation Group** drop-down list in the Validations box (to the right of the Validation Groups pane).
2. For *MDM* validation groups:

    a. Select the category of validation (All Rules, Consumption Rules, or Interval Rules) to add to the selected validation group from the **MDM** drop-down list.

    b. Select the specific validation to add from the category-specific drop-down list (All Rules, Consumption Rules, or Interval Rules).
3. For *Interval Data* validation groups:

    a. Select the category of validation (Interval Data Behavior Rules or Interval Import Rules) to add to the selected validation group from the **Interval Data** drop-down list.

    b. For *Interval Data Behavior Rules*, select the specific validation to add from the Interval Data Behavior Rules drop-down list.

    c. For *Interval Import Rules*, select the validation type (Validation Rules or Timezone Conversion) from the **Interval Import Rules** drop-down list, and select the specific validation from the type-specific drop-down list.
4. For *Estimation* validation groups:

    a. Select the specific validation to add from the **Estimation** drop-down list.
5. Select/enter parameters for the validation, based on the specific validation. Required parameters are indicated with an asterisk (*) in the Validation box.
6. Click **Add** in the Validations box to add the validation. The selected validation now appears in the Validation Groups pane.
7. When done adding validations, click **Save** (at the top of the Validation Groups screen) to save the Validation Group record.

How to edit a validation in a validation group:

1. Click the validation you wish to edit.
2. Edit the validation as needed, and click **Update** in the Validations box.
3. When finished editing validations, click **Save** (at the top of the Validation Groups screen) to save the Validation Group record.

How to delete a validation from a validation group:

1. Click the validation you wish to delete.
2. Click **Delete** in the Validations box.

    The selected validation no longer appears in the Validations tree. If the validation was the only child of its parent group, the validation group is also deleted from the Validations tree.
3. When finished deleting validations, click **Save** (at the top of the Validation Groups screen) to save the Validation Group record.

MDM Validations

MDM validations are validations used solely by the Oracle Utilities Meter Data Management application, and are used to validate various properties of incoming usage data. MDM Validations include the following validation categories:

- **All Rules**
- **Consumption Rules**
- **TOU Rules**
- **Interval Rules**

All Rules

All Rules validations are those that can be applied to consumption, TOU, and interval readings, and include the following:

- **Meter Changeout Overlap Check**
- **Event Check**
- **Billed Flag**
- **Replacement Flag**
- **Overlap Flag**
- **Revenue Protection Calculation**
- **Timezone Conversion**
- **DST Participant Rules**
- **Default Decimal**
- **Zero Consumption**
- **Negative Consumption**
- **Active Account**
- **Valid Service Point**
- **Low Average Daily Usage**
- **Vacant Premise Average Daily Usage**
- **Bill Determinant Recalculation**
- **Rate**

Meter Changeout Overlap Check

Meter Changeout Overlap Check validations check that only one physical meter was active for the duration of the usage period to determined if a "Meter Changeout" occurred. A meter changeout occurs when the current physical meter that is installed at a service point is swapped out for a new physical meter. The logical data channel (Meter Data Channel) may still exist, but a new physical device is capturing usage information. This is represented in Oracle Utilities Meter Data Management by the creation of a new Meter Configuration record for the logical meter that specifies the new physical meter. If more than one physical meter is active during the duration of the usage period, the reading fails this validation, and an exception is generated.

Meter Changeout Overlap Check validations use the following parameters:

- **Exception Code**: The exception triggered by a failed validation of this type.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Event Check

Event Check validations flag checks incoming Echelon usage readings for Meter Events (defined in the Meter Events table), and maps them to standard Oracle Utilities Meter Data Management exception codes.

Event Check validations use the following parameters:

- **Exception Code**: The exception code to which the Meter Event is mapped
- **Echelon Meter Event**: The type of Meter Event, from the Meter Event table, to map to the Exception Code.

Billed Flag

Bill Flag validations flag sets the Reading Category of the incoming reading to STAGING if there is already usage for the same meter and time that has the Billed flag set to "Y"

Billed Flag validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation

Replacement Flag

Replacement Flag validations flag usage as replaced if the reading Start Time or Stop Time overlap with a previous reading in any way. This validation should be used in conjunction with the **Partial Replacement Flag** and **Replacement** interval validations. See **Interval Rules** on page 3-41 for more information about these validations.

Replacement Flag validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type

Overlap Flag

Overlap Flag validations identify overlapping readings, and generate an exception if the incoming reading overlaps in any way with an existing reading. The Exception Type (ERROR or INFORMATIONAL) for the Exception Code for the validation (see below) determines whether the Reading Category of overlapping readings are set to STAGING or FINAL.

Overlap Flag validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation

Revenue Protection Calculation

Revenue Protection Calculation validations compares Average Daily Usage (ADU) for the meter to associated profile data. ADU is equal to the Total Energy for the reading, divided by the number of days for the reading. ADU is typically measured in KWH. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the Average Daily Usage (ADU) for the current reading.
- Calculate the ADU for the profile for the same period as the associated meter.
- Compare the ADU of the current meter reading to the profile ADU.

If the ADU for the current meter reading varies beyond the user-defined Tolerance in comparison to the profile ADU, the meter reading fails this validation, and an exception is generated.

Revenue Protection Calculation validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Tolerance**: The tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation

- **Unit of Measure**: The unit of measure for which revenue protection calculations are to be performed. If not supplied, the validation is applied to readings of all UOMs.

Timezone Conversion

Time Zone Conversion validations change the time zone of the incoming interval data to a specified time zone.

Timezone conversion validations use the following parameters:

- **Source Timezone**: the original time zone of the incoming interval data (from the LSCALENDAR.CFG.XML file)
- **Target Timezone**: the target time zone for the incoming interval data. After processing, the time zone for the interval data will be set to this (from the LSCALENDAR.CFG.XML file)

DST Participant Rules

DST Participant validations define settings and behavior for the DST Participant flag.

DST Participant validations use the following parameters:

- **Default DST_Participant**: Controls any Daylight Saving Time conversions that will be applied to the cut as it is imported into the system. Valid values include:
  - **No**: Converts all incoming cuts not to follow the DST rules associated with them via the TZSN or by using the default set in LSCalendar.xml. This setting changes all incoming cuts with DST_Participant flags set to "A" or "Y" to "N".
  - **Yes**: Converts all incoming cuts to follow the default DST rules set in LSCalendar.xml or uses the incoming cut's Time Zone Standard Name (TZSN) if available. This setting changes all incoming cuts with DST_Participant flags set to "A" or "N" to "Y" and converts the cuts using the DST conversion algorithm for that TZSN.
  - **As Is**: Allows cuts to be entered into the system without using any conversions. The DST_Participant flags remain as they are supplied. This can result in databases that have mixed DST_Participant cuts, and is not recommended if the data source will be used with Oracle Utilities Load Analysis.
- **Set Missing DST Participant**: Controls the default value assigned to the DST_Participant Flag when the incoming cut does not contain the flag. Valid values include:
  - **Yes**: Sets the DST_Participant flag to "Y".
  - **No**: Sets the DST_Participant flag to "N".
- **Set Invalid DST Participant**: Controls the behavior of the import and loading of cuts when the DST_Participant flag in the source cut is not an A, N, or Y. Valid values include:
  - **Yes**: Sets the DST_Participant flag of an incoming cut with an invalid DST_Participant flag to Y.
  - **No**: Sets the DST_Participant flag of an incoming cut with an invalid DST_Participant flag to N.
  - **Reject**: Does not allow the cut to be imported.

Default Decimal

Default Decimal validations verify that the Default Decimal value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Default Decimal values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Default Decimal validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type

Zero Consumption

Zero Consumption validations check for zero usage in the current meter reading. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- If the consumption of the current reading (based on the Energy value of the reading) is zero (0), check if an Outage Event of the type specified under Meter Event has occurred by checking the Physical Meter Event History table for events of the user-defined Meter Event within the Start and Stop Time of the meter reading. If the Energy value of the reading is not populated and the **Calculate Consumption** validation is not enabled, this validation is skipped.
    - If an event of that type is detected, an exception based on the user-defined Outage Exception Code is generated.
    - If no outage event is detected, an exception based on the user-defined Exception Code is generated.

Zero Consumption validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation
- **Register Segment**: Identifies the type of segment (register readings or interval) the validation should be applied to for interval readings. If the reading is not of the register type specified, the validation is skipped. Valid values include:
    - Interval Only
    - Register Only
    - Both (default)
- **Meter Event**: The physical meter event type that identifies an outage event. If this event exists during the usage reading, the validation is successful. Valid values include valid physical meter events. If this parameter is not defined, the validation does not check for outage events.
- **Outage Exception Code**: The exception type generated by a failed validation if an outage event exists during the usage reading. Valid values include valid exception codes defined in the system. Note: If the Outage Exception Code is not defined, then no exception will be created for outage events.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Negative Consumption

Negative Consumption validations check for negative usage for the current meter reading. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- If the usage for the current reading (based on the Energy value of the reading) is less than zero (0), the meter reading fails this validation, and an exception is generated. If the Energy value of the reading is not populated and the **Calculate Consumption** validation is not enabled, this validation is skipped.

Negative Consumption validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation
- **Register Segment**: Identifies the type of segment (register readings or interval) the validation should be applied to for interval readings. If the reading is not of the register type specified, the validation is skipped. Valid values include:
    - Interval Only
    - Register Only

    - Both (default)
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Active Account

Active Account validations check that the reading's logical meter is associated to an active account for the entire usage period. Meters can be associated to multiple active accounts over time as long as they do not overlap and no inactive gaps exist. This check is performed by comparing the Start and Stop times of the reading to the Start Time and Stop Time values on the Service Point Account record for the Service Point associated to the meter. If the meter is not associated to an active account for the entire usage period, the reading fails this validation, and an exception is generated.

Active Account validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation

Valid Service Point

Valid Service Point validations check that the meter is associated to a valid service point for the entire meter usage period. Meter should be tied to only one service point for the usage period. This check is performed by comparing the Start and Stop times of the reading to the Start Time and Stop Time values on the Service Point record for the Service Point associated to the meter. If the meter is not associated to a valid service for the entire usage period, the reading fails this validation, and an exception is generated.

Valid Service Point validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation

Low Average Daily Usage

Low Average Daily Usage validations check for low average daily usage (ADU) for the current meter reading. ADU is equal to the Total Energy for the reading, divided by the number of days for the reading. ADU is typically measured in KWH. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Check that the duration of the reading is equal to or greater than the user-defined Minimum Read Duration.
- Check that the meter is associated to an active account (see **Active Account** on page 3-23). Note: If the meter is not associated to an active account, the validation is skipped.
- Calculate the ADU for the meter reading.
- Compare the ADU of the current meter reading to the user-defined Minimum ADU value.
- If the ADU of the current reading is below the user-defined Minimum ADU value, check if an Outage Event of the type specified under Meter Event has occurred by checking the Physical Meter Event History table for events of the user-defined Meter Event within the Start and Stop Time of the meter reading.
    - If an event of that type is detected, an exception based on the user-defined Outage Exception Code is generated.
    - If no outage event is detected, an exception based on the user-defined Exception Code is generated.

Low Average Daily Usage validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation
- **Minimum Read Duration**: The minimum length of the reading (in days). This validation is skipped for readings with a duration less than this value.

- **Minimum ADU**: The minimum ADU value used to determine if the validation is executed. If the ADU is above this value, the validation is skipped.
- **Meter Event**: The physical meter event type that identifies an outage event. If this event exists during the usage reading, the validation is successful. Valid values include valid physical meter events. If this parameter is not defined, the validation does not check for outage events.
- **Outage Exception Code**: The exception type generated by a failed validation if an outage event exists during the usage reading. Valid values include valid exception codes defined in the system. Note: If the Outage Exception Code is not defined, then no exception will be created for outage events.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Vacant Premise Average Daily Usage

Vacant Premise Average Daily Usage validations check for high average daily usage (ADU) for the current meter reading. ADU is equal to the Total Energy for the reading, divided by the number of days for the reading. ADU is typically measured in KWH. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Check that the duration of the reading is equal to or greater than the user-defined Minimum Read Duration.
- Check that the meter is **not** associated to an active account (see **Active Account** on page 3-23). Note: If the meter is associated to an active account, the validation is skipped.
- Calculate the ADU for the meter reading.
- Compare the ADU of the current meter reading to the user-defined Maximum ADU value.
    - If the ADU of the current reading is above the user-defined Maximum ADU value, the reading fails this validation, and an exception is generated.

Vacant Premise Average Daily Usage validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation
- **Minimum Read Duration**: The minimum length of the reading (in days). This validation is skipped for readings with a duration less than this value.
- **Maximum ADU**: The maximum value used to determine if the validation is executed. If the ADU is below this value, the validation is skipped.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Bill Determinant Recalculation

Bill Determinant Recalculation validations are used to trigger automatic recalculation of bill determinants for an account when replacement usage is received, and optionally, if usage is manually edited. If this validation is enabled for a meter that receives replacement usage for a Final reading (Usage Category = "FINAL") that has been billed (Billed = "Yes"), Meter Data Management initiates recalculation of bill determinants for the billing period to which the replacement reading would be applied. This is triggered by the creation of a record in the Payload Extension table that will be used to invoke the Bill Determinant Recalculation Selector (BD_RECALCULATE_SELECTOR_TRIGGER) business rule.

Bill Determinant Recalculation validations use the following parameters:

- **Recalculate Upon Manual Edit**: Flag that indicates ("Yes" or "No") if billing determinants should be recalculated if a Final reading (Usage Category = "FINAL") that has been billed (Billed = "Yes") is manually edited.

- **Exception Code**: The exception code for exceptions triggered by the validation (not required)
- **Payload Type**: The payload type on the Payload Extension records created by the validation This should always be set to "Bill Determinant Recalculation."

Rate

Rate validations perform validations configured in a specified Oracle Utilities Rules Language rate schedule.

Rate validations use the following parameters:

- **Rate**: The rate schedule executed to perform the validation, in the following format:

  <OPCO>:<JURIS>:<RATEFORMNAME>

  where:

  - <OPCO> is the Operating Company for the rate form
  - <JURIS> is the Jurisdiction for the rate form
  - <RATEFORMNAME> is the Rate Form Name for the rate form
- **Validate Only**: A flag that indicates (Yes or No) if the custom validation will only perform validation on the reading (Yes), or if it will validate and (conditionally) manipulate the reading (No). This setting applies to Interval readings only. The default is Yes.
- **Use Cut in Memory**: A flag that indicates (Yes or No) if the validation will use the reading in memory (Yes), or access the reading from the database (No). When set to Yes, the reading is passed to the Rules Language as a pre-defined identifier (RAW_DATA_HNDL) which can be used to access the reading without the need to load the reading from the database. This can enhance the performance of custom validations.The default is No.

Consumption Rules

Consumption rule validations are those that apply to consumption (or scalar) meter readings, and include the following:

- **Meter Changeout Start Time and Value**
- **Calculate Demand**
- **Calculate Consumption**
- **Meter Multiplier**
- **Zero Consumption**
- **Number of Dials**
- **Fill Missing Start Time and Value**
- **Out Of Order**
- **High/Low Consumption**
- **High/Low - Daily**
- **High/Low - Monthly**
- **Demand High/Low - Daily**
- **Demand High/Low - Monthly**
- **Transformer Loss Factor**
- **Serial Number**
- **Rate**

Meter Changeout Start Time and Value

Meter Changeout Start Time and Value validations calculate the start time and start values for readings that overlap with a "Meter Changeout" and that are missing the start time and/or start value. A meter changeout occurs when the current physical meter that is installed at a service point is swapped out for a new physical meter. The logical data channel (Meter Data Channel) may still exist, but a new physical device is capturing usage information. This is represented in Oracle Utilities Meter Data Management by the creation of a new Meter Configuration record for the logical meter that specifies the new physical meter. When a meter changeout is detected for a reading, Oracle Utilities Meter Data Management needs to take the new physical meter into account when calculating the missing start time and value for consumption and TOU readings. The start time for a meter changeout reading can be based on the Stop Time of the previous reading (plus one second) for the meter or on the Start Time of the most recent Meter Configuration record. The start value for a meter changeout reading can be based on the Stop Value of the previous reading for the meter or can be set to zero (0).

Meter Changeout Start Time and Value validations use the following parameters:

- **Exception Code**: The exception triggered by a failed validation of this type.
- **Start Time**: Specifies how to calculate the Start Time for the usage record. Valid values include:
  - **Use Previous Stop Time**: Set the Start Time of the reading equal to the Stop Time of the previous meter reading plus one second. If no previous reading can be found for the meter, a critical exception is generated.
  - **Use Meter Configuration Record**: Use the Start Time of the most recent Meter Configuration record for the meter.
- **Start Value**: Specifies how to calculate the Start Value for the usage record. Valid values include:

- **Use Previous Stop Value**. Set the Start Value of the reading equal to the Stop Value of the previous meter reading. If no previous reading can be found for the meter, a critical exception is generated.
- **Use Zero**: Set the Start Value of the reading to zero (0).

- **Require Previous Final Usage**: A flag that indicates (Yes or No) whether the rule will use only FINAL previous readings when calculating the start time and value for the usage record. If set to "No" (the default), the rule will use either FINAL or STAGING previous readings.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Calculate Demand

Calculate Demand validations calculate the total demand for consumption and time of use readings from meters that record "demand" units of measure (units of measure for which the Aggregate Method is set to "Average" in the Unit of Measure table). The demand calculation is as follows:

Demand Value = Stop Read * Meter Multiplier

When this validation rule is executed, the following attributes are calculated as follows and stored only if they do NOT have a value already:

- Start Read = NULL
- Stop Read = Value from the read
- Total (Demand Value) = Stop Read * Meter Multiplier
- Energy = NULL

For example, if the Total value is empty, the validation calculates this value using the formula described above. If any of the Start Read, Stop Read, Total or Energy attributes in the reading already contain a value, this validation does NOT overwrite those values.

If the usage record is identified as being an "out of order" read and this validation is defined, the usage attributes are adjusted based on the same rules listed above.

This validation is only applicable to consumption and TOU readings, and overrides **Calculate Consumption** validations. For example, if the Calculate Consumption validation is defined along with this validation, and the Unit of Measure parameter matches the unit of measure for the incoming reading, the Calculate Demand validation is executed instead of the Calculate Consumption validation.

Calculate Demand validations use the following parameters:

- **Exception Code**: The exception triggered by a failed validation of this type.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all demand UOMs. If this validation is used in the same validation group as the **Calculate Consumption** validation, specifying the unit of measure is required.

Calculate Consumption

Calculate Consumption validations calculate consumption for the meter for a specified unit of measure (UOM). The consumption calculation is [Stop Reading - Start Reading] multiplied by the Meter Multiplier. If the Total Value (TOTALVAL) is provided in the reading, the consumption calculation is Total Reading multiplied by the Meter Multiplier.

> **Note**: If the current reading or the Meter Configuration record for the meter includes a Transformer Loss Factor, the consumption calculation is [Stop Reading - Start Reading] * Meter Multiplier * Transformer Loss Factor. If a Transformer Loss Factor is not found, a value of 1 will be used as the default.

Under certain conditions, a meter should report negative consumption, such as when it is installed backwards (reverse rotations). To account for this, this validation includes a Rollover (Usage) Tolerance parameter. This Tolerance is a percentage that essentially specifies the maximum amount of usage expected in a given period. For example, the highest reading possible on a four-dial meter is 9999. If a four-dial meter's Rollover Tolerance is set to 50%, the maximum of positive usage expected is 5000 KWH (assuming a meter multiplier of 1). If data arrived with a start reading of 9000 and a stop reading of 1000, the usage would be 2000 and would be below the Rollover Tolerance of 5000. This is considered a valid rollover and usage would be stored as 2000 KWH.

However, if data arrived with start reading of 4000 and stop reading of 9999, the usage would be 5999, which exceeds the Rollover Tolerance, and would therefore by considered negative usage not a rollover. In this case, the usage would be stored as -4001 (on the assumption that the meter was spun backward from 4000 to 9999). This usage could then be flagged as invalid by other Oracle Utilities Meter Data Management business rules such as the zero or negative consumption rule.

Calculate Consumption validations use the following parameters:

- **Rollover Tolerance**: The tolerance used to determine if the usage is reasonable. This is intended to help determine if the meter has truly rolled over or is reporting bad data.
- **Unit of Measure**: The unit of measure for which consumption is calculated. If not supplied, consumption is calculated for readings of all UOMs.

Meter Multiplier

Meter Multiplier validations verify that the Meter Multiplier value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Meter Multiplier values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Meter Multiplier validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Zero Consumption

Zero Consumption validations check for zero usage for the current meter reading. If the usage is less than or equal to zero (0), the meter reading fails this validation, and an exception is generated.

Zero Consumption validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Number of Dials

Number of Dials validations verify that the Number of Dials value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Number of Dials values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Number of Dials validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type

Fill Missing Start Time and Value

Fill Missing Start Time and Value validations determines the Start Time and Start Value of a reading if not provided, based on the Stop Time and Stop Value of the previous reading. The Start Time of the reading will be equal to the Stop Time of the previous reading plus one second.

Fill Missing Start Time and Value validations use the following parameters:

- **Assume First Reading**: A flag that indicates (Yes or No) if the validation should assume the existence of a previous reading. If the parameter is set to Yes and no previous reading is found, the system will use zero (0) as the Start Reading a Start Time equal to the Start Time of the Meter Configuration record for the meter.
- **Require Previous Final Usage**: A flag that indicates (Yes or No) whether the rule will use only FINAL previous readings when calculating the start time and value for the usage record. If set to "No" (the default), the rule will use either FINAL or STAGING previous readings.

Out Of Order

Out of Order validations allow for consumption readings to be received "out of order," for situations when a reading comes in that overlaps with a reading already in the system. When this validation is enabled, the Start Time and Start Reading of any out of order readings will be adjusted based on the Stop Time and Stop Reading of existing readings in the system.

For example, in the following scenario, the third (3) reading will be corrected.

Out of order reading imported:

Reading	Start Time	Implied Value based in previous reading	Stop Time	Value
1	01/01/07 1:00	9800	01/02/07 1:00	10000
2	01/02/07 1:01	10000	01/03/07 1:00	12000
3	01/02/07 1:01	10000*	01/04/07 1:00	14000

* Bad start reading and date/time

Out of order reading is imported, Start Time and Start Reading is corrected:

Reading	Start Time	Implied Value based in previous reading	Stop Time	Value
1	01/01/07 1:00	9800	01/02/07 1:00	10000*
2	01/02/07 1:01	10000	01/03/07 1:00	12000
3	01/03/07 1:01	12000**	01/04/07 1:00	14000

** Corrected Start reading and values

In the above example, the validation will trigger an exception for the third reading stating "the start date/time and values were adjusted because an out of order read was received." The system also marks any corrected usage as replaced.

If this validation is not configured, any out of order readings are rejected.

Out of Order validations use the following parameters:

- **Exception Code**: The exception code for exceptions generated by this validation. This should always be set to "OUTOFORDER_ADJUSTMENT."
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

High/Low Consumption

High/Low Consumption validations compare cumulative consumption for the meter to historical data for the same period during the previous year (if not available, use the previous reading). This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the Average Daily Usage (ADU) for the current reading. ADU is equal to the Total Energy for the reading, divided by the number of days for the reading. ADU is typically measured in KWH.
- Calculate the historical ADU for the meter. The system first looks for data from last year for the same period. If the minimum number of usage readings from last year cannot be found, the system will look for the most recent reading to finding the minimum number of days. If the required numbers of days of usage cannot be found in either place, the system skips this validation.

  Note: When performing the High/Low Consumption check, the system only looks for last year's historical data within the current reading's calendar days. For example if performing this validation on a July 2006 reading, the system would check for a July 2005 reading for comparison.

- Compare the ADU of the current meter reading to the historical ADU.

If the ADU for the current meter reading falls outside the user-defined High/Low tolerances in comparison to the historical ADU, the meter reading fails this validation, and an exception is generated.

High/Low Consumption validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **High Tolerance**: The upper tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation (Default: 200%)
- **Low Tolerance**: The lower tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation (Default: 40%)
- **Minimum Days**: The minimum number of days used to calculate historical ADU when performing this validation
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

High/Low - Daily

High/Low - Daily validations compare the Average Daily Usage (ADU) for the current reading with historical data. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the Average Daily Usage (ADU) for the current reading. ADU is equal to the Total Energy for the reading, divided by the number of days for the reading. ADU is typically measured in KWH.
- Calculate the historical ADU. The system first looks for data from last year for the same period.If the minimum number of usage days from last year cannot be found, the system will look for the most recent reading to finding the minimum number of days. If the required numbers of days of usage cannot be found in either place, the system skips this validation.

  To determine the specific date range used to calculate the historical ADU, the validation does the following:

  - Subtracts one year from the Read Stop Time of the current reading. This is referred to as the Historical Stop Date.

- Divides the Historical Number of Days parameter (see below) by 2 (rounding down in all cases).
- Add the result to the Historical Stop Date to get the Stop date of the historical range
- Subtract the result from the reading Historical Stop Date to get the Start date of the historical range
- The historical ADU is the ADU of the historical range.

  Note: Usage must have a Reading Category of FINAL, and cannot have been edited (User Edited = No) or estimated (Estimated = No) in order to be used in calculating historical ADU.

  Example: When validating a reading with a Reading Stop Time of 7/18/2006 and a Minimum Number of Days equal to 30:

  - The Historical Stop Date would be 7/18/2005.
  - The Start date of the historical range would be 7/4/2005 (7/18/2006 - 14 days)
  - The Stop date of the Historical range would be 8/2/2006 (7/18/2005 + 15 days)

- Compare the ADU of the current meter reading to the historical ADU.

If the ADU for the current meter reading falls outside the user-defined High/Low tolerances in comparison to the historical ADU, the meter reading fails this validation, and an exception is generated.

High/Low - Daily validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **No Data Found Exception Code**: The exception code generated when no historical data can be found
- **High Tolerance**: The upper tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation (Default: 200%)
- **Low Tolerance**: The lower tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation (Default: 40%)
- **Minimum Days**: The minimum number of days of usage required to calculate historical ADU when performing this validation
- **Historical Number of Days**: The number of days used to calculate the historical date range when calculating historical ADU
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

High/Low - Monthly

High/Low - Monthly validations compare the ADU for the current reading with historical data. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the ADU for the current reading.
- Calculate the historical ADU (based on monthly readings). The system first looks for data from last year for the same period. If the minimum number of usage days from last year cannot be found, the system will look for the most recent reading to finding the minimum number of days. If the required numbers of days of usage cannot be found in either place, the system skips this validation.

  To determine the specific date range used to calculate the historical ADU, the validation does the following:

- Subtracts one year from the Read Start Time of the current reading, and shifts the result to the first day of the month. This is referred to as the Historical Start Date.
- Subtracts one year from the Read Stop Time of the current reading, and shifts the result to the last day of the month. This is referred to as the Historical Stop Date.
- Find all readings that have a Read Start Time or Read Stop Time between the Historical Start Date and Historical Stop Date.
- The historical ADU is the average ADU of all the readings whose Read Start Time or Read Stop Time fall within the historical date range.

  Note: Usage must have a Reading Category of FINAL, and cannot have been edited (User Edited = No) or estimated (Estimated = No) in order to be used in calculating historical ADU.

- Compare the ADU of the current meter reading to the historical ADU.

If the ADU for the current meter reading falls outside the user-defined High/Low tolerances in comparison to the historical ADU, the meter reading fails this validation, and an exception is generated.

High/Low - Monthly validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **No Data Found Exception Code**: The exception code generated when no historical data can be found
- **High Tolerance**: The upper tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation (Default: 200%)
- **Low Tolerance**: The lower tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation (Default: 40%)
- **Minimum Days**: The minimum number of days of historical usage required to calculate historical ADU when performing this validation
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Demand High/Low - Daily

Demand High/Low - Daily validations compare the maximum (peak) demand for the current reading with historical data. This validation is similar to the High/Low Interval validation, except that it compares peak demand (maximum KW) for a reading rather than energy. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the peak demand for the current reading.
- Calculate the historical peak. The system first looks for data from last year for the same period.If the minimum number of usage days from last year cannot be found, the system will look for the most recent reading to finding the minimum number of days. If the required numbers of days of usage cannot be found in either place, the system skips this validation.

  To determine the specific date range used to calculate the historical peak, the validation does the following:

  - Subtracts one year from the Read Stop Time of the current reading. This is referred to as the Historical Stop Date.
  - Divides the Minimum Number of Days parameter (see below) by 2 (rounding down in all cases).
  - Add the result to the Historical Stop Date to get the Stop date of the historical range

- Subtract 1 from the result and subtract the difference from the reading Historical Stop Date to get the Start date of the historical range
- The historical peak is the peak demand within the historical range.

  Example: When validating a reading with a Reading Stop Time of 7/18/2006 and a Minimum Number of Days equal to 30:

  - The Historical Stop Date would be 7/18/2005.
  - The Start date of the historical range would be 7/4/2005 (7/18/2006 - 14 days)
  - The Stop date of the Historical range would be 8/2/2006 (7/18/2005 + 15 days)

- Compare the peak of the current meter reading to the historical peak.

If the demand peak for the current meter reading falls outside the user-defined High/Low tolerances in comparison to the historical demand peak, the meter reading fails this validation, and an exception is generated.

Demand High/Low - Daily validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **No Data Found Exception Code**: The exception code generated when no historical data can be found
- **High Tolerance**: The upper tolerance (expressed as a percentage) within which the maximum (peak) for the current meter reading must fall in order to pass the validation (Default: 200%)
- **Low Tolerance**: The lower tolerance (expressed as a percentage) within which the maximum (peak) for the current meter reading must fall in order to pass the validation (Default: 40%)
- **Minimum Days**: The minimum number of days used to calculate historical peak when performing this validation
- **Historical Number of Days**: The number of historical days to average when performing this validation
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Demand High/Low - Monthly

Demand High/Low - Monthly validations compare the maximum (peak) demand for the current reading with historical data. This validation is similar to the High/Low Interval validation, except that it compares peak demand (maximum KW) for a reading rather than energy. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the peak demand for the current reading.
- Calculate the historical peak (based on monthly readings). The system first looks for data from last year for the same period. If the minimum number of usage days from last year cannot be found, the system will look for the most recent reading to finding the minimum number of days. If the required numbers of days of usage cannot be found in either place, the system skips this validation.

  To determine the specific date range used to calculate the historical peak, the validation does the following:

  - Subtracts one year from the Read Start Time of the current reading, and shifts the result to the first day of the month. This is referred to as the Historical Start Date.

- Subtracts one year from the Read Stop Time of the current reading, and shifts the result to the last day of the month. This is referred to as the Historical Stop Date.
- Find all readings that have a Read Start Time or Read Stop Time between the Historical Start Date and Historical Stop Date.
- The historical peak is the highest demand peak of all the readings whose Read Start Time or Read Stop Time fall within the historical date range.

- Compare the peak of the current meter reading to the historical peak.

If the demand peak for the current meter reading falls outside the user-defined High/Low tolerances in comparison to the historical demand peak, the meter reading fails this validation, and an exception is generated.

Demand High/Low - Monthly validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **No Data Found Exception Code**: The exception code generated when no historical data can be found
- **High Tolerance**: The upper tolerance (expressed as a percentage) within which the peak for the current meter reading must fall in order to pass the validation (Default: 200%)
- **Low Tolerance**: The lower tolerance (expressed as a percentage) within which the peak for the current meter reading must fall in order to pass the validation (Default: 40%)
- **Minimum Days**: The minimum number of days used to calculate historical peak when performing this validation
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Transformer Loss Factor

Transformer Loss Factor validations verify that the Transformer Loss Factor value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Transformer Loss Factor values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Transformer Loss Factor validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Include TLF**: A flag that indicates whether or not (Yes or No) to include the transformer loss factor when calculating consumption and energy for the reading.
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Serial Number

Serial Number validations verify that the Serial Number value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Serial Number values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation.

Serial Number validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type

Rate

Rate validations perform validations configured in a specified Oracle Utilities Rules Language rate schedule.

Rate validations use the following parameters:

- **Rate**: The rate schedule executed to perform the validation, in the following format:

  <OPCO>:<JURIS>:<RATEFORMNAME>

  where:

  - <OPCO> is the Operating Company for the rate form
  - <JURIS> is the Jurisdiction for the rate form
  - <RATEFORMNAME> is the Rate Form Name for the rate form
- **Validate Only**: A flag that indicates (Yes or No) if the custom validation will only perform validation on the reading (Yes), or if it will validate and (conditionally) manipulate the reading (No). This setting applies to Interval readings only. The default is Yes.
- **Use Cut in Memory**: A flag that indicates (Yes or No) if the validation will use the reading in memory (Yes), or access the reading from the database (No). When set to Yes, the reading is passed to the Rules Language as a pre-defined identifier (RAW_DATA_HNDL) which can be used to access the reading without the need to load the reading from the database. This can enhance the performance of custom validations. The default is No.

TOU Rules

TOU rule validations are those that apply to time of use meter readings, and include the following:

- **Meter Changeout Start Time and Value**
- **Calculate Demand**
- **Calculate Consumption**
- **Meter Multiplier**
- **Off Season Period with Usage**
- **Zero Consumption**
- **Number of Dials**
- **TOU Schedule**
- **Fill Missing Start Time and Value**
- **Out Of Order**
- **Out Of Order**
- **High/Low TOU**
- **Transformer Loss Factor**
- **Serial Number**
- **Rate**

Meter Changeout Start Time and Value

Meter Changeout Start Time and Value validations calculate the start time and start values for readings that overlap with a "Meter Changeout" and that are missing the start time and/or start value. A meter changeout occurs when the current physical meter that is installed at a service point is swapped out for a new physical meter. The logical data channel (Meter Data Channel) may still exist, but a new physical device is capturing usage information. This is represented in Oracle Utilities Meter Data Management by the creation of a new Meter Configuration record for the

logical meter that specifies the new physical meter. When a meter changeout is detected for a reading, Oracle Utilities Meter Data Management needs to take the new physical meter into account when calculating the missing start time and value for consumption and TOU readings. The start time for a meter changeout reading can be based on the Stop Time of the previous reading (plus one second) for the meter or on the Start Time of the most recent Meter Configuration record. The start value for a meter changeout reading can be based on the Stop Value of the previous reading for the meter or can be set to zero (0).

Meter Changeout Start Time and Value validations use the following parameters:

- **Exception Code**: The exception triggered by a failed validation of this type.
- **Start Time**: Specifies how to calculate the Start Time for the usage record. Valid values include:
  - **Use Previous Stop Time**: Set the Start Time of the reading equal to the Stop Time of the previous meter reading plus one second. If no previous reading can be found for the meter, a critical exception is generated.
  - **Use Meter Configuration Record**: Use the Start Time of the most recent Meter Configuration record for the meter.
- **Start Value**: Specifies how to calculate the Start Value for the usage record. Valid values include:
  - **Use Previous Stop Value**. Set the Start Value of the reading equal to the Stop Value of the previous meter reading. If no previous reading can be found for the meter, a critical exception is generated.
  - **Use Zero**: Set the Start Value of the reading to zero (0).
- **Require Previous Final Usage**: A flag that indicates (Yes or No) whether the rule will use only FINAL previous readings when calculating the start time and value for the usage record. If set to "No" (the default), the rule will use either FINAL or STAGING previous readings.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Calculate Demand

Calculate Demand validations calculate the total demand for consumption and time of use readings from meters that record “demand” units of measure (units of measure for which the Aggregate Method is set to “Average” in the Unit of Measure table). The demand calculation is as follows:

Demand Value = Stop Read * Meter Multiplier

When this validation rule is executed, the following attributes are calculated as follows and stored only if they do NOT have a value already:

- Start Read = NULL
- Stop Read = Value from the read
- Total (Demand Value) = Stop Read * Meter Multiplier
- Energy = NULL

For example, if the Total value is empty, the validation calculates this value using the formula described above. If any of the Start Read, Stop Read, Total or Energy attributes in the reading already contain a value, this validation does NOT overwrite those values.

If the usage record is identified as being an “out of order” read and this validation is defined, the usage attributes are adjusted based on the same rules listed above.

This validation is only applicable to consumption and TOU readings, and overrides **Calculate Consumption** validations. For example, if the Calculate Consumption validation is defined along

with this validation, and the Unit of Measure parameter matches the unit of measure for the incoming reading, the Calculate Demand validation is executed instead of the Calculate Consumption validation.

Calculate Demand validations use the following parameters:

- **Exception Code**: The exception triggered by a failed validation of this type.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all demand UOMs. If this validation is used in the same validation group as the **Calculate Consumption** validation, specifying the unit of measure is required.

Calculate Consumption

Calculate Consumption validations calculate consumption for the meter for a specified unit of measure (UOM). The consumption calculation is [Stop Reading - Start Reading] multiplied by the Meter Multiplier.

> **Note**: If the current reading or the Meter Configuration record for the meter includes a Transformer Loss Factor, the consumption calculation is [Stop Reading - Start Reading] * Meter Multiplier * Transformer Loss Factor. If a Transformer Loss Factor is not found, a value of 1 will be used as the default.

Under certain conditions, a meter should report negative consumption, such as when it is installed backwards (reverse rotations). To account for this, this validation includes a Rollover (Usage) Tolerance parameter. This Tolerance is a percentage that essentially specifies the maximum amount of usage expected in a given period. For example, the highest reading possible on a four-dial meter is 9999. If a four-dial meter's Rollover Tolerance is set to 50%, the maximum of positive usage expected is 5000 KWH (assuming a meter multiplier of 1). If data arrived with a start reading of 9000 and a stop reading of 1000, the usage would be 2000 and would be below the Rollover Tolerance of 5000. This is considered a valid rollover and usage would be stored as 2000 KWH.

However, if data arrived with start reading of 4000 and stop reading of 9999, the usage would be 5999, which exceeds the Rollover Tolerance, and would therefore by considered negative usage not a rollover. In this case, the usage would be stored as -4001 (on the assumption that the meter was spun backward from 4000 to 9999). This usage could then be flagged as invalid by other Oracle Utilities Meter Data Management business rules such as the zero or negative consumption rule.

Calculate Consumption validations use the following parameters:

- **Rollover Tolerance**: The tolerance used to determine if the usage is reasonable. This is intended to help determine if the meter has truly rolled over or is reporting bad data.
- **Unit of Measure**: The unit of measure for which consumption is calculated. If not supplied, consumption is calculated for readings of all UOMs.

Meter Multiplier

Meter Multiplier validations verify that the Meter Multiplier value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Meter Multiplier values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Meter Multiplier validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Off Season Period with Usage

Off Season Period with Usage validations check for usage associated with an off season TOU period. A TOU period is considered "off season" if it is associated with a Season Schedule other than the current season. If usage for an off season TOU period is greater than zero (0), the meter reading fails this validation, and an exception is generated.

Off Season Period with Usage validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Zero Consumption

Zero Consumption validations check for zero usage for the current meter reading. If the usage is less than or equal to zero (0), the meter reading fails this validation, and an exception is generated.

Zero Consumption validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Number of Dials

Number of Dials validations verify that the Number of Dials value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Number of Dials values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Number of Dials validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type

TOU Schedule

TOU Schedule validations verify that the TOU schedule supplied in the current meter reading matches that of the Meter Configuration record for the meter. Specifically, this means TOU readings for all TOU periods defined for the meter must be included in the reading. If the TOU schedule of the meter reading and Meter Configuration record do not match., the meter reading fails this validation, and an exception is generated.

TOU Schedule validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Fill Missing Start Time and Value

Fill Missing Start Time and Value validations determines the Start Time and Start Value of a reading if not provided, based on the Stop Time and Stop Value of the previous reading.

Fill Missing Start Time and Value validations use the following parameters:

- **Assume First Reading**: A flag that indicates (Yes or No) if the validation should assume the existence of a previous reading. If the parameter is set to Yes and no previous reading is found, the system will use zero (0) as the first reading and an arbitrary start date.

- **Require Previous Final Usage**: A flag that indicates (Yes or No) whether the rule will use only FINAL previous readings when calculating the start time and value for the usage record. If set to "No" (the default), the rule will use either FINAL or STAGING previous readings.

Out Of Order

Out of Order validations allow for TOU readings to be received "out of order," for situations when a reading comes in that overlaps with a reading already in the system. When this validation is enabled, the Start Time and Start Reading of any out of order readings will be adjusted based on the Stop Time and Stop Reading of existing readings in the system.

For example, in the following scenario, the third (3) reading will be corrected.

Out of order reading imported:

Reading	Start Time	Implied Value based in previous reading	Stop Time	Value
1	01/01/07 1:00	9800	01/02/07 1:00	10000
2	01/02/07 1:01	10000	01/03/07 1:00	12000
3	01/02/07 1:01	10000*	01/04/07 1:00	14000

* Bad start reading and date/time

Out of order reading is imported, Start Time and Start Reading is corrected:

Reading	Start Time	Implied Value based in previous reading	Stop Time	Value
1	01/01/07 1:00	9800	01/02/07 1:00	10000*
2	01/02/07 1:01	10000	01/03/07 1:00	12000
3	01/03/07 1:01	12000**	01/04/07 1:00	14000

** Corrected Start reading and values

In the above example, the validation will trigger an exception for the third reading stating "the start date/time and values were adjusted because an out of order read was received." The system also marks any corrected usage as replaced.

If this validation is not configured, any out of order readings are rejected.

Out of Order validations use the following parameters:

- **Exception Code**: The exception code for exceptions generated by this validation. This should always be set to "OUTOFORDER_ADJUSTMENT."
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Totalize Meter

Totalize Meter validations verify that the total of the TOU period readings match the Total for the current meter reading ((Stop Reading - Start Reading)* Meter Multiplier). If the totals of the TOU readings and the Total do not match, the meter reading fails this validation.

Totalize Meter validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

High/Low TOU

High/Low TOU validations compare total cumulative consumption (summary records across TOU periods) for the meter to historical data for the same period during the previous year. If data from the previous year is not available, use the previous reading. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the Average Daily Usage (ADU) for the current reading. ADU is equal to the Total Energy for the reading, divided by the number of days for the reading. ADU is typically measured in KWH.
- Calculate the historical ADU for the meter. The system first looks for data from last year for the same period. If the minimum number of usage readings from last year cannot be found, the system will look for the most recent reading to finding the minimum number of days. If the required numbers of days of usage cannot be found in either place, the system skips this validation.

  Note: When performing the High/Low Consumption check, the system only looks for last year's historical data within the current reading's calendar days. For example if performing this validation on a July 2006 reading, the system would check for a July 2005 reading for comparison.
- Compare the ADU of the current meter reading to the historical ADU.

If the ADU for the current meter reading falls outside the user-defined High/Low tolerances, the meter reading fails this validation, and an exception is generated.

High/Low TOU validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **High Tolerance**: The upper tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation (Default: 200%)
- **Low Tolerance**: The lower tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation (Default: 40%)
- **Minimum Days**: The minimum number of days used to calculate historical ADU when performing this validation
- **Unit of Measure**: The unit of measure for which the validation is performed.If not supplied, the validation is applied to readings of all UOMs.

Transformer Loss Factor

Transformer Loss Factor validations verify that the Transformer Loss Factor value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Transformer Loss Factor values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Transformer Loss Factor validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Include TLF**: A flag that indicates whether or not (Yes or No) to include the transformer loss factor when calculating consumption and energy for the reading.
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Serial Number

Serial Number validations verify that the Serial Number value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Serial Number values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Serial Number validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type

Rate

Rate validations perform validations configured in a specified Oracle Utilities Rules Language rate schedule.

Rate validations use the following parameters:

- **Rate**: The rate schedule executed to perform the validation, in the following format:

  <OPCO>:<JURIS>:<RATEFORMNAME>

  where:

  - <OPCO> is the Operating Company for the rate form
  - <JURIS> is the Jurisdiction for the rate form
  - <RATEFORMNAME> is the Rate Form Name for the rate form
- **Validate Only**: A flag that indicates (Yes or No) if the custom validation will only perform validation on the reading (Yes), or if it will validate and (conditionally) manipulate the reading (No). This setting applies to Interval readings only. The default is Yes.
- **Use Cut in Memory**: A flag that indicates (Yes or No) if the validation will use the reading in memory (Yes), or access the reading from the database (No). When set to Yes, the reading is passed to the Rules Language as a pre-defined identifier (RAW_DATA_HNDL) which can be used to access the reading without the need to load the reading from the database. This can enhance the performance of custom validations. The default is No.

Interval Rules

Interval rule validations are those that apply to interval meter readings, and include the following:

- **Partial Replacement Flag**
- **Replacement**
- **Spike**
- **High/Low Interval**
- **Interval Gap**
- **Meter Multiplier**
- **Number of Dials**
- **Serial Number**
- **Energy Sum Check**
- **Energy Sum Check 2**
- **Calculate Energy**
- **Zero Energy**
- **Zero Energy from Intervals**
- **KVARH Check**

- **Transformer Loss Factor**
- **Register Reading**
- **Test Mode**
- **Consecutive Zeros**
- **Consecutive Missing**
- **Percent Change**
- **Load Factor Check**
- **Rate**

Partial Replacement Flag

Partial Replacement Flag validations allow you to specify the Exception Code that will be generated if a partial replacement occurs. The Exception Type (ERROR or INFORMATIONAL) for the Exception Code for the validation (see below) determines whether the Reading Category of overlapping readings are set to STAGING or FINAL. Partial replacements are only allowed if the Overlap parameter on the Replacement validation (see below) is set to **Allow All**.

Partial Replacement Flag validations use the following parameters:

- **Exception Code**: The exception code for exceptions generated by this validation

Replacement

Replacement validations define how the Oracle Utilities Meter Data Management system will handle replacement readings. A replacement reading is any reading whose Read Start Time and/or Read Stop Time overlap in any way with an existing reading for the same meter.

Replacement validations use the following parameters:

- **Overlap**: Defines how replacement reads are handled:
  - **Allow All**: Allow replacement reads, including partial replacements. The **Replacement Flag** (MDM>All Rules) and **Partial Replacement Flag** (MDM>Interval Rules) validations dictate the type of exception generated by replacement reads. See **Replacement Reading Validations** on page 5-46 in the *Oracle Utilities Meter Data Management Installation and Configuration Guide* for more information about rules regarding replacement readings.
  - **Reject All**: Reject replacement reads, unless the Start Time and Stop of the reading exactly match a single existing reading, or if the reading would replace the latest reading in the database. (Default)
  - **Reject Manual**: Allow replacement reads, including partial replacements **unless** the reading that would replaced was manually edited (i.e. the USEREDITED value is set to "Y") in which case it will be rejected. This is intended to prevent manual changes from being automatically overwritten.

Spike

Spike validations examine interval data to identify intervals with suspiciously high usage relative to surrounding intervals. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Identify the highest and third-highest peaks for each 24-hour period with the current reading.
- For each 24-hour period with the current reading, calculate the value of the highest peak minus the third-highest peak, divided by the third-highest peak.

If the result of the calculation for any 24-hour period within the current meter reading is greater than the specified tolerance, the meter reading fails this validation, and an exception is generated.

Spike validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Tolerance**: The value against which the data is compared (per the calculation described above) to determine if the reading contains spikes (Default: 1.8)
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

High/Low Interval

High/Low Interval validations compare cumulative consumption for the meter to historical data for the same period during the previous year (if not available, use the previous month). This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the Average Daily Usage (ADU) for the current reading. ADU is equal to the Total Energy for the reading, divided by the number of days for the reading. ADU is typically measured in KWH.
- Calculate the historical ADU for the meter. The system first looks for data from last year for the same period. If the minimum number of usage readings from last year cannot be found, the system will look for the most recent reading to finding the minimum number of days. If the required numbers of days of usage cannot be found in either place, the system skips this validation.

  Note: When performing the High/Low Consumption check, the system only looks for last year's historical data within the current reading's calendar days. For example if performing this validation on a July 2006 reading, the system would check for a July 2005 reading for comparison.
- Compare the ADU of the current meter reading to the historical ADU.

If the ADU for the current meter reading falls outside the user-defined tolerance, the meter reading fails this validation, and an exception is generated.

High/Low Interval validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Tolerance**: The tolerance (expressed as a percentage) within which the ADU for the current meter reading must fall in order to pass the validation
- **Minimum Days**: The minimum number of days used to calculate historical ADU when performing this validation
- **Include when Register Segment**: Specifies whether or not to include this validation if the reading contains only register reading (no interval values)
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Interval Gap

Interval Gap validations examine readings for gaps (missing interval values). If the reading contains gaps that fall within specified thresholds, the gaps are estimated. If the reading contains gaps that exceed the specified thresholds, reading fails the validation, and an exception is generated.

Note: This validation estimates missing reads and interval data that include non-normal data. The validation identifies all missing interval data that does not have a "normal" interval status code. (Normal being denoted by a status code of NULL " " or "A"). Also, when the validation uses historical data as a

basis for estimation it will only use data with a Usage Category of Final and "normal" status code

See **Oracle Utilities Meter Data Management Validations and Estimations** on page 5-44 in the *Oracle Utilities Meter Data Management Installation and Configuration Guide* for details concerning how estimations are performed.

Interval Gap validations use the following parameters:

- **Average**: A flag that indicates (Yes or No) whether or not averages of intervals should be used to estimate missing values
- **Days to Average**: The number of days to average when using averages to estimate missing data
- **Interpolation**: A flag that indicates (Yes or No) whether or not linear interpolation should be used to estimate missing values
- **Maximum Hours**: The maximum number of hours to be interpolated when both Average and Interpolation are set to yes. (Default: 2)
- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type.
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Meter Multiplier

Meter Multiplier validations verify that the Meter Multiplier value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Meter Multiplier values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Meter Multiplier validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Number of Dials

Number of Dials validations verify that the Number of Dials value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Number of Dials values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Number of Dials validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type

Serial Number

Serial Number validations verify that the Serial Number value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Serial Number values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Serial Number validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type

Energy Sum Check

Energy Sum Check validations check the difference between the energy use recorded in the intervals and the energy use defined by consumption values (based on interval meter register readings) over the same time period. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Sum the energy use recorded in the interval values
- Calculate the energy use records by the meter ((Stop Reading - Start Reading)* Meter Multiplier), accounting for any possible meter rollover
- Compare the energy use recorded in the interval values with the energy use recorded by the meter.

If the difference is greater than a user-specified tolerance, the reading fails this validation, and an exception is generated.

Energy Sum Check validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Tolerance (Integer)**: The tolerance (expressed as a number) within which the difference between recorded energy usage and the consumption values ((Stop Reading - Start Reading) * Meter Multiplier) for the reading must fall in order to pass the validation
- **Tolerance (Percentage)**: The tolerance (expressed as a percentage) within which the difference between recorded energy usage and the consumption values ((Stop Reading - Start Reading) * Meter Multiplier) for the reading must fall in order to pass the validation
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Energy Sum Check 2

Energy Sum Check 2 validations check the difference between the energy use defined by consumption values (based on interval meter register readings) and the energy use recorded in the intervals to a multiple of the meter multiplier (typically 2). The validation uses the Meter Multiplier supplied in the reading, or the Meter Multiplier defined in the Meter Configuration record for the meter. If no Meter Multiplier can be found, this validation is skipped. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Sums the energy use recorded in the interval values
- Calculates the energy use records by the meter ((Stop Reading - Start Reading)* Meter Multiplier), accounting for any possible meter rollover
- Compares the total to the Total Energy value supplied in the reading.

If the difference is greater than to the Multiplies of the Meter Multiplier parameter, the reading fails this validation, and an exception is generated.

Energy Sum Check 2 validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Multiples of the Meter Multiplier**: The multiple of the meter multiplier used in the validation
- **Include when Register Segment**: Specifies whether or not to include this validation if the reading contains only register reading (no interval values)
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Calculate Energy

Calculate Consumption validations calculate consumption based on the interval register readings of the meter for a specified unit of measure (UOM). The consumption calculation is [Stop Reading - Start Reading] multiplied by the Meter Multiplier.

> **Note**: If the current reading or the Meter Configuration record for the meter includes a Transformer Loss Factor, the consumption calculation is [Stop Reading - Start Reading] * Meter Multiplier * Transformer Loss Factor. If a Transformer Loss Factor is not found, a value of 1 will be used as the default.

Under certain conditions, a meter should report negative consumption, such as when it is installed backwards (reverse rotations). To account for this, this validation includes a Rollover (Usage) Tolerance parameter. This Tolerance is a percentage that essentially specifies the maximum amount of usage expected in a given period. For example, the highest reading possible on a four-dial meter is 9999. If a four-dial meter's Rollover Tolerance is set to 50%, the maximum of positive usage expected is 5000 KWH (assuming a meter multiplier of 1). If data arrived with a start reading of 9000 and a stop reading of 1000, the usage would be 2000 and would be below the Rollover Tolerance of 5000. This is considered a valid rollover and usage would be stored as 2000 KWH.

Calculate Energy validations use the following parameters:

- **Rollover Tolerance**: The tolerance used to determine if the usage is reasonable. This is intended to help determine if the meter has truly rolled over or is reporting bad data.
- **Unit of Measure**: The unit of measure for which energy is calculated. If not supplied, energy is calculated for readings of all UOMs.

Zero Energy

Zero Energy validations check for zero usage for the interval register readings of the current meter reading. If the usage is less than or equal to zero (0), the meter reading fails this validation, and an exception is generated.

Zero Energy validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Zero Energy from Intervals

Zero Energy from Intervals validations check for zero usage from the sum of the interval values of the current meter reading. If the usage is less than or equal to zero (0), the meter reading fails this validation, and an exception is generated.

Zero Energy from Intervals validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Include when Register Segment**: Specifies whether or not to include this validation if the reading contains only register reading (no interval values)
- **Unit of Measure**: The unit of measure for which the validation is performed. This validation should be used only with kilowatts (KW) and kilowatt hours (KWH). It should not be used with any other units of measure.

KVARH Check

KVARH Check validations identify intervals where reactive load (kVARh) is present and active load (kWh) is not, indicating a suspicious usage pattern and possible meter malfunction. This validation is only performed if kVARh data is available. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Identify kWh intervals with zero consumption in the reading.
- Check for a corresponding kVARh interval

If the corresponding kVARh interval is greater than a user-specified threshold, the reading fails the validation, and an exception is generated.

KVARH Check validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **No Data Found Exception Code**: The exception code generated when no kVARh data can be found that corresponds to the meter reading
- **Tolerance**: The tolerance (represented as a number of pulses) within which the difference between a zero kWh interval and its corresponding kVARh interval for the reading must fall in order to pass the validation. (Default: 4)
- **Include when Register Segment**: Specifies whether or not to include this validation if the reading contains only register reading (no interval values)

Transformer Loss Factor

Transformer Loss Factor validations verify that the Transformer Loss Factor value supplied in the current meter reading matches that of the Meter Configuration record for the meter. If the Transformer Loss Factor values of the meter reading and Meter Configuration record do not match, the meter reading fails this validation, and an exception is generated.

Transformer Loss Factor validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Include TLF**: A flag that indicates whether or not (Yes or No) to include the transformer loss factor when calculating consumption and energy for the reading.
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Register Reading

Register Reading validations estimate interval values for interval readings that contain register readings only (i.e. they do not contain interval values). Such readings are referred to as "register segments." These validations also specify whether or not the application should attempt to merge register segments and interval segments (readings containing interval values but not register readings).

Register Reading validations use the following parameters:

- **Value Filling Method**: The method by which interval values are estimated for the register reading. Valid values include:
  - **Zero**: Set all interval values for the reading to zero (0)
  - **Average**: Set all interval values for the reading to the average value, based on the register readings (((Stop Reading - Start Reading) * Meter Multiplier) / number of intervals).
  - **Profile**: Assign interval values based on the profile meter associated to the meter reading
- **Merge Segments**: A flag that indicates whether or not (Yes or No) to merge register segments with corresponding interval segments for the same reading.
- **Segments Merged Exception Code**: The exception code for exceptions that occur due to merged segments.

- **Missing Segment Exception Code**: The exception code for exceptions that occur due to missing segments (when attempting to merge)
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Test Mode

Test Mode validations check that an incoming reading does not contain more than a specified number of intervals that are set to "test mode" (designated by an extended status code of 2048). In the LSM format, this is designated as follows:

```
<INTS>
     <I V="40" S="" E="2048"/>
```

If the reading contains more "test mode" intervals than a user-specified tolerance, the reading fails this validation, and an exception is generated.

Test Mode validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by a failed validation of this type
- **Maximum Limit**: The maximum number of "test mode" intervals allowed in a single reading.
- **Unit of Measure**: The unit of measure for which the validation is performed. If not supplied, the validation is applied to readings of all UOMs.

Consecutive Zeros

Consecutive Zero validations calculates the number of consecutive zero interval values in the current reading and validates that number does not exceed the user-defined maximum. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the number of consecutive zero interval values. Zero interval values are those where the value is 0.
- If the number of consecutive zero interval values exceeds the user-defined Maximum Consecutive Zero, check if an Outage Event of the type specified under Meter Event has occurred by checking the Physical Meter Event History table for events of the user-defined Meter Event within the Start and Stop Time of the meter reading.
    - If an event of that type is detected, an exception based on the user-defined Outage Exception Code is generated.
    - If no outage event is detected, an exception based on the user-defined Exception Code is generated.

Consecutive Zero validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation
- **Maximum Consecutive Zeros**: The maximum number of consecutive zero interval values the read is allowed to have before the validation fails.
- **Meter Event**: The physical meter event type that identifies an outage event. If this event exists during the usage reading, the validation is successful. Valid values include valid physical meter events. If this parameter is not defined, the validation does not check for outage events.
- **Outage Exception Code**: The exception type generated by a failed validation if an outage event exists during the usage reading. Valid values include valid exception codes defined in the system. Note: If the Outage Exception Code is not defined, then no exception will be created for outage events.

- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Consecutive Missing

Consecutive Missing validations calculates the number of consecutive missing interval values in the current reading and validates that number does not exceed the user-defined maximum. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the number of consecutive missing interval values. Missing interval values are those where the Status Code is 9.
- If the number of consecutive missing interval values exceeds the user-defined Maximum Consecutive Missing Intervals, check if an Outage Event of the type specified under Meter Event has occurred by checking the Physical Meter Event History table for events of the user-defined Meter Event within the Start and Stop Time of the meter reading.
    - If an event of that type is detected, an exception based on the user-defined Outage Exception Code is generated.
    - If no outage event is detected, an exception based on the user-defined Exception Code is generated.

Consecutive Missing validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation
- **Maximum Consecutive Missing Intervals**: The maximum number of consecutive missing interval values the read is allowed to have before the validation fails. Missing reads are those readings where the value is 0 and the status is 9.
- **Meter Event**: The physical meter event type that identifies an outage event. If this event exists during the usage reading, the validation is successful. Valid values include valid physical meter events. If this parameter is not defined, the validation does not check for outage events.
- **Outage Exception Code**: The exception type generated by a failed validation if an outage event exists during the usage reading. Valid values include valid exception codes defined in the system. Note: If the Outage Exception Code is not defined, then no exception will be created for outage events.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Percent Change

Percent Change validations compare the percent difference in consecutive intervals to a user-defined maximum percent change. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Calculate the percentage change between each pair of intervals in the reading, using the following formula:

    Difference Ratio = (More Recent Interval Value - Earlier Interval Value) / Earlier Interval Value

    Percentage = abs(Difference Ratio) * 100

    - If the percentage change for any pair of intervals exceeds the user-defined Maximum Percent Change, the reading fails this validation, and an exception is generated.

Percent Change validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation

- **Maximum Percent Change**: The maximum percentage difference allowed for consecutive interval values within the reading. If the percentage change for any pair of intervals exceeds this percentage, the reading fails the validation.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Load Factor Check

Load Factor Check validations compare the load factor for the current meter reading to a user-defined minimum load factor. The user can also define the percentage of non-normal (outage, filled, etc.) intervals allowed when calculating load factor for the reading. Non-normal intervals are defined as intervals with a status of other than null or 'A'. If this minimum percentage is exceeded, the validation is skipped. In this case, an exception that this check could not be performed due to too many non-normal intervals is generated. This validation performs the following steps:

- Check that the UOM for the reading matches the user-defined Unit of Measure.
- Check that the current reading does not have more "non-normal" intervals than the user-defined Percent Non-Normal parameter.
    - If the number of non-normal intervals exceeds the user-defined percent, an exception based on the user-defined Percent Non-Normal Exception Code is generated.
- Calculate the load factor for the current reading. Load factor is calculated as follows:
    - Load Factor = Average Load / Peak Load
    - Average Load = Total Usage / Number of Intervals
    - Peak Load = Maximum Interval Value
- Compare the load factor for the reading to the user-defined Minimum Load Factor.
    - If the load factor of the reading is less than the user-defined minimum, the reading fails this validation, and an exception is generated.

Load Factor Check validations use the following parameters:

- **Exception Code**: The exception code for exceptions triggered by the validation
- **Minimum Load Factor**: The minimum load factor allowed for the reading in order to pass the validation.
- **Percent Non-normal**: The percentage of non-normal intervals allowed in the reading in order to pass the validation.
- **Percent Non-normal Exception Code**: The exception generated when the percent of non-normal intervals exceed the allowed amount. If the Percent Non-normal Exception Code is not defined, then any exceptions based on non-normal intervals will be created based on the user-defined Exception Code.
- **Unit of Measure**: The unit of measure for which the validation is applied. If not supplied, the validation is applied to readings of all UOMs.

Rate

Rate validations perform validations configured in a specified Oracle Utilities Rules Language rate schedule.

Rate validations use the following parameters:

- **Rate**: The rate schedule executed to perform the validation, in the following format:

  <OPCO>:<JURIS>:<RATEFORMNAME>

  where:

    - <OPCO> is the Operating Company for the rate form

  - <JURIS> is the Jurisdiction for the rate form
  - <RATEFORMNAME> is the Rate Form Name for the rate form
- **Validate Only**: A flag that indicates (Yes or No) if the custom validation will only perform validation on the reading (Yes), or if it will validate and (conditionally) manipulate the reading (No). This setting applies to Interval readings only. The default is Yes.
- **Use Cut in Memory**: A flag that indicates (Yes or No) if the validation will use the reading in memory (Yes), or access the reading from the database (No). When set to Yes, the reading is passed to the Rules Language as a pre-defined identifier (RAW_DATA_HNDL) which can be used to access the reading without the need to load the reading from the database. This can enhance the performance of custom validations. The default is No.

Interval Data Validations

Interval data validations are validations used to validate various properties of incoming interval data. Interval Data Validations include the following validation categories:

- **Interval Data Behavior Rules**
- **Interval Import Rules**

Interval Data Behavior Rules

The Interval Data Behavior Rules category includes the following validations:

- **Import**

Import

Import validations allow you to specify certain interval data behaviors, similar to those defined in the INTDCONFIG.CFG.XML configuration file.

Import validations use the following parameters:

- **OverCount**: Controls the behavior of import functions when an incoming cut has too many recorded intervals for the time span defined by the cut start time and the cut stop time and the DST_Participant flag. Valid values include:
  - **Reject**: Directs the function to produce an error and disallow the import of any incoming/uploaded cut when the cut has too many recorded intervals (Expected < Recorded). This is the default setting. This setting should be used when importing interval data with a DST Participant value of "Y."
  - **As Is**: Allows the storage of any incoming cuts with a number of expected intervals less than the number of recorded intervals. The stop times of these cuts will remain unchanged.
- **UnderCount**: Controls the behavior of import functions when an incoming cut has too few recorded intervals for the time span defined by the cut start time and the cut stop time and the DST Participant flag. Valid values include:
  - **Reject**: Directs the function to produce an error and disallow the import of any incoming/uploaded cut when it has too few recorded intervals (Expected > Recorded).
  - **Fill**: Fills all incoming cuts with missing values (value = 0, Status = "9") to the stop time of the cut using DST adjustments if appropriate (DST_Participant = "Y"). This is the default setting.
  - **As Is**: Allows the storage of any incoming cuts with a number of expected intervals greater than the number of recorded intervals. The stop times of these cuts will remain unchanged.
- **Force Valid**: Controls the behavior of how the system sets the Validate_Record_Flag. Valid values include:
  - **No**: Sets the Validate_Record_Flag to "N" indicating that the cut needs no further validation when imported.
  - **Yes**: Sets the Validate_Record_Flag to "Y" indicating that the record should be validated after importing.
  - **Flag**: Uses the cuts' Internal_Validation and Merge flag to set the Validate_Record_Flag. If either are set to "Y", then the Validate_Record_Flag is set to "N", otherwise it is set to "Y".

Interval Import Rules

The Interval Import Rules category includes the following validations:

- **Validation Rules**

Validation Rules

Validation rules include the following:

Validate Interval Data:

Validation Interval Data validations ensure that the incoming interval data has the correct number of intervals based on the supplied Start and Stop time.

Validation Interval Data validations use the following parameters:

- **Start/Stop Hour**: a flag that indicates how Oracle Utilities Meter Data Management should handle exceptions related to the Start Time or Stop Time of the incoming interval data (Ignore or Reject)
- **Missing Intervals**: a flag that indicates how Oracle Utilities Meter Data Management should handle exceptions related to missing intervals in the incoming interval data (Ignore or Reject)

Validate SPI:

Validate SPI validations ensure that the Seconds-Per-Interval (SPI) of the incoming interval data matches a defined value.

Validate SPI validations use the following parameters:

- **Seconds**: the specified SPI for incoming interval data. Possible values include:
  - 60 (one minute)
  - 300 (5 minutes)
  - 900 (15 minutes)
  - 1800 (30 minutes)
  - 3600 (one hour)
  - 86400 (one day)

Validate Unit of Measure:

Validate UOM validations ensure that the Unit-of-Measure (UOM) of the incoming interval data matches a defined value.

Validate Unit of Measure validations use the following parameters:

- **Unit of Measure**: The unit of measure for incoming interval data

Estimations

Estimations are used to perform estimations for missing data where needed. Estimations define the parameters used when performing estimation calculations using the MDM Estimation batch program. See **Setting Up Automated Estimation Processing** on page 5-57 for more information about using this program.

Estimations include the following:

- **Interval Estimation Rules**
- **Consumption Estimation Rules**
- **Rate**

Interval Estimation Rules

Interval estimation rules define how estimations are performed for interval meters. See **Interval Estimations** on page 5-52 in the *Oracle Utilities Meter Data Management Installation and Configuration Guide* for details concerning how interval estimations are performed.

Interval estimation rules use the following parameters:

- **Average**: A flag that indicates (Yes or No) whether or not averages of intervals should be used to estimate missing values
- **Days to Average**: The number of days to average when using averages to estimate missing data
- **User Prior Cuts Only**: A flag that indicates (Yes or No) whether or not to limit the intervals used in averaging estimation calculations should come only from prior to the intervals being estimated. The default is "yes". When set to "No", the estimation rule can use interval values from a later date than the intervals being estimated.
- **Interpolation**: A flag that indicates (Yes or No) whether or not linear interpolation should be used to estimate missing values
- **Maximum Hours**: The maximum number of hours to be interpolated when both Average and Interpolation are set to yes.
- **Exception Code**: The exception code for the MDM exception created if/when interval estimations are performed
- **Unit of Measure**: The unit of measure for which interval estimations are performed

Consumption Estimation Rules

Consumption estimation rules define how estimations are performed for consumption meters.

See **Consumption Estimations** on page 5-56 in the *Oracle Utilities Meter Data Management Installation and Configuration Guide* for details concerning how interval estimations are performed.

Consumption estimation rules use the following parameters:

- **Days**: The number of days of historical data used when estimating consumption.
- **Exception Code**: The exception code for exceptions triggered by a failed estimation of this type
- **Unit of Measure**: The unit of measure for which the estimation is performed

Rate

Rate estimations perform estimations configured in a specified Oracle Utilities Rules Language rate schedule.

Rate estimations use the following parameters:

- **Rate**: The rate schedule executed to perform the estimation, in the following format:

  <OPCO>:<JURIS>:<RATEFORMNAME>

  where:

  - <OPCO> is the Operating Company for the rate form
  - <JURIS> is the Jurisdiction for the rate form
  - <RATEFORMNAME> is the Rate Form Name for the rate form
- **Validate Only**: A flag that indicates (Yes or No) if the custom estimation will only perform validation on the reading (Yes), or if it will validate and (conditionally) manipulate the reading (No). This setting applies to Interval readings only. The default is Yes.
- **Use Cut in Memory**: A flag that indicates (Yes or No) if the estimation will use the reading in memory (Yes), or access the reading from the database (No). When set to Yes, the reading is passed to the Rules Language as a pre-defined identifier (RAW_DATA_HNDL) which can be used to access the reading without the need to load the reading from the database. This can enhance the performance of custom estimations. The default is No.

Creating Custom Rate Validations and Estimations

Several validation types include a "Rate" type that perform customized validations and/or estimations configured in a specified Oracle Utilities Rules Language rate schedule. This section outlines the requirements for implementing a custom Rate validation/estimation.

> **Note**: When using "Rate" type validations, include the CACHE_COMPILED_RATE setting in the LODESTAR.CFG configuration file. See **LODESTAR.CFG** on page 2-2 in the *Oracle Utilities Energy Information Platform Configuration Guide* for more information.

Specifying the Rate Schedule to Process

To specify the rate schedule to process, use the following format in the Rate field on the Validation screen:

<OPCO>:<JURIS>:<RATEFORMNAME>

where:

- <OPCO> is the Operating Company for the rate form
- <JURIS> is the Jurisdiction for the rate form
- <RATEFORMNAME> is the Rate Form Name for the rate form

For example, a rate scheduled called INTD_VALIDATION for the LODESTAR Operating Company and LODESTAR Jurisdiction would be indicated as follows:

LODESTAR:LODESTAR:INTD_VALIDATION

Create and Configure Rate Schedule

The first step when implementing a Rate type validation or estimation is to create and configure the rate schedule that will be executed.

Rate Schedule Pre-Defined Identifiers

When the Oracle Utilities Meter Data Management application executes the rate schedule, it passes parameters to the rate schedule in the form of pre-defined identifiers, including:

- **INPUT_METERID**: The Meter ID, Unit of Measure (UOM), and Channel ID for the usage reading to be validated by the rate schedule.

  Format: "<METER_ID>,<UOM>, <CHANNEL_ID>"

  Example: "INTD_METER_00,01,1"

- **INPUT_UOM**: The unit of measure (UOM) for the usage reading to be validated by the rate schedule

  Example: "01"

- **INPUT_CATEGORY**: The Usage Category (RAW, STAGING, or FINAL) for the usage reading to be validated by the rate schedule.

  Example: "RAW"

- **INPUT_CUT_TABLE**: The name of the table where usage reading to be validated by the rate schedule is stored

  Example: "LSMDMTRDATACUT"

- **CUT_START**: The start time for the usage reading to be validated by the rate schedule

  Example: "04/01/2006 00:00:00"

- **CUT_STOP**: The stop time for the usage reading to be validated by the rate schedule

  Example: "04/01/2006 23:59:59"

- **RAW_DATA_HNDL**: The reading in the form of a reference accessible by Rules Language.

  Note: You must re-assign this identifier before the interval reading can be accessed by the Rules Language.

- **EDITED_DATA_HNDL**: For interval readings, use to store edited readings to be passed from the Rules Language back to the Oracle Utilities Meter Data Management application for insertion into the database.

- **CUT_MODIFIED_FLG**: For interval readings, a flag that indicates ("Y" or "N") that the reading has been modified, and that the Oracle Utilities Meter Data Management application should reload the reading from the value in the EDITED_DATA_HNDL identifier.

These identifiers can be used by the Rules Language to load/access the data to be validated/estimated from the Oracle Utilities Data Repository and perform the calculations configured in the rate schedule. The specifics of how you use these parameters differs depending the type of usage data to be validated.

Interval: When validating interval usage data, the INPUT_CUT_TABLE identifier is set to "LSMDMTRDATACUT". This is the Meter Data Channel Cut table, and is the table where Oracle Utilities Meter Data Management interval usage is stored.

The specifics of how interval data readings are loaded/accessed in the Rules Language is based on the value of the "Use Cut in Memory" flag.

- When the "Use Cut in Memory" flag is set to "No," the input identifiers can be used as parameters to the enhanced interval data functions:

  - INPUT_METERID
  - INPUT_CATEGORY
  - INPUT_CUT_TABLE
  - CUT_START
  - CUT_STOP

  The enhanced interval data functions are used to load interval data from enhanced interval data tables, including the Meter Data Channel Cut (LSMDMTRDATACUT) table. For example, the following Rules Language statement loads an interval usage reading based on the supplied input identifiers:

  ```
  RAW_HNDL = INTDLOADEXDATES(INPUT_METERID, INPUT_CATEGORY,
  INPUT_CUT_TABLE, CUT_START, CUT_STOP);
  ```

  See **Enhanced Interval Data Functions** on page 9-85 in the *Oracle Utilities Rules Language Reference Guide* for more information about using these functions.

- When the "Use Cut in Memory flag" is set to "Yes," the "RAW_DATA_HNDL" identifier can be used to access the reading in memory. For example, the following Rules Language statement loads an interval usage reading based on the supplied RAW_DATA_HNDL identifier:

  ```
  RAW_HNDL = RAW_DATA_HNDL;
  ```

Consumption: When validating consumption usage data, the INPUT_CUT_TABLE identifier is set to "LSMDMTRDATAREAD". This is the Meter Data Reading table, and is the table where Oracle Utilities Meter Data Management consumption usage is stored.

When loading consumption usage, you can use either a database identifier, or a table-column list. Database identifiers should be used when retrieving only one or two values from a reading. If you need to retrieve more than two values, it is more efficient to use a table-column list.

When using a database identifier to load usage values, the input identifiers can be combined to form a string that is the identity (or key) of the usage record to be validated. The identity of the Meter Data Reading (LSMDMTRDATAREAD) table is:

<METER_ID>,<UOM><CHANNEL_ID>,<CATEGORY>,<STOPREADTIME>

This key can be formed by concatenating the INPUT_METERID, INPUT_CATEGORY, and CUT_STOP input identifiers. For example:

```
//Create MTR_READ_ID_STR
MTR_READ_ID_STR = INPUT_METERID + "," + INPUT_CATEGORY + "," +
CUT_STOP;
```

The MTR_READ_ID_STR identifier can then be used to load values from the reading. For example, to load the Stop Value and Total Value for a reading, you could use the following:

```
//Load Meter Read based on MTR_READ_ID_STR
MTR_READ_REC_STOPVAL = LSMDMTRDATAREAD [ MTR_READ_ID_STR ]. STOPVAL;
MTR_READ_REC_TOTALVAL = LSMDMTRDATAREAD [ MTR_READ_ID_STR ]. TOTALVAL;
```

See **Database Identifiers** on page 4-5 in the *Oracle Utilities Rules Language User's Guide* for more information about database identifiers.

When using a table-column to load usage values, the INPUT_METERID identifiers cannot be used as a parameter as provided by Oracle Utilities Meter Data Management. The INPUT_METERID identifier must be parsed into strings that contain the Meter ID and Channel ID, which can in turn be used as parameters for the table-column list used to retrieve the usage record to be validated. For example, the following code parses the INPUT_METERID identifier to obtain the Meter ID and Channel ID:

```
//Parse Meter Reading Parameters
//The below logic will parse for the Meter ID and Channel ID
//from INPUT_METERID
STR_POS = INSTR(INPUT_METERID, ",");
STR_UOM_CHNLID = MID(INPUT_METERID, STR_POS + 1);
METER_ID_STR = LEFT(INPUT_METERID, STR_POS - 1);
STR_POS = INSTR(STR_UOM_CHNLID, ",");
CHANNEL_ID_STR = MID(STR_UOM_CHNLID, STR_POS + 1);
```

Once the Meter ID and Channel ID (METER_ID_STR and CHANNEL_ID_STR in the example above) have been parsed from the INPUT_METERID, they can be used in table-column lists.

In the following example, the GET_MDM_CON_READINGS list uses METER_ID_STR, CHANNEL_ID_STR, INPUT_UOM, and CUT_STOP identifiers to load a consumption reading and obtain the Stop Value and Total Value.

```
//Load Consumption Reading from LSMDMTRDATAREAD
//List: GET_MDM_CON_READINGS
FOR EACH MTR_READ IN LIST "GET_MDM_CON_READINGS"
   LST_MTR_READ_STOPVAL = MTR_READ.STOPVAL;
   LST_MTR_READ_TOTALVAL = MTR_READ.TOTALVAL;
END FOR;
```

See **Lists for Use in Rate Forms (Table.Column Queries)** on page 8-8 in the *Data Manager User's Guide* for more information about table-column lists.

Time of Use: When validating time of use data, the INPUT_CUT_TABLE identifier is set to "LSMDMTRDATAREAD". This is the Meter Data TOU Reading table, and is the table where the consumption record associated with the time of use reading is stored. In addition, individual time of use period readings are stored in the LSMDMTRDATAREADTOU table.

When loading the consumption record for time of use readings, you can use either a database identifier, or a table-column list as described for consumption readings above. To load the individual time of use period readings, you can use either a database identifier, or a table-column list.

When using a database identifier to load usage values, the input identifiers can be combined to form a string that is the identity (or key) of the usage record to be validated. The identity of the Meter Data Reading (LSMDMTRDATAREAD) table is:

<METER_ID>,<UOM><CHANNEL_ID>,<CATEGORY>,<STOPREADTIME>

The identity of the Meter Data TOU Reading (LSMDMTRDATAREADTOU) table is:

<METER_ID>,<UOM><CHANNEL_ID>,<CATEGORY>,<STOPREADTIME>,<TOUPERIODNAME>

When using a table-column to load usage values, the INPUT_METERID identifiers cannot be used as a parameter as provided by Oracle Utilities Meter Data Management. The INPUT_METERID identifier must be parsed into strings that contain the Meter ID and Channel ID, which can in turn be used as parameters for the table-column list used to retrieve the usage record to be validated. For example, the following code parses the INPUT_METERID identifier to obtain the Meter ID and Channel ID:

```
//Parse Meter Reading Parameters
//The below logic will parse for the Meter ID and Channel ID
//from INPUT_METERID
STR_POS = INSTR(INPUT_METERID, ",");
STR_UOM_CHNLID = MID(INPUT_METERID, STR_POS + 1);
METER_ID_STR = LEFT(INPUT_METERID, STR_POS - 1);
STR_POS = INSTR(STR_UOM_CHNLID, ",");
CHANNEL_ID_STR = MID(STR_UOM_CHNLID, STR_POS + 1);
```

Once the Meter ID and Channel ID (METER_ID_STR and CHANNEL_ID_STR in the example above) have been parsed from the INPUT_METERID, they can be used in table-column lists.

In the following example, the GET_MDM_TOU_READINGS list uses METER_ID_STR, CHANNEL_ID_STR, INPUT_UOM, and CUT_STOP identifiers to load time of use period readings and obtain the Tou Period Name, Stop Value, and Total Value from each.

```
//Load TOU Readings from LSMDMTRDATAREADTOU
//List: GET_MDM_TOU_READINGS
FOR EACH TOU_MTR_READ IN LIST "GET_MDM_TOU_READINGS"
   TOU_PERIOD_NAME = TOU_MTR_READ.TOUPERIODNAME;
   LST_MTR_TOU_READ_STOPVAL = TOU_MTR_READ.STOPVAL;
   LST_MTR_TOU_READ_TOTALVAL = TOU_MTR_READ.TOTALVAL;
END FOR;
```

Rate Schedule Requirements

In order to interface properly with the Oracle Utilities Meter Data Management application, the rate schedule must create a return XML string at the end of the rate schedule execution that indicates the completion status as either PASS or FAIL, includes any applicable error messages, and in the case of modified interval readings, contains the edited reading.

Completion Status: Using the Rules Language, the following set of instructions is one way to create the minimal required XML.

```
...
IF HASVALUE(PASS_FAIL) = 0
 THEN
   PASS_FAIL = "PASS";
END IF;
STATUS = PASS_FAIL;
SAVE STATUS TO XML;
```

It's also possible to create the required XML using the XML Rules Language statements and functions. For example:

```
//Declare the outbound XML structure
XML_ELEMENT LSRETURN NODENAME RSRETURN;
XML_ELEMENT LSERRORS NODENAME ERRORS PARENT LSRETURN;
XML_ELEMENT LSERROR NODENAME ERROR PARENT LSERRORS;
//Create all the nodes.
XML_OP CREATE_ALL LSRETURN;
...
```

See **Appendix B**: **XML Statements and Functions** in the *Oracle Utilities Rules Language Reference Guide* for more information about using these functions.

Error Messages: If the rate schedule has to return error messages, you must add these to the return XML. The following example shows how an error message could be created for a failed historic usage calculation.

```
...[calculate historic usage for Meter ID, if calculation fails]
 PASS_FAIL = "FAIL";
 LSERROR.CODE = "NO_HISTORIC_USAGE";
END IF;
EX_DESC = "Historical Average Daily Usage could not be calculated for "
+ INPUT_METERID + " on the Read Date " + MSG_READDATE;
//
//Write to an XML file node:
//XML_OP INSERT_UNUSED LSERROR;
LSERROR.DESC = EX_DESC;
SAVE LSERROR TO XML;
```

Notes:

- **LSERROR.CODE** must be defined in the Meter Exception Codes tables in the Oracle Utilities Data Repository. See **Meter Exception Codes** on page 7-16 for more information about working with Meter Exception Codes.
- **LSERROR.DESC** is custom text message to be included in the Exception generated if/when the validation fails.

Modified Interval Readings: If the Rules Language has to return modified interval readings, the Rules Language must specify if the reading has been modified, and save the reading to either the database or memory. The specifics of how interval data readings are saved in the Rules Language is based on the value of the "Validate Only" flag.

- When "Validate Only" flag is set to "Yes", the reading is not modified, and need not be saved to the database, or passed back to the Oracle Utilities Meter Data Management application.
- When the "Validate Only" flag is set to "No" and the interval reading is edited by the validation, you must indicate that the reading has been edited, and you must save the modified reading to the database, or reassign the reading to an identifier used to pass the edited reading back to the Oracle Utilities Meter Data Management application.

  The INTDSAVEEX function can be used to save an edited interval reading to the database.

  The "CUT_MODIFIED_FLG" identifier is used to designate that the reading has been edited by the Rules Language, and that the Oracle Utilities Meter Data Management application should reload the reading.

  The "EDITED_DATA_HNDL" identifier is used to pass the edited reading directly back to the Oracle Utilities Meter Data Management application.

  To use these identifiers, both must be used in a SAVE TO XML statement. For example:

```
EDITED_DATA_HNDL = RAW_HNDL;
...
...
SAVE CUT_MODIFIED_FLG TO XML;
SAVE EDITED_DATA_HNDL TO XML;
```

Rules Language Examples

The examples below illustrate how Rules Language might be configured based on different settings of the "Validate Only" and "Use Cut in Memory" flags. The table below summarizes the behavior of Rules Language validations based on these flags.

	Validate Only = "Yes"	Validate Only = "No"
Use Cut in Memory = "Yes"	Reading is passed as RAW_DATA_HNDL. Rules Language should use and reassign this identifier. CUT_MODIFIED_FLG is ignored and reading will be not reloaded	Reading is passed as RAW_DATA_HNDL. Rules Language should use and reassign this identifier. If CUT_MODIFIED_FLG identifier is set to "Y" in Rules Language, MDM will reload reading from EDITED_DATA_HNDL
Use Cut in Memory = "No"	Reading is saved in database, and must be loaded by Rules Language from database. CUT_MODIFIED_FLG is ignored and reading will be not reloaded.	Reading is saved in database, and must be loaded by Rules Language from database. If CUT_MODIFIED_FLG identifier is set to "Y" by Rules Language, Rules Language must save reading to database, and MDM will reload reading from database

Example 1: Validation Only: N/Use Cut in Memory: N

```
METERID = INPUT_METERID;
CATEGORY = INPUT_CATEGORY;
CUT_TABLE = INPUT_CUT_TABLE;
START = CUT_START;
IDN = METERID + "," + CATEGORY + "," + START;
EDITED_HNDL = INTDLOADEXCUT(IDN , CUT_TABLE);
//Change EDITED_HNDL
..
//
IF CUT_MODIFIED_FLG = "Y" THEN
    RC = INTDSAVEEX(INPUT_METERID, INPUT_CATEGORY, INPUT_CUT_TABLE,
EDITED_HNDL);
    SAVE CUT_MODIFIED_FLG TO XML;
END IF;
```

Example 2: Validation Only: N / Use Cut in Memory: Y

```
EDITED_DATA_HNDL = RAW_DATA_HNDL;
//Change EDITED_HNDL
..
//
IF CUT_MODIFIED_FLG = "Y" THEN
    SAVE EDITED_DATA_HNDL TO XML;
    SAVE CUT_MODIFIED_FLG TO XML;
END IF;
```

Sample Rules Language Validations

Below are a pair of sample Rules Language validations. These validations analyze an interval reading to determine if the percent difference between two consecutive intervals exceeds a specified (configurable) tolerance. The difference between the two is that the first loads the reading from the database, while the second loads the reading from memory.

Example 1: Loading Reading from Database

- **Validate Only**: Yes
- **Use Cut in Memory**: No

```
/** INTERVAL_BY_INTERVAL_CHECK_RS LODESTAR LODESTAR S "=" C 0 1980-01-
01 X * as of 2006-07-12 16:12:09 **/
// Purpose: Compare inbound MDM interval usage to determine if the
percent difference between two consecutive interval values varies by
more than a configurable tolerance. A factor value will be used to
store the % tolerance.
//
//=====================================================
MSG_READDATE = DBDATETIME(CUT_START);
//
//Declare the outbound XML structure
IDENTIFIER LSRETURN;
XML_ELEMENT LSRETURN NODENAME RSRETURN;
XML_ELEMENT LSERRORS NODENAME ERRORS PARENT LSRETURN;
XML_ELEMENT LSERROR NODENAME ERROR PARENT LSERRORS;
//Create all the nodes.
XML_OP CREATE_ALL LSRETURN;
//
//=====================================================
//
//** Load the cut to validate
RAW_HNDL = INTDLOADEXDATES(INPUT_METERID , INPUT_CATEGORY ,
INPUT_CUT_TABLE , CUT_START , CUT_STOP);
//
//** Get the property
RAW_SPI = RAW_HNDL.SPI;
//
//** Shift the start time of the cut to create another cut
RAW_SHIFT_HNDL = INTDSHIFTSTARTTIME(RAW_HNDL , "STARTTIME" , CUT_START
+ RAW_SPI);
//
//** Subset the cut for the start and stop of the cut
RAW_SHIFT_HNDL = INTDSUBSET(RAW_SHIFT_HNDL , CUT_START , CUT_STOP);
//
//** Get the percentage difference. Positive assignment only!
DIFF_HNDL =+ ((RAW_HNDL - RAW_SHIFT_HNDL) / RAW_HNDL) * 100;
//
//** Calculate the percentage!
//** For those with value > 0, then it's greater then threshold
PCT_THRESHOLD = FACTOR [ "INTERVAL_THRESHOLD" ]. VALUE;
DIFF_HNDL =+ DIFF_HNDL - PCT_THRESHOLD;
//
//** Create the mask. anything greater other then zero set to 1, else 0
DIFF_HNDL = INTDCREATEMASK(DIFF_HNDL , "NON_ZERO");
//
DIFF_HNDL = INTDSUBSET(DIFF_HNDL , CUT_START + RAW_SPI , CUT_STOP);
//
//** Total up the mask
MASK_TOTAL = DIFF_HNDL.TOTAL;
//
//** If MASK_TOTAL > 0 then fail it!
```

```
IF (MASK_TOTAL > 0)
 THEN
   //
   //** Set status to fail
   PASS_FAIL = "FAIL";
   //** Save status code and description
   LSERROR.CODE = "INTERVAL_BY_INTERVAL_CHECK";
   LSERROR.DESC = INPUT_METERID + " on read date " + MSG_READDATE + "
failed interval by interval check for greater then " + PCT_THRESHOLD +
" percent";
   SAVE LSERROR TO XML;
 ELSE
   //** Set status to pass
   PASS_FAIL = "PASS";
END IF;
//
STATUS = PASS_FAIL;
SAVE STATUS TO XML;
//
//** Clean out variables
CLEAR RAW_HNDL, PCT_THRESHOLD, DIFF_HNDL, RAW_SPI, RAW_SHIFT_HNDL;
//
//
```

Example 2: Loading Reading from Memory

- **Validate Only**: Yes
- **Use Cut in Memory**: Yes

```
/** INTERVAL_BY_INTERVAL_CHECK_RS LODESTAR LODESTAR S "=" C 0 1980-01-
01 X * as of 2006-07-12 16:12:09 **/
// Purpose: Compare inbound MDM interval usage to determine if the
percent difference between two consecutive interval values varies by
more than a configurable tolerance. A factor value will be used to
store the % tolerance.
//
//=====================================================
MSG_READDATE = DBDATETIME(CUT_START);
//
//Declare the outbound XML structure
IDENTIFIER LSRETURN;
XML_ELEMENT LSRETURN NODENAME RSRETURN;
XML_ELEMENT LSERRORS NODENAME ERRORS PARENT LSRETURN;
XML_ELEMENT LSERROR NODENAME ERROR PARENT LSERRORS;
//Create all the nodes.
XML_OP CREATE_ALL LSRETURN;
//
//=====================================================
//
//** Load the cut to validate
RAW_HNDL = RAW_DATA_HNDL;
//
//** Get the property
RAW_SPI = RAW_HNDL.SPI;
//
... (same as previous example)
```

Chapter 4

Usage Management

This chapter describes how users work with the Oracle Utilities Meter Data Management Usage Management functions, including:

- **Usage Add/Edit**
- **Usage Analysis**

Usage Add/Edit

This section describes how users add and edit usage associated with Oracle Utilities Meter Data Management, including:

- **Searching Usage**
- **Adding Usage**
- **Viewing and Editing Usage**

Searching Usage

The Usage Add/Edit option allows users to search for usage for viewing and editing.

How to search usage for editing:

1. Select **Meter Data Management-›Usage Management-›Usage Add/Edit**.

   The **Usage Add/Edit** screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the meter ID, channel ID, serial number, account name, reading status, reading category, unit of measure, usage type, service point ID, service point name, market ID, organization name, service point account ID, meter account ID, date range start/stop, or whether the usage is used for billing.

   To search for usage related to multiple meters, enter a meter ID in the Meter ID field and click the plus icon (). The meter ID now appears in the Actual Meter List box. To remove a Meter ID from this list, select the ID and click the minus sign ().

   To require search filters when performing a search, check the **Require search filter for lookups** checkbox.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**.

4. The search results appear on the **Usage Add/Edit Results** screen.

   The Usage Add/Edit Results screen displays the following information for each usage record:

   - Meter ID
   - Channel ID
   - Start Time
   - Stop Time
   - Total
   - Energy
   - Reading Category
   - UOM
   - Reading Status
   - Usage Type
   - SPI

   See **Viewing and Editing Usage** on page 4-8 for more information about viewing individual usage records.

5. To sort the results by one of the columns, click the appropriate arrow on the column heading. For example, to sort the results in ascending order by Meter ID, click the "up" arrow on the Meter ID column heading. See **Sorting Search Results** on page 2-6 for more information.

If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field and press the **Enter** key.

6. To edit usage, click on the corresponding **[...]** link.

   Interval usage opens on the Edit Values screen. Consumption usage opens on the Edit Usage screen. TOU usage opens on the Edit TOU Usage screen. See **Viewing and Editing Usage** on page 4-8 for more information.

   Note: The Replace Range and Insert Intervals functions available on the Edit Values tab allow users to select intervals from a source reading. To specify the source reading when using these functions, select the reading to edit **and** the specified source readings on the Usage Add/Edit Results screen, and click the [...] link for the reading you wish to edit. The other selected readings will be available in the Interval Source drop-down list for the Replace Range and Insert Intervals functions.

7. To view a graph of the record on the Usage Add/Edit Results screen, check the corresponding checkbox.

   A graph of the usage is displayed in the **Selected Usage** pane.

   For Consumption and TOU usage, the shape of the graph in the Selected Usage pane is based on the Profile Meter associated with the meter for the current reading. If no profile meter is associated with the meter, the graph displays a flat distribution, with a value equal to the reading's total is divided by the number of days in the reading. For Consumption and TOU usage based on "demand" units of measure (units of measure for which the Aggregate Method is set to "Average" in the Unit of Measure table), the Profile Meter is ignored and the graph displays a flat distribution, with a value equal to the maximum demand for the reading.

   To view the usage in text form, click the **Text** link in the Selected Usage pane.

   The Selected Usage pane displays the following for the selected record:

   - Meter ID
   - UOM
   - Start Time
   - Stop Time
   - Channel ID

   To delete the usage record from the list of records currently selected, click the delete icon (✖). To return to the graph view, click the **Graph** link.

8. To view the meter associated with the usage record, click the **Meter ID** link.

   The selected meter opens in the MDM Meter screen. See **Viewing and Editing Meters** on page 3-3 for more information about viewing meters.

9. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

10. To re-validate one or more usage record, check the record(s) you wish to re-validate and click **Validate**.

11. To approve one or more usage record and set the Usage Category to FINAL, check the record(s) you wish to approve and click **Approve**.

Adding Usage

The Usage Add/Edit option also allows users to manually add usage, including:

- **Uploading Usage**
- **Manually Creating Consumption Readings**
- **Manually Creating TOU Readings**
- **Manually Creating Interval Readings**

Uploading Usage

The Upload File option allows you to upload usage data. Usage added via this feature is validated upon import into the Oracle Utilities Data Repository.

How to upload usage:

1. Click **Upload File** on the **Usage Add/Edit** screen.

   The Upload Files screen opens.

2. Click the **Browse** button. The **Choose file** dialog opens.

   Navigate to the file you wish to upload and click **Open**. You can upload *.lsm files.

3. Click **Upload** to begin the upload. To return to the Usage Add/Edit search screen, click **Search**. To clear the screen, click the **Reset** link.

   The uploaded usage will appear as an item on the **Loading Usage** screen.

   This screen displays the following for each usage reading uploaded:

   - Process Result
   - Meter ID
   - Channel
   - UOM
   - Start Time
   - Comment

4. To view an individual usage reading from the list, click **Usage** (in the first column).

Manually Creating Consumption Readings

This feature allows you to manually create consumption readings. This is helpful in cases where you need to manually create a missing read, or insert a reading for a consumption meter. Manually added consumption readings have a starting Reading Category of STAGING, and a starting Reading Status of NEW. Once added, consumption readings can be validated manually.

How to manually add consumption usage:

1. Select **Add->Consumption** on the **Usage Add/Edit** screen.

   The **Edit Usage** screen opens.

2. Select the meter ID, expected unit of measure code, and channel number of the meter for the consumption record in the **Meter Data Channel** field.

3. Enter the start read time (optional) and stop read time (required) for the consumption record in the **Start Read Time** and **Stop Read Time** fields (respectively).

4. *Optional*. Enter the start value of the consumption reading in the **Start Value** field.

5. Enter the stop value of the consumption reading in the **Stop Value** field.

6. *Optional*. Enter the total value of the consumption reading in the **Total Value** field.

7. *Optional*. Enter the energy value of the consumption reading in the **Energy** field.
8. *Optional*. Enter the meter multiplier used for the consumption reading in the **Meter Multiplier** field.
9. Specify whether or not this consumption reading is a final reading in the **Final Reading** field.
10. Specify the method (Include, Total, or Exclude) by which the consumption data is totalized in the **Totalize** field.
11. Specify if the consumption reading was estimated (Yes or No) in the **Estimated** field.
12. *Optional*. Specify the date on which the consumption reading was replaced, if applicable, in the **Replacement Date** field.
13. Specify if consumption reading has been replaced (Yes or No) in the **Replaced** field.
14. Specify if the consumption reading has been edited by a user. (Yes or No) in the **User Edited field.**
15. *Optional*. Specify the number of dials for the consumption reading in the **Number of Dials** field.
16. Click **Save** to save the consumption reading. The Reading Category of the reading will be set to STAGING, and the Reading Status set to NEW. To validate the reading, click **Validate**. To set the Usage Category for the reading to FINAL without validating the data, click **Approve**.

    The consumption reading opens in the **Edit Usage** screen.

    See **Editing Consumption Usage** on page 4-11 for more information about editing consumption readings.

Manually Creating TOU Readings

This feature allows you to manually create time of use (TOU) readings. This is helpful in cases where you need to manually create a missing read, or insert a reading for a consumption meter. Manually added TOU readings have a starting Reading Category of STAGING, and a starting Reading Status of NEW. Once added, readings can be validated manually.

How to manually add TOU usage:

1. Select **Add->Time of Use** on the **Usage Add/Edit** screen.

   The **Edit TOU Usage** screen opens.
2. Select the meter ID, expected unit of measure code, and channel number of the meter for the consumption record in the **Meter Data Channel** field.
3. Enter the start read time (optional) and stop read time (required) for the reading in the **Start Read Time** and **Stop Read Time** fields (respectively).
4. *Optional*. Enter the start value of the reading in the **Start Value** field.
5. Enter the stop value of the reading in the **Stop Value** field.
6. *Optional*. Enter the total value of the reading in the **Total Value** field.
7. *Optional*. Enter the energy value of the reading in the **Energy** field.
8. *Optional*. Enter the meter multiplier used for the reading in the **Meter Multiplier** field.
9. *Optional*. Enter the transformer loss factor for the reading in the **Transformer Loss Factor** field.
10. Click **Save** to save the reading. The reading opens in the **Edit TOU Usage** screen. The Reading Category of the reading will be set to STAGING, and the Reading Status set to NEW.
11. Add time of use period readings. For each TOU period reading, do the following:

- Click **Add** about the TOU Period readings box (bottom of the **Edit TOU Usage** screen).

The **Add TOU Usage Period** screen opens.

- Select the name of the TOU period for the TOU usage period in the **TOU Period Name** field.

  Available TOU Periods are based on the TOU Schedule defined in the Meter Configuration record for the meter and can be viewed on the TOU Periods dialog.
- Enter the start value of the TOU usage period in the **Start Value** field.
- Enter the stop value of the TOU usage period in the **Stop Value** field.
- Enter the total value of the TOU usage period in the **Total Value** field.
- Enter the measured energy of the TOU usage period in the **Energy** field.
- Enter the meter multiplier supplied with the TOU usage period in the **Meter Multiplier** field.
- Enter the number of dials supplied with the TOU usage period in the **Number of Dials** field.
- Click **Save** to save the TOU period reading. A dialog will open asking if you want to validate the reading. Click Yes or No as appropriate.
- The newly added TOU period reading will appear in the TOU Period readings box.
- Repeat steps a through j for each TOU period reading you wish to add.

12. Once all the TOU period readings have been added, you can validate the reading or set the reading to a status of FINAL. To validate the reading, click **Validate**. To set the Usage Category for the reading to FINAL, click **Approve**.

    The reading opens in the **Edit TOU Usage** screen.

    See **Editing Time of Use (TOU) Usage** on page 4-14 for more information about editing TOU readings.

Manually Creating Interval Readings

This feature allows you to manually create interval readings. This is helpful in cases where you need to manually create a missing read, or insert a reading for a consumption meter. Manually added interval readings have a starting Reading Category of STAGING, and a starting Reading Status of NEW. Once added, readings can be validated manually.

Interval readings can be created either from an existing interval reading or can be created with a flat load of a user-specified value. This function also allows you copy a set of intervals from an existing cut and paste them into another cut.

Note: If the new reading (the destination) is an existing reading, then the Start Time and Stop Time for the new reading must cover the entire existing reading. Overlapping readings are not allowed.

How to manually add interval usage:

1. Select **Add›Interval** on the **Usage Add/Edit** screen.

   The **Create a New Interval** screen opens.

2. Select the meter ID, expected unit of measure code, and channel number of the meter for the interval reading in the **Interval Destination** field.

3. Enter the start time (required) for the interval reading in the **Start Time** field. Enter the date and time manually, or click the arrow to open a calendar control and select the appropriate date and enter the time manually.

4. Select the type of stop time for the interval reading from the **Stop Time Type** drop-down list.
   - **Custom**: Use a specified stop time. If you select this option, enter the stop time for the interval reading in the **Stop Time** field.
   - **DO n**: Create a specified number of intervals, starting at the Start Time. If you select this option, enter the number of intervals in the **DO n** field.
5. Select the source of the interval values on the **Interval Source** drop-down list.
   - **Interval Source**: The interval data cut from which the function takes values. If you select this option, select the source meter from the ***Interval Source** field, enter the start time for the source in the **Source Start** field, and select the category of the source data from the **Source Category** drop-down list (see below).
   - **Value**: The value assigned to the intervals. If you select this option, specify the value for the interval values in the **Value** field (see below).
6. Enter the value to be assigned to the intervals in the new reading in the **Value** field. **Note**: This only applies if the Interval Source is **Value**.
7. Enter the source meter for the new reading in the ***Interval Source** field. The source meter is an existing meter with existing data. **Note**: This only applies if the Interval Source is **Interval Source**.
8. Enter the start time for the source data in the **Source Start** field. This must be a valid date of usage for the source meter (i.e. there must be valid data for the source meter for this start time). **Note**: This only applies if the Interval Source is **Interval Source**.
9. Enter the reading category of the source data (FINAL, STAGING, or RAW) in the **Source Category** field. **Note**: This only applies if the Interval Source is **Interval Source**.
10. *Optional*. To view a graph of the source data, click **View Graph** at the bottom of the screen. A graph of interval data based on the selected source meter and specified start time will open. Click **View Graph** again to close the graph.
11. Select the SPI (seconds-per-interval) for the new interval reading from the **SPI** drop-down list.
12. Select the DST participant flag for the interval reading from the **DST Participant** drop-down list.
13. Select whether or not the interval values for the interval reading will be flagged as estimated (status code of "M") from the **Estimated** drop-down list.
14. Select the status code type for the interval values from the **Status Type** drop-down list. The three options include:
    - **Leave As Is**: Make no change to any status codes.
    - **Use Default**: Apply the default status codes for the function. (Default)
    - **User Defined**: Apply a user-defined status code to all intervals operated on by the function. If you select this option, enter the status code in the **User Defined Status** field.
15. Click **Save** to save the interval reading.

    The **Create a New Interval** screen displays the status of the function.
16. To view, validate, and/or edit the new interval reading, search for the reading as described in **Searching Usage** on page 4-2.

    See **Editing Interval Usage** on page 4-8 for more information about editing interval readings.

Viewing and Editing Usage

Users can also view and edit usage readings, including:

- **Editing Interval Usage**
- **Editing Consumption Usage**
- **Editing Time of Use (TOU) Usage**

Editing Interval Usage

Editing interval usage is performed using screens similar to the Interval Data Manager component of the Oracle Utilities Energy Information Platform.

How to edit interval usage:

1. Click on the **[...]** link for the interval usage record you wish to view or edit on the Usage Add/Edit Results screen.

   The selected usage opens in the Edit Values screen.

2. Edit the data on the **Edit Values Tab** as appropriate.
3. To edit header information, click Edit Header and edit as appropriate on the **Edit Header Screen**.
4. To view exceptions related to the interval data, select the **Exceptions Tab**.
5. To view versions of the interval data, select the **Versions Tab**.

Edit Values Tab

The Edit Values tab is similar to the Interval Data Manager Edit Values screen, and allows users to edit the values and status codes of individual intervals. See **Viewing and Editing Interval Data Values and Status Codes** on page 9-17 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing interval data.

On the Cut Values list, intervals with an extended status code are noted with a red asterisk (*). Hovering the cursor over the mouse causes a popup dialog to appear displaying the Status Code and Description for the extended status code of the interval.

> **Note**: The Replace Range and Insert Intervals functions available on the Edit Values tab allow users to select intervals from a source reading. To specify the source reading when using these functions, select the reading to edit **and** the specified source readings on the Usage Add/Edit Results screen, and click the [...] link for the reading you wish to edit. The other selected readings will be available in the Interval Source drop-down list for the Replace Range and Insert Intervals functions.

To search usage records, click **Search**. See **Searching Usage** on page 4-2 for more information.

To view a list of usage records, click **List**.

To reset the values to their previous values, click **Reset**.

To save changes, click **Save**.

To delete the displayed cut, click **Delete**.

To validate the displayed cut, click **Validate**.

To approve the displayed cut and set its Usage Category to Final, click **Approve**.

To edit header information for the displayed cut, click **Edit Header**. See **Edit Header Screen** on page 4-10 for more information.

Exceptions Tab

The Exceptions tab lists exceptions related to the displayed interval data cut.

For each exception, this tab displays the following:

- **Exception Category**: The exception category for the exception, from the Exception Categories table.
- **Exception Time**: The time the exception was triggered.
- **Description**: A description of the exception.
- **Exception Status**: The status of the exception, from the Usage Exception Statuses table.

To search usage records, click **Search**. See **Searching Usage** on page 4-2 for more information.

To view a list of usage records, click **List**.

To edit header information for the displayed cut, click **Edit Header**. See **Edit Header Screen** on page 4-10 for more information.

Versions Tab

The Versions tab displays a list of the current and previous versions of the interval data cut record as stored in the Oracle Utilities Data Repository.

The interval data cuts versions listed on this screen can be viewed, exported, or promoted.

View: To view one or more versions, check the corresponding checkboxes for the versions you wish to view and click **Analysis Graph**. The selected versions are displayed on the **Usage Analysis Summary** screen.

This screen is similar to the Interval Data Viewer Interval Data Summary screen, and allows users to view and download interval data related to revenue protection events. See **Viewing and Exporting Interval Data** on page 6-5 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about viewing interval data using this screen.

Export: To export one or more versions, check the corresponding checkboxes for the versions you wish to export and click **Export to CSV**.

A **File Download** dialog opens.

To open the file, click **Open**. The file opens in a *.CSV-compatible application, such as Microsoft Excel.

To save the file, click **Save**. A **Save As** dialog opens. Select the destination location for the file, enter a name for the file, and click **Save**.

Promote: Promoting a reading results in effectively replacing the "current" reading with a selected historical version. To promote one the existing versions, check the corresponding checkbox for the version you wish to promote and click **Promote**.

A dialog opens noting that selected version will replace the current version. Click **OK** to proceed. The selected version replaces the current version, and the previous current version becomes a historical version.

Physical Meter Events Tab

The Physical Meter Events tab lists physical meter events for the physical meter associated with the displayed interval data cut.

For each event, this tab displays the following:

- **Meter Event**: The type of meter event
- **Physical Meter**: The serial number and manufacturer of the physical meter
- **Log Date**: The date on which the event occurred
- **Notes**: A note or notes related to the event

To search usage records, click **Search**. See **Searching Usage** on page 4-2 for more information.

To view a list of usage records, click **List**.

Edit Header Screen

The Edit Header screen allows users to edit header information for the interval data cut. This screen opens when the user clicks **Edit Header** on either the Edit Values or Exceptions tabs of the Edit Values screen.

The Edit Header screen is similar to the Interval Data Manager Edit Header screen. See **Viewing and Editing Header Information** on page 9-13 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing header information.

If the reading contains an extended channel status code, a **Statuses** heading will appear below the **Statistics** heading. To view the status code, click the blue arrow. The Status Code and Description of the channel status code will be displayed.

Users can edit the following information on this screen:

- TZ Std Name (Time Zone Standard Name)
- Origin
- Descriptor
- Meter Information, including:
    - Meter Start Reading
    - Meter Stop Reading
    - Meter Multiplier
    - Meter Offset

To update the data based on changes to the Meter Information, click **Recalculate**.

To refresh the contents of the screen, click **Refresh**.

To reset the values to their previous values, click **Reset**.

To save changes made to the data, click **Save**.

To validate the displayed cut, click **Validate**.

To approve the displayed cut and set its Usage Category to Final, click **Approve**.

To view a graph of the interval data cut, click **Graph**.

To edit interval values and status codes for individual intervals, click **Edit Values**. See **Edit Values Tab** on page 4-8 for more information.

Editing Consumption Usage

Editing consumption usage data is performed on the Edit Usage screen.

How to edit consumption usage:

1. Click on the **[...]** link for the consumption usage record you wish to view or edit on the Usage Add/Edit Results screen.

   The selected usage opens in the Edit Usage screen.

2. Edit the data on the **Usage Tab** and **Additional Fields Tab** as appropriate.
3. To view exceptions related to the consumption reading, select the **Exceptions Tab**.
4. To view an audit trail for the consumption reading, select the **Auditing Tab**.

Usage Tab

The Usage tab displays the consumption reading, including:

- **UID**: The unique ID of the consumption reading.
- **Meter Data Channel**: The meter ID, expected unit of measure code, and channel number of the meter, from the MDM Meters table.
- **Usage Category**: The usage category of the consumption reading, from the Usage Categories table.
- **Unit of Measure**: The unit of measure of the consumption reading, from the Unit of Measure table.
- **Usage Type**: The usage type of the consumption reading (CONSUMPTION).
- **Start Read Time**: The start of the consumption reading.
- **Stop Read Time**: The stop time of the consumption reading.
- **Start Value**: The start value of the consumption reading.
- **Stop Value**: The stop value of the consumption reading.
- **Total Value**: The total value of the consumption reading.
- **Energy**: The energy represented by the consumption reading.
- **Read Status**: The read status of the consumption reading.
- **Meter Multiplier**: The meter multiplier used for the consumption reading.
- **Final Reading**: A flag that designates (Yes or No) if this reading is a final reading.
- **Totalize**: A flag that indicates the method (Include, Total, or Exclude) by which the consumption data is totalized.
- **Estimated**: A flag that indicates if the consumption reading was estimated (Yes or No).
- **Replacement Date**: The date on which the consumption reading was replaced, if applicable.
- **Replaced**: A flag that indicates if the consumption reading has been replaced (Yes or No).
- **User Edited**: A flag that indicates if the consumption reading has been edited by a user. (Yes or No)
- **Number of Dials**: The number of dials for the consumption reading
- **Read Method**: The read method used for the consumption reading
- **Read Date**: The read date for the consumption reading
- **Serial Number**: The serial number of the physical meter from which the consumption reading came
- **Transformer Loss Factor**: The transformer loss factor for the consumption reading

- **Timezone Standard Name**: The Timezone Standard Name for the consumption reading
- **DST Participant**: The DST Participant flag for the consumption reading

Users can edit the following fields on this tab:

- Start Read Time
- Stop Read Time
- Start Value
- Stop Value
- Total Value
- Energy
- Meter Multiplier
- Final Reading
- Totalize
- Replacement Date
- Number of Dials
- Read Method
- Read Date
- Serial Number
- Transformer Loss Factor
- Timezone Standard Name
- DST Participant

To search usage records, click **Search**. See **Searching Usage** on page 4-2 for more information.

To view a list of usage records, click **List**.

To reset values to their previous values, click **Reset**.

To save changes, click **Save**.

To delete the consumption reading, click **Delete**.

To validate the consumption reading, click **Validate**.

To approve the consumption reading and set its Usage Category to FINAL, click **Approve**.

Additional Fields Tab

The Additional Fields tab displays additional fields related to the consumption reading.

This tab displays the following information for the consumption reading:

- **Average Daily Usage**: The average daily usage (ADU) for the consumption reading.
- **Profile Average Daily Usage**: The average daily usage for the profile data associated with the consumption reading.
- **Average Daily Usage Variance**: The ADU variance for the consumption reading.
- **Min Value**: The minimum value of the consumption reading.
- **Max Value**: The maximum value of the consumption reading.
- **Power Flow Direction**: The power flow direction (Inbound or Outbound) for the consumption reading.
- **Pulse Multiplier**: The pulse multiplier used for the consumption reading.

- **Default Number of Decimals**: The default number of decimals for the consumption reading.
- **Meter Offset**: The meter offset used for the consumption reading.
- **Inbound Record**: The inbound record associated with the reading, from the Inbound table.

Users can edit the following fields on this tab:

- Min Value
- Max Value
- Power Flow Direction
- Pulse Multiplier
- Default Number of Decimals
- Meter Offset

To search usage records, click **Search**. See **Searching Usage** on page 4-2 for more information.

To view a list of usage records, click **List**.

To reset values to their previous values, click **Reset**.

To save changes, click **Save**.

To delete the consumption reading, click **Delete**.

To validate the consumption reading, click **Validate**.

To approve the consumption reading and set its Usage Category to Final, click **Approve**.

Exceptions Tab

The Exceptions tab lists exceptions related to the consumption reading.

For each exception, this tab displays the following:

- **Exception Category**: The exception category for the exception, from the Exception Categories table.
- **Exception Time**: The time the exception was triggered.
- **Description**: A description of the exception.
- **Exception Status**: The status of the exception, from the Usage Exception Statuses table.

To search usage records, click **Search**.

To view a list of usage records, click **List**.

Auditing Tab

The Auditing tab displays a list of the current and previous versions of the consumption record as stored in the Oracle Utilities Data Repository.

This tab displays the following information for each version record:

- **Promote**: Radio buttons that allow the user to select a record to promote.
- **Event**: An icon that designates if the version record was inserted, updated, or deleted:
  -  : Designates that the record was inserted
  -  : Designates that the record was updated
  -  : Designates that the record was deleted
- **User**: The user ID of the user who created/edited the version record

- **Time**: The date and time when the version record was edited
- **Table**: The database name of the table in which the record is stored (LSMDMTRDATAREAD).
- **Database Record**: The individual columns and column values for the record

To return to the Usage Add/Edit search screen, click **Search**.

To return to the last search results screen, click **List**.

Promote: Promoting a reading results in effectively replacing the "current" reading with a selected historical version. To promote one the existing versions, check the corresponding radio button the **Promote** column for the version you wish to promote and click **Promote**.

A dialog opens noting that selected version will replace the current version. Click **OK** to proceed. The selected version replaces the current version, and the previous current version becomes a historical version.

Physical Meter Events Tab

The Physical Meter Events tab lists physical meter events for the physical meter associated with the consumption reading.

For each event, this tab displays the following:

- **Meter Event**: The type of meter event
- **Physical Meter**: The serial number and manufacturer of the physical meter
- **Log Date**: The date on which the event occurred
- **Notes**: A note or notes related to the event

To search usage records, click **Search**. See **Searching Usage** on page 4-2 for more information.

To view a list of usage records, click **List**.

Editing Time of Use (TOU) Usage

Editing time of use (TOU) data is performed on the Edit TOU Usage screen.

How to edit TOU usage:

1. Click on the **[...]** link for the TOU usage record you wish to view or edit on the Usage Add/Edit Results screen.

   The selected usage opens in the Edit TOU Usage screen.

2. Edit the data on the **Usage Tab** and **Additional Fields Tab** as appropriate.
3. To view exceptions related to the reading, select the **Exceptions Tab**.
4. To view an audit trail for the reading, select the **Auditing Tab**.

Usage Tab

The Usage tab displays the TOU usage reading, including:

- **Meter Data Channel**: The meter ID, expected unit of measure code, and channel number of the meter, from the MDM Meters table.
- **Usage Category**: The usage category of the reading, from the Usage Categories table
- **Unit of Measure**: The unit of measure of the reading, from the Unit of Measure table
- **Usage Type**: The usage type of the reading (TOU)
- **Start Read Time**: The start time of the reading
- **Stop Read Time**: The stop time of the reading

- **Total Value**: The total value of the reading
- **Energy**: The energy represented by the reading
- **Read Status**: The read status of the reading
- **Meter Multiplier**: The meter multiplier used for the reading.
- **Transformer Loss Factor**: The transformer loss factor for the reading
- **TOU Usage Periods**: Individual time of use usage periods, each listing the following:
  - **TOU Period Name**: The name of the TOU period for the TOU reading
  - **Start Value**: The start value of the TOU reading
  - **Stop Value**: The stop value of the TOU reading
  - **Total Value**: The total value of the TOU reading
  - **Energy**: The measured energy of the TOU reading
  - **Meter Multiplier**: The meter multiplier supplied with the TOU reading
  - **Number of Dials**: The number of dials supplied with the TOU reading

Users can edit the following fields on this tab:

- Start Read Time
- Stop Read Time
- Total Value
- Energy
- Meter Multiplier
- Transformer Loss Factor
- TOU Usage Periods

To search usage records, click **Search**. See **Searching Usage** on page 4-2 for more information.

To view a list of usage records, click **List**.

To reset values to their previous values, click **Reset**.

To save changes, click **Save**.

To delete the consumption reading, click **Delete**.

To validate the consumption reading, click **Validate**.

To approve the consumption reading and set its Usage Category to FINAL, click **Approve**.

How to edit a TOU usage period:

1. Click the **[...]** link for the usage period you wish to edit.

   The selected reading opens in the **Edit TOU Usage Period** screen.

   This screen displays the following information for the selected usage period:

   - **TOU Period Name**: The name of the TOU period for the TOU usage period

     Available TOU Periods are based on the TOU Schedule defined in the Meter Configuration record for the meter and can be viewed on the TOU Periods dialog.

   - **Start Value**: The start value of the TOU usage period
   - **Stop Value**: The stop value of the TOU usage period
   - **Total Value**: The total value of the TOU usage period

- **Energy**: The measured energy of the TOU usage period
- **Meter Multiplier**: The meter multiplier supplied with the TOU usage period
- **Number of Dials**: The number of dials supplied with the TOU usage period

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.
3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.
4. To perform a new search, click **Search**.
5. To open a list of records, click **List**.
6. To delete the current record, click **Delete**.
7. To view an audit trail for the reading, select the **Auditing Tab**.
8. To return to the Edit TOU Usage screen, click **Return to Reading**.

Auditing Tab

The Auditing tab displays a list of the current and previous versions of the TOU usage record as stored in the Oracle Utilities Data Repository.

This tab displays the following information for each version record:

- **Event**: An icon that designates if the version record was inserted, updated, or deleted:
  -  : Designates that the record was inserted
  -  : Designates that the record was updated
  -  : Designates that the record was deleted
- **User**: The user ID of the user who created/edited the version record
- **Time**: The date and time when the version record was edited
- **Table**: The database name of the table in which the record is stored (LSMDMTRDATAREADTOU).
- **Database Record**: The individual columns and column values for the record

To return to the Edit TOU Usage screen, click **Return to Reading**.

How to add a TOU usage period:

1. Click **Add** above the TOU usage periods box.

   The **Add TOU Usage Period** screen opens.
2. Select the TOU period name for the usage period in the **TOU Period Name** field.

   Available TOU Periods are based on the TOU Schedule defined in the Meter Configuration record for the meter and are displayed on the TOU Periods dialog.
3. Enter the start value for the usage period in the **Start Value** field.
4. Enter the stop value for the usage period in the **Stop Value** field.
5. Enter the total value for the usage period in the **Total Value** field.
6. Enter the measured energy for the usage period in the **Energy** field.
7. Enter the meter multiplier for the usage period in the **Meter Multiplier** field.

8. Enter the number of dials for the usage period in the **Number of Dials** field.
9. To save the record, click **Save**. The new record appears on the screen.
10. To delete the current record, click **Delete**.
11. To return to the Edit TOU Usage screen, click **Return to Reading**.

How to delete TOU Usage Periods:

1. Check the checkboxes for the TOU usage period(s) you wish to delete in the TOU usage periods box.
2. Click **Delete** above the TOU periods box.
3. The deleted usage period no longer appears on the Edit TOU Usage screen.

Additional Fields Tab

The Additional Fields tab displays additional fields related to the reading.

This tab displays the following information for the reading:

- **Start Value**: The start value of the reading.
- **Stop Value**: The stop value of the reading.
- **Average Daily Usage**: The average daily usage (ADU) for the reading.
- **Profile Average Daily Usage**: The average daily usage for the profile data associated with the reading.
- **Average Daily Usage Variance**: The ADU variance for the reading.
- **Min Value**: The minimum value of the reading.
- **Max Value**: The maximum value of the reading.
- **Final Reading**: A flag that designates (Yes or No) if this reading is a final reading.
- **Totalize**: A flag that indicates the method (Include, Total, or Exclude) by which the data is totalized.
- **Estimated**: A flag that indicates if the reading was estimated (Yes or No).
- **Replacement Date**: The date on which the reading was replaced, if applicable.
- **Replaced**: A flag that indicates if the reading has been replaced (Yes or No).
- **User Edited**: A flag that indicates if the reading has been edited by a user. (Yes or No).
- **Power Flow Direction**: The power flow direction (Inbound or Outbound) for the reading.
- **Pulse Multiplier**: The pulse multiplier used for the reading.
- **Default Number of Decimals**: The default number of decimals for the reading.
- **Meter Offset**: The meter offset used for the reading.
- **Number of Dials**: The number of dials for the reading.
- **Read Method**: The read method used for the reading
- **Read Date**: The read date for the reading
- **Serial Number**: The serial number of the physical meter from which the reading came
- **Timezone Standard Name**: The Timezone Standard Name for the reading
- **DST Participant**: The DST Participant flag for the reading
- **Inbound Record**: The inbound record associated with the reading, from the Inbound table.

Users can edit the following fields on this tab:

- Start Value
- Stop Value
- Min Value
- Max Value
- Totalize
- Power Flow Direction
- Pulse Multiplier
- Default Number of Decimals
- Meter Offset
- Number of Dials
- Read Method
- Read Date
- Serial Number
- Timezone Standard Name
- DST Participant

To search usage records, click **Search**. See **Searching Usage** on page 4-2 for more information.

To view a list of usage records, click **List**.

To reset values to their previous values, click **Reset**.

To save changes, click **Save**.

To delete the reading, click **Delete**.

To validate the reading, click **Validate**.

To approve the reading and set its Usage Category to Final, click **Approve**.

Exceptions Tab

The Exceptions tab lists exceptions related to the reading.

For each exception, this tab displays the following:

- **Exception Category**: The exception category for the exception, from the Exception Categories table.
- **Exception Time**: The time the exception was triggered.
- **Description**: A description of the exception.
- **Exception Status**: The status of the exception, from the Usage Exception Statuses table.

To search usage records, click **Search**.

To view a list of usage records, click **List**.

Auditing Tab

The Auditing tab displays a list of the current and previous versions of the TOU usage record as stored in the Oracle Utilities Data Repository.

This tab displays the following information for each version record:

- **Promote**: Radio buttons that allow the user to select a record to promote.
- **Event**: An icon that designates if the version record was inserted, updated, or deleted:

-  : Designates that the record was inserted
-  : Designates that the record was updated
-  : Designates that the record was deleted

- **User**: The user ID of the user who created/edited the version record
- **Time**: The date and time when the version record was edited
- **Table**: The database name of the table in which the record is stored (LSMDMTRDATAREAD).
- **Database Record**: The individual columns and column values for the record

To return to the Usage Add/Edit search screen, click **Search**.

To return to the previous search results screen, click **List**.

Promote: Promoting a reading results in effectively replacing the "current" reading with a selected historical version. To promote one the existing versions, check the corresponding radio button the **Promote** column for the version you wish to promote and click **Promote**.

A dialog opens noting that selected version will replace the current version. Click **OK** to proceed. The selected version replaces the current version, and the previous current version becomes a historical version.

Physical Meter Events Tab

The Physical Meter Events tab lists physical meter events for the physical meter associated with the reading.

For each event, this tab displays the following:

- **Meter Event**: The type of meter event
- **Physical Meter**: The serial number and manufacturer of the physical meter
- **Log Date**: The date on which the event occurred
- **Notes**: A note or notes related to the event

To search usage records, click **Search**. See **Searching Usage** on page 4-2 for more information.

To view a list of usage records, click **List**.

Usage Analysis

This section describes how users search and view usage associated with Oracle Utilities Meter Data Management, including:

- **Searching Usage Analysis**
- **Viewing Usage Analysis**

Searching Usage Analysis

The Usage Analysis option allows users to search for and view usage.

How to search usage for viewing:

1. Select **Meter Data Management->Usage Management->Usage Analysis**.

   The **Usage Analysis** screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the meter ID, channel ID, serial number, account name, reading status, reading category, unit of measure, usage type, service point ID, service point name, market ID, organization name, service point account ID, meter account ID, date range start/stop, whether the usage is used for billing, or whether the usage is summed by month.

   To search for usage related to multiple meters, enter a meter ID in the Meter ID field and click the plus icon (). The meter ID now appears in the Actual Meter List box. To remove a Meter ID from this list, select the ID and click the minus sign ().

   To require search filters when performing a search, check the **Require search filter for lookups** checkbox.

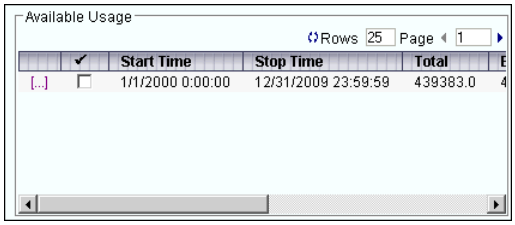
3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**.

4. The search results appear on the **Usage Analysis Results** screen.

   The Usage Analysis Results screen displays the following information for each usage record:

   - Meter ID
   - Channel ID
   - Usage Type
   - Total
   - Energy
   - UOM
   - Start Time
   - Stop Time
   - Service Point ID
   - Service Point Account ID
   - Meter Account ID
   - Serial Number

   In addition, the first record listed (designated by the  icon) is listed in the Available Usage pane.



See **Viewing Usage Analysis** on page 4-22 for more information about viewing usage.

5. To sort the results by one of the columns, click the appropriate arrow on the column heading. For example, to sort the results in ascending order by Meter ID, click the "up" arrow on the Meter ID column heading. See **Sorting Search Results** on page 2-6 for more information.

   If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field and press the **Enter** key.

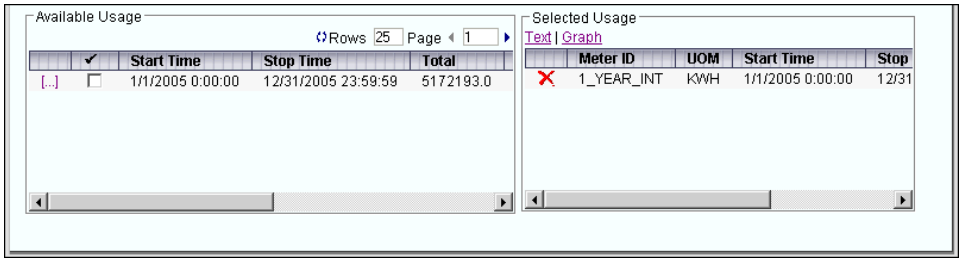
6. To view a graph of the record on the Usage Analysis Results screen, check the corresponding checkbox in the Available Usage pane.

   A graph of the usage is displayed in the **Selected Usage** pane.

   For Consumption and TOU usage, the shape of the graph in the Selected Usage pane is based on the Profile Meter associated with the meter for the current reading. If no profile meter is associated with the meter, the graph displays a flat distribution, with a value equal to the reading's total is divided by the number of days in the reading. For Consumption and TOU usage based on "demand" units of measure (units of measure for which the Aggregate Method is set to "Average" in the Unit of Measure table), the Profile Meter is ignored and the graph displays a flat distribution, with a value equal to the maximum demand for the reading.

   To change the settings of the graph, click **Graph Settings**. The **Graph Settings** dialog opens. See **Graph Settings** on page 4-23 for more information.

   To view the usage in text form, click the **Text** link in the Selected Usage pane.



   The Selected Usage pane displays the following for the selected record:

   - Meter ID
   - UOM
   - Start Time
   - Stop Time
   - Channel ID

   To delete the usage record, click the delete icon (✕). To return to the graph view, click the **Graph** link.

7. To edit the usage, click on the **[...]** link in the Available Usage pane.

   Interval and TOU usage opens on the Edit Values screen. Consumption usage opens on the Edit Usage screen. See **Viewing and Editing Usage** on page 4-8 for more information.

8. To view the meter associated with the usage record, click the **Meter ID** link.

   The selected meter opens in the MDM Meter screen. See **Viewing and Editing Meters** on page 3-3 for more information about viewing meters.

9. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

Viewing Usage Analysis

Users can also view and download selected usage analysis.

How to view usage analysis:

1. Check the corresponding checkboxes for the usage you wish to view on the Usage Analysis Results screen and click **Analysis Graph**.

   The selected usage opens on the **Usage Analysis Summary** screen.

   This screen is similar to the Interval Data Viewer Interval Data Summary screen, and allows users to view and download interval data related to revenue protection events. See **Viewing and Exporting Interval Data** on page 6-5 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about viewing interval data using this screen.

   For Consumption and TOU usage, the shape of the graph in the Selected Usage pane is based on the Profile Meter associated with the meter for the current reading. If no profile meter is associated with the meter, the graph displays a flat distribution, with a value equal to the reading's total is divided by the number of days in the reading. For Consumption and TOU usage based on "demand" units of measure (units of measure for which the Aggregate Method is set to "Average" in the Unit of Measure table), the Profile Meter is ignored and the graph displays a flat distribution, with a value equal to the maximum demand for the reading.

2. To change the settings on the graph, click **Graph Settings**. The **Graph Setting** dialog opens. See **Graph Settings** on page 4-23 for more information.

Downloading Usage

You can download data from the Usage Analysis screen in a comma-separated format, as well as in the Oracle Utilities Meter Data (LSM) format used by Oracle Utilities Meter Data Management.

How to download usage data to a CSV File:

1. Check the corresponding checkboxes for the usage you wish to export on the Usage Analysis Results screen and click **Download-›Export to CSV**.

   A **File Download - Security Warning** dialog opens.

2. To open the file, click **Open**. The file opens in a *.CSV-compatible application, such as Microsoft Excel.

3. To save the file, click **Save**. A **Save As** dialog opens. Select the destination location for the file, enter a name for the file, and click **Save**.

How to download usage data to an LSM file:

1. Check the corresponding checkboxes for the usage you wish to export on the Usage Analysis Results screen and click **Download-›Export to LSM**.

   A **File Download - Security Warning** dialog opens.

2. To open the file, click **Open**. The file opens in a *.XML compatible application, such as Microsoft Internet Explorer or XMLSpy.

3. To save the file, click **Save**. A **Save As** dialog opens. Select the destination location for the file, enter a name for the file, and click **Save**.

How to download usage data to the Compact XML format:

1. Check the corresponding checkboxes for the usage you wish to export on the Usage Analysis Results screen and click **Download-›Export to CUT**.

   A **File Download - Security Warning** dialog opens.

   To open the file, click **Open**. The file opens in a *.XML compatible application, such as Microsoft Internet Explorer or XMLSpy.

   To save the file, click **Save**. A **Save As** dialog opens. Select the destination location for the file, enter a name for the file, and click **Save**.

   Note: See **XML Compact Format** on page D-16 in the *Oracle Utilities Energy Information Platform Configuration Guide* for more information about the Compact XML format

Graph Settings

The settings used by the graphs on both the Usage Analysis Results screen and the Usage Analysis Summary screen can be changed. These settings allow users to specify that graphs display different views of selected data, such as maximum values, minimum values, etc.

How to change graph settings:

1. Click **Graph Settings** on the Usage Analysis Results screen

   The **Graph Settings** dialog opens.

2. Select graph settings as desired.

   The Graph Settings dialog contains the following settings:

   - **Scale Results To**: The SPI to which the selected usage will be scaled

     Usage of different SPIs must be scaled to the same SPI before they can be graphed. If you wish to view usage of different SPIs you need to scale one or more of the selected usage so that all the usage displayed are of the same SPI. For example, if you wish to view a usage of 15 minute data and a usage of 1 hour data, you need to scale them to a common SPI. The scaling options available include the following:

     - **Automatic**: Scales the selected usage to the highest common interval type of all the selected usage records. For example, if you select usage of 15 minute data and usage of 1 hour data, this option would scale the 15 minute data to 1 hour intervals. Note that the Automatic option does nothing if all the selected usage is of the same SPI. This is the default option. If you select usage with multiple SPI values, this option scales the selected usage to 1 hour intervals. This is the default option.
     - **5 minute intervals**: Scales the selected usage to 5 minute intervals.
     - **10 minute intervals**: Scales the selected usage to 10 minute intervals.
     - **15 minute intervals**: Scales the selected usage to 15 minute intervals.
     - **20 minute intervals**: Scales the selected usage to 20 minute intervals.
     - **30 minute intervals**: Scales the selected usage to 30 minute intervals.
     - **1 hour intervals**: Scales the selected usage to 1 hour intervals.
     - **1 day intervals**: Scales the selected usage to 1 day intervals.
     - **1 week intervals***: Scales the selected usage to 1 week intervals.
     - **1 month intervals***: Scales the selected usage to 1 month intervals.
     - **1 year intervals***: Scales the selected usage to 1 year intervals.

     ***Note:** Scaling up to and/or down from 1 week, 1 month, or 1 year intervals can produce unexpected results.

You can also scale usage of the same interval to a different SPI using this option.

- **Sum Interval Data**: If you select more than one usage record, set this option to **Yes** to create an additional graphs based on the sum of all the selected usage, regardless of other graph settings. Note that if you set this option to Yes, the data is summed regardless of unit of measure (Default: No).
- **Maximum Values**: Set this option to **Yes** to create a graph based on the maximum values of the values scaled. For example, if you scale 15-minute data values of 50, 60, 70, and 80 to 1 hour data, this method selects the maximum (80) as the scaled value (Default: No).
- **Minimum Values**: Set this option to **Yes** to create a graph based on the minimum values of the values scaled. For example, if you scale 15-minute data values of 50, 60, 70, and 80 to 1 hour data, this method selects the minimum (50) as the scaled value (Default: No).
- **Profile Difference**: Set this option to **Yes** to create a graph of the profile data associated with the selected usage, as well as a graph of the difference between the profile and the actual usage (Default: No)
- **Display Data Table**: Set this option to **Yes** to create a table of interval values (Default: Yes).
- **Average**: Set this option to **Yes** to create a graph based on the average values of the values scaled. For example, if you scale 15-minute data values of 50, 60, 70, and 80 to 1 hour data, this method selects the average (65) as the scaled value (Default: No).
- **Total Value**: Set this option to **Yes** to create a graph based on the total value of the values scaled. For example, if you scale 15-minute data values of 50, 60, 70, and 80 to 1 hour data, this method selects the total (260) as the scaled value (Default: No).
- **Automatic by (UOM)**: Set this option to **Yes** to create a graph based on the Unit-of-Measure of the selected cuts, using industry standard aggregation techniques to scale the cuts in a manner similar to either the **Averages** or **Total Value** option. If you select none of the above other options, the system uses this option by default (Default: No).
- **Apply Time of Use**: Set this option to **Yes** to create a graph that applies the associated Time of Use (TOU) schedule to the selected usage (Default: No).

3. Click **OK** to save the settings and close the dialog.

Chapter 5

Operations

This chapter describes how users work with the Oracle Utilities Meter Data Management Operations functions, including:

- **Usage Exceptions**
- **Physical Meter Events**
- **MDM Work Queue**
- **MDM Work Queue**
- **My WQ Items**
- **Process Control Interface**

Usage Exceptions

This section describes how users view usage exceptions associated with Oracle Utilities Meter Data Management, including:

- **Searching Usage Exceptions**
- **Editing and Viewing Usage Exceptions**

Searching Usage Exceptions

The Usage Exception option allows users to search for usage-related exceptions and events.

How to search open usage exceptions:

1. Select **Meter Data Management->Operations->Usage Exceptions**.

   The Usage Event/Exception screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the unit of measure, profile class, date range start/stop, serial number, channel ID, meter ID, account ID, service point ID, market ID, event type, or exception status code.

   To search based on event types, select the event type from the Event box and click the right arrow ( ). The selected event type will appear in the Actual Event List box. To remove a previously select event type, select the event type to be removed and click the left arrow ( ). The selected event type will no longer appear in the Actual Event List box. To refresh the contents of the Actual Events List box, click the Refresh icon ( ). **Note**: The available event types are from the MDM Exceptions table.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**.

4. The search results appear on the Usage Event/Exception Result screen, which displays the following information for each event:

   - Event Date
   - Event
   - Meter ID
   - Channel ID
   - UOM

   To view additional details about the event, click the plus sign ('+'). The records expands to display two tabs:

   The Additional Data tab contains the following:

   - Exception Status Code
   - Account ID
   - Service Point ID
   - Profile Class
   - Market ID
   - Description
   - Exception Status Code

   The Usage tab contains the following:

- Usage Edit icon ( )
- Usage Analysis icon ( )
- Usage Type
- Usage Category
- Start Read Time
- Stop Read Time
- SPI
- Total
- Meter ADU
- Class ADO
- ADU Variance (%)

See **Editing and Viewing Usage Exceptions** on page 5-4 for more information about viewing individual events.

5. To sort the results by one of the columns, click the appropriate arrow on the column heading. For example, to sort the results in ascending order by Meter ID, click the "up" arrow on the Meter ID column heading. See **Sorting Search Results** on page 2-6 for more information.

   To filter the results by Event or Meter ID, click the appropriate link in one of the listed records. The screen will refresh to display only those events that correspond to the selected Event or Meter.

   If there is more than one page of results, you can move between pages using the and buttons. To change the number of results that appears on each page, enter the number in the **Rows** field and press the **Enter** key.

6. To view a record, click on the corresponding **[...]** link. The related exception opens in the MDM Exceptions screen. See **Editing and Viewing Usage Exceptions** on page 5-4 for more information.

7. To edit usage related to the event, click the Usage Edit ( ) icon on the Usage tab.

   Related usage will appear on the Edit Usage screen. See **Usage Edit** on page 5-4 for more information.

8. To view usage related to the event, click the Usage Analysis ( ) icon on the Usage tab.

   Related usage will appear on the Usage Analysis Summary screen. See **Usage Analysis** on page 5-5 for more information.

9. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

10. To re-validate the usage records for one or more exception, check the record(s) you wish to re-validate and click **Validate**.

11. To approve the usage records for one or more exception and set the Usage Category to FINAL, check the record(s) you wish to approve and click **Approve**.

Editing and Viewing Usage Exceptions

From the Usage Event/Exception Result screen, users can view three types of details related to the event, including:

- **Viewing MDM Exceptions**
- **Usage Edit**
- **Usage Analysis**

Viewing MDM Exceptions

Details of usage exceptions and events can be viewed.

How to view MDM exceptions:

1. Click the **[...]** link for an event on the Usage Event/Exception Result screen for the exception you wish to view.

   The related exception opens in the MDM Exception screen.

   This screen displays the following information about the exception:

   - **UID**: Unique ID of the exception or event.
   - **Meter Data Channel**: The meter whose reading triggered the exception/event, from the MDM Meters table.
   - **Usage Category**: The usage category of the usage that triggered the exception/event, from the Usage Categories table.
   - **Start Read Time**: The start reading time of the reading that triggered the exception/event.
   - **Stop Read Time**: The stop reading time of the reading that triggered the exception/event.
   - **Exception Code**: The exception code of the exception.
   - **Exception Time**: The time exception was triggered.
   - **Description**: A description of the exception.
   - **Exception Status**: The status of the exception, from the Usage Exception Statuses table.

2. To return the Usage Event/Exception search screen, click **Search**.
3. To return to the Usage Event/Exception Result screen, click **List**.

Usage Edit

Users can also edit the usage data that triggered the event and exception. The specific manner in which the user can edit the usage is based on whether the usage is interval usage, consumption usage, or time of use (TOU) usage.

Interval Usage

Editing interval usage is performed using screens similar to the Interval Data Manager component of the Oracle Utilities Energy Information Platform.

How to edit interval usage:

1. Click on the Usage Edit () icon on the Usage tab.

   The related usage opens on the Edit Values tab of the Edit Values screen.

2. Edit the data on the **Edit Values Tab** as appropriate.

3. To edit header information, click Edit Header and edit as appropriate on the **Edit Header Screen**.
4. To view exceptions related to the interval data, select the **Exceptions Tab**.
5. To view versions of the interval data, select the **Versions Tab**.

See **Editing Interval Usage** on page 4-8 for more information about editing interval usage and the Edit Values screen.

Consumption

Editing consumption data is performed on the Edit Usage screen.

How to edit consumption usage:

1. Click on the Usage Edit () icon on the Usage tab.

   The related usage opens on the Usage tab of the Edit Usage screen.
2. Edit the data on the **Usage Tab** and **Additional Fields Tab** as appropriate.
3. To view exceptions related to the consumption reading, select the **Exceptions Tab**.
4. To view an audit trail for the consumption reading, select the **Auditing Tab**.

See **Editing Consumption Usage** on page 4-11 for more information about editing consumption usage and the Edit Usage screen.

Time of Use (TOU) Usage

Editing TOU usage is performed on the Edit TOU Usage screen.

How to edit TOU usage:

1. Click on the Usage Edit () icon on the Usage tab.

   The related usage opens on the Usage tab of the Edit TOU Usage screen.
2. Edit the data on the **Usage Tab** and **Additional Fields Tab** as appropriate.
3. To view exceptions related to the reading, select the **Exceptions Tab**.
4. To view an audit trail for the reading, select the **Auditing Tab**.

See **Editing Time of Use (TOU) Usage** on page 4-14 for more information about editing TOU usage and the Edit TOU Usage screen.

Usage Analysis

Users can also view the usage data that triggered the event and exception.

How to view usage data:

1. Click on the Usage Analysis () icon on the Usage tab.

   The related usage opens on the Usage Analysis Summary screen.

   This screen is similar the Interval Data Viewer Interval Data Summary screen, and allows users to view and download interval data related to exceptions/events. See **Viewing and Exporting Interval Data** on page 6-5 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about viewing interval data using this screen.

   When opened from the Usage Event/Exception Result screen, the Usage Analysis Summary screen displays the actual usage, profile usage (if applicable), and the difference.

   The graph shape displayed for consumption and TOU usage is based on the profile associated with the reading's meter.

Physical Meter Events

Records in the Physical Meter Event History table represent events related to physical meters that record interval and consumption usage.

Searching Physical Meter Events

You can search for existing Physical Meter Events in the Oracle Utilities Data Repository.

How to search physical meter events:

1. Select **Meter Data Management›Operations›Physical Meter Events**.

   The Physical Meter Event History screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the Meter Event, Physical Meter, Log Date Range Start or Stop, Notes associated with the event, Service Point ID, Meter ID, Channel ID, Market ID, and Account Name.

   To search for events based on multiple event types, enter an event in the Meter Event field and click the plus icon (⊕). The event type now appears in the Actual Event List box. To remove an event from this list, select the event and click the minus sign (⊖).

   To search for events related to multiple physical meters, enter a physical meter in the Physical Meter field and click the plus icon (⊕). The physical meter now appears in the Actual Physical Meter List box. To remove a meter from this list, select the ID and click the minus sign (⊖).

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Physical Meter Events** on page 5-8 for more information about adding new physical meter events.

4. The search results appear on the Physical Meter Event History screen.

   The Physical Meter Event History screen displays the following information for each event:

   - Meter Event
   - Physical Meter
   - Log Date
   - Notes

   See **Editing and Viewing Physical Meter Events** on page 5-7 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Meter Event, click the Meter Event column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Physical Meter Event History screen. See **Editing and Viewing Physical Meter Events** on page 5-7 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.
9. To add a new record, click **Add**. See **Adding Physical Meter Events** on page 5-8 for more information about adding new physical meter events.

Editing and Viewing Physical Meter Events

Individual physical meter events are viewed on the Physical Meter Event History screen. This screen opens when you select a record from the Physical Meter Event History search results screen.

How to view and edit physical meter events:

1. Click on the **[...]** link for the event you wish to view. The selected record opens on the Physical Meter Event History screen.

   This screen displays the following information for the selected record:

   - **Meter Event**: The meter event, from the **Meter Events** table.
   - **Physical Meter**: The physical meter, from the **Physical Meters** table.
   - **Log Date**: The date of the event.
   - **Note**: An optional note related to the event.
2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.
3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.
4. To perform a new search, click **Search**.
5. To open a list of records, click **List**.
6. To delete the current record, click **Delete**.

Adding Physical Meter Events

You can also add physical meter event records.

How to add physical meter event history records:

1. Click **Add** on either the Physical Meter Event History search or list screens.

   A blank Physical Meter Event History screen opens.
2. Select the meter event for the record in the **Meter Event** field.
3. Select the physical meter for the record in the **Physical Meter** field.
4. Enter the date of the event in the **Log Date** field.
5. Optional. Enter a note related to the event in the **Note** field.
6. To return to the search screen without adding a record, click **Search**.
7. To save the record, click **Save**. The new record appears on the screen.

MDM Work Queue

When warnings or error messages are generated during Oracle Utilities Meter Data Management processing, work queue items are generated.

The Oracle Utilities Meter Data Management Work Queue option on the Meter Data Management menu allows users to view all open work queue items related to Oracle Utilities Meter Data Management.

How to view Oracle Utilities Meter Data Management Work Queue items:

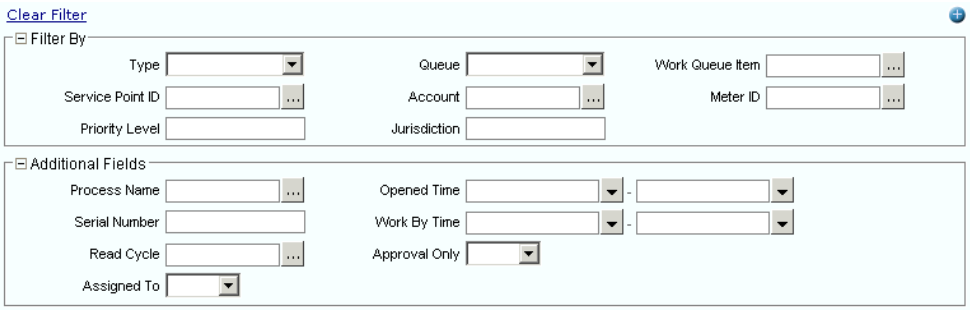
1. Select **Meter Data Management->Operations->MDM Work Queue**.

   The Work Queue Items screen opens on the Open Item Details tab. This screen lists all the currently open work queue items associated to Oracle Utilities Meter Data Management.

   The screen displays the following for each work queue item:

   - **ID**: The ID of the work queue item
   - **Type/Queue**: The Work Queue Type and Work Queue associated with the item
   - **Priority**: The item's priority
   - **Meter ID**: The meter associated with the item
   - **Service Point ID**: The service point associated with the item
   - **Work By Time**: The work by time for the item
   - **Hint(s)**: Any hints associated with the item's Work Queue Type.

2. To filter the items displayed on this screen, select filtering criteria in the **Filter By** and **Additional Fields** boxes.



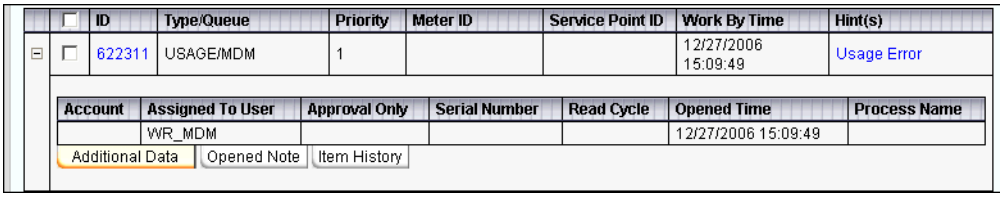
   The Filter By box allows you to filter the items displayed by Type, Queue, Work Queue Item, Service Point ID, Account, Meter ID, Priority Level, or Jurisdiction.

   The Additional Field box allows you to filter the items displayed by Process Name, Opened Time, Serial Number, Work By Time, Read Cycle, Approval Only flag, or Assigned To (User or Group).

   > **Note**: When filtering items by the "Assigned To" option, select User or Group (as appropriate) from the **Assigned To** drop-down list, and then select the appropriate user or group from the drop-down list to the immediate right. If you select "User" from the **Assigned To** drop-down list, the drop-down list to the right displays a list of all users. If you select "Group" from the **Assigned To** drop-down list, the drop-down list to the right displays a list of those groups of which the current (logged on) user is a member.
   >
   > When you apply this filter, the items displayed are those work queue items that match the filte criteria and that can be assigned to the selected user or a user within the selected group.

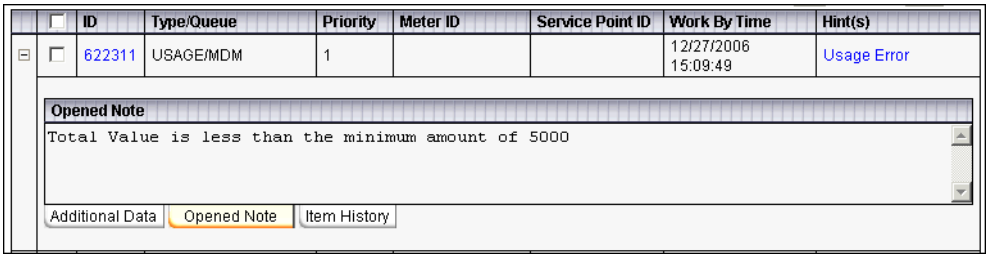
   To collapse either the **Filter By** and **Additional Fields** boxes, click the plus sign ("+") for the box you wish to collapse.

3. To specify the order in which the items are displayed, click the plus sign ("+") in the upper right corner of the screen. The sort dialog open. You can sort the items by ID (default), Work Queue Type, Priority Level, Meter ID, Service Point IT, or Work By Time. See **Specifying How Results are Sorted** on page 2-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information on sorting items on this screen.
4. To Assign, Unassign, Resolve, or Close an item on this screen, check the checkbox for the item and click the action you wish to perform.
5. To view additional information about the item, click the plus sign ("+") in the far left column. The item opens displaying three tabs: Additional Data, Opened Note, and Item History.

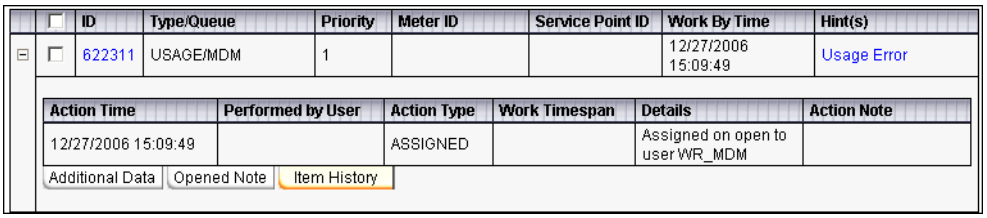


The **Additional Data** tab displays the following:

- **Account**: The account associated with the item
- **Assigned To User**: The user to whom the item is currently assigned
- **Approval Only**: Whether or not the item is an Approval
- **Serial Number**: The serial number for the meter associated with the item
- **Read Cycle**: The read cycle for the meter associated with the item
- **Opened Time**: The time the item was originally opened
- **Process Name**: The process name associated with the item



The **Opened Note** tab displays the opened note for the item.



The **Item History** tab displays specifics of the actions performed on the item, including:

- **Action Time**: The time the action was performed
- **Performed By User**: The user who performed the action
- **Action Type**: The type of action performed
- **Work Time Span**: The amount of time between this action and the last
- **Details**: Details concerning the action

- **Action Note**: An optional note concerning the action

6. To view one of the items in detail, click the **ID** link for the item you wish to view.

   To Assign, Unassign, Resolve, or Close the item from this screen, click the action you wish to perform.

Viewing Closed Work Queue Items

You can also view closed work queue items by selecting the Closed Item Details tab. This tab displays closed work queue items.

This tab includes all the same features as the Open Item Details tab (filtering, sorting, viewing additional data, and viewing details).

The only action available from this tab is to Reopen work queue items.

My WQ Items

The My WQ Items option on the Meter Data Management menu allows users to view all open work queue items related to Oracle Utilities Meter Data Management that are currently assigned to them.

How to view "my" Meter Data Management Work Queue items:

1. Select **Meter Data Management->Operations->My WQ Items**.

   The Work Queue Items screen opens on the Open Item Details tab, displaying only those items assigned to the current user.

This screen (both the Open Item Details and the Closed Item Details tabs) provides the same features and functions as the screen available from the MDM Work Queue menu option.

Process Control Interface

The Process Control Interface screen displays the status of meter data management import processes executed by the Energy Information Platform Adapter. This screen is helpful when researching issues related to import of usage data into Oracle Utilities Meter Data Management. This screen displays information based on the number of payloads and transactions processed. A payload is an import file (or database record, or JMS queue message) used to import usage and meter events. A transaction is a single usage or meter event record within a payload.

How to view the Process Control Interface:

1. Select **Meter Data Management->Operations->Process Control Interface**.

   The Process Control Interface screen opens.

2. To filter the records displayed, enter the filtering criteria in one or more of the fields above the record list. Filtering options include Server, Source, Date, Status, Start Time, Stop Time, and Source File Name.

   Date options include:

   - **Today Only** (default): Displays results as of midnight on the current day.
   - **Previous Day**: Displays results since midnight on the previous day.
   - **Last 7 Days**: Displays results since midnight seven days minus the current day.
   - **Current Month**: Displays results for the time period beginning at midnight on the first day of the current month.
   - **Previous Month**: Displays results for the previous month. The start time for the month is midnight of the first day of the previous month, and the stop time is 23:59:59 of the last day of the previous month.
   - **Custom**: When selected, this option enables the Start Time and Stop Time fields. The default start time is midnight on the current date. Enter a start time or stop time.

3. Select the view you wish to use from the **Group By** drop-down list. You can view processes in one of three views:

   - **System** (default): Displays records for each process executed by the system. See **System View** on page 5-13 for more information.
   - **Server Name**: Groups processes based on the server on which they were executed. See **Server Name View** on page 5-14 for more information.
   - **Day**: Groups processes based on the date on which they were executed. See **Day View** on page 5-15 for more information.

4. To force the screen to automatically refresh the displayed data periodically, check the **Refresh Periodically** checkbox.

5. To reset the screen to default settings, click **Reset**.

System View

The System view displays statistics for individual processes, based on the filtering criteria.

For each process record listed, this view displays the following:

- **Source**: The name of the Runtime Service
- **Payloads**: The number of payloads processed
- **Transactions**: Details concerning the number of transactions processed, including:
  - **Total**: The total number of transactions processed. This number should equal the sum of the values in the Usage, Events, and Deleted columns. A number in **red** indicates a

discrepancy between the total number of transactions stored in the Inbound table (one per process), and the sum of the transactions in the children Inbound Transaction records.

- **Usage**: The number of usage readings successfully imported, followed by the total number of usage readings processed (separated by a slash ('/')). When the cursor is positioned over this column, a tool tip displays the percentage of usage readings successfully imported.
- **Events**: The number of meter events successfully imported, followed by the total number of meter events processed (separated by a slash ('/')). When the cursor is positioned over this column, a tool tip displays the percentage of meter events successfully imported.
- **Deleted**: The number of transactions deleted since the process was executed
- **Rejected**: The number of rejected transactions
- **Replaced**: The number of replaced transactions
- **Rate Processed**: The rate at which transactions are processed, represented as the number of transactions processed per minute

Viewing Payload, Transaction, and Exception Details by System

To view payload details, click the number in the **Payloads** column. The Payload Details screen opens. See **Payload Details** on page 5-17 for more information.

To view Transaction details, click the number in the **Total** column. The Transaction Details screen opens. See **Transaction Details** on page 5-18 for more information.

To view exception details, click the number in the **Rejected** column. The Critical Exceptions screen opens. See **Critical Exceptions** on page 5-19 for more information.

Server Name View

The Server Name view groups processes by the server on which they were executed, based on the filtering criteria. This view also allows users to drill-down and view details for each process executed on a selected server.

The **Total** row displays summary information for all the records displayed.

For each server record listed, this screen displays the following:

- **Server Name**: The name of the server.
- **Payloads**: The number of payloads processed
- **Transactions**: Details concerning the number of transactions processed, including:
  - **Loaded**: The number of transactions (including usage readings and meter events) successfully imported.
  - **Rejected**: The number of transactions (including usage readings and meter events) rejected.
  - **Total**: The total number of transactions (including usage readings and meter events) processed. This number should equal the sum of the Loaded and Rejected columns. A number in **red** indicates a discrepancy between the total number of transactions stored in the Inbound table (one per process), and the sum of the transactions in the children Inbound Transaction records.

Viewing Payload, Transaction, and Exception Details by Server

To view payload details, click the number in the **Payloads** column. The Payload Details screen opens. See **Payload Details** on page 5-17 for more information.

To view Transaction details, click the number in the **Loaded** column. The Transaction Details screen opens. See **Transaction Details** on page 5-18 for more information.

To view exception details, click the number in the **Rejected** column. The Critical Exceptions screen opens. See **Critical Exceptions** on page 5-19 for more information.

Viewing Process Details

To view additional details for a specific server, click the plus sign ('+'). The display expands to list individual processes executed on the selected server. For each process record listed, this view displays the following:

- **Source**: The name of the Runtime Service
- **Payloads**: The number of payloads processed.
- **Transactions**: Details concerning the number of transactions processed, including:
  - **Total**: The total number of transactions processed. This number should equal the sum of the values in the Usage, Events, and Deleted columns. A number in **red** indicates a discrepancy between the total number of transactions stored in the Inbound table (one per process), and the sum of the transactions in the children Inbound Transaction records.
  - **Usage**: The number of usage readings successfully imported, followed by the total number of usage readings processed (separated by a slash ('/')).
  - **Events**: The number of meter events successfully imported, followed by the total number of meter events processed (separated by a slash ('/')).
  - **Deleted**: The number of transactions deleted since the process was executed
  - **Rejected**: The number of rejected transactions
  - **Replaced**: The number of replaced transactions
  - **Rate Processed**: The rate at which transactions are processed, represented as the number of transactions processed per minute

Viewing Payload, Transaction, and Exception Details by Process

To view payload details, click the number in the **Payloads** column. The Payload Details screen opens. See **Payload Details** on page 5-17 for more information.

To view Transaction details, click the number in the **Total** column. The Transaction Details screen opens. See **Transaction Details** on page 5-18 for more information.

To view exception details, click the number in the **Rejected** column. The Critical Exceptions screen opens. See **Critical Exceptions** on page 5-19 for more information.

Day View

The Day view groups processes based on the date on which they were executed, based on the filtering criteria. This view also allows users to drill-down and view details for each process executed on a selected date.

The **Total** row displays summary information for all the records displayed.

For each record listed, this screen displays the following:

- **Day**: The date on which processing took place.
- **Payloads**: The number of payloads processed
- **Transactions**: Details concerning the number of transactions processed, including:
  - **Loaded**: The number of transactions (including usage readings and meter events) successfully imported.

- **Rejected**: The number of transactions (including usage readings and meter events) rejected.
- **Total**: The total number of transactions (including usage readings and meter events) processed. This number should equal the sum of the Loaded and Rejected columns. A number in **red** indicates a discrepancy between the total number of transactions stored in the Inbound table (one per process), and the sum of the transactions in the children Inbound Transaction records.

Viewing Payload, Transaction, and Exception Details by Day

To view payload details, click the number in the **Payloads** column. The Payload Details screen opens. See **Payload Details** on page 5-17 for more information.

To view Transaction details, click the number in the **Loaded** column. The Transaction Details screen opens. See **Transaction Details** on page 5-18 for more information.

To view exception details, click the number in the **Rejected** column. The Critical Exceptions screen opens. See **Critical Exceptions** on page 5-19 for more information.

Viewing Process Details

To view additional details for a specific server, click the plus sign ('+'). The display expands to list individual processes executed on the selected server. For each process listed, this view displays the following:

- **Source**: The name of the Runtime Service
- **Payloads**: The number of payloads processed.
- **Transactions**: Details concerning the number of transactions processed, including:
  - **Total**: The total number of transactions processed. This number should equal the sum of the values in the Usage, Events, and Deleted columns. A number in **red** indicates a discrepancy between the total number of transactions stored in the Inbound table (one per process), and the sum of the transactions in the children Inbound Transaction records.
  - **Usage**: The number of usage readings successfully imported, followed by the total number of usage readings processed (separated by a slash ('/')).
  - **Events**: The number of meter events successfully imported, followed by the total number of meter events processed (separated by a slash ('/')).
  - **Deleted**: The number of transactions deleted since the process was executed
  - **Rejected**: The number of rejected transactions
  - **Replaced**: The number of replaced transactions
  - **Rate Processed**: The rate at which transactions are processed, represented as the number of transactions processed per minute

Viewing Payload, Transaction, and Exception Details by Process

To view payload details, click the number in the **Payloads** column. The Payload Details screen opens. See **Payload Details** on page 5-17 for more information.

To view Transaction details, click the number in the **Total** column. The Transaction Details screen opens. See **Transaction Details** on page 5-18 for more information.

To view exception details, click the number in the **Rejected** column. The Critical Exceptions screen opens. See **Critical Exceptions** on page 5-19 for more information.

Payload Details

The Payload Details screen displays details for individual payloads, grouped by the Runtime Service that processed the payload. This screen opens when the user clicks the number in the Payload column on the Process Control Interface screen.

If there is more than one page of sources, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

This screen displays the following for each Runtime Service displayed:

- **Source**: The name of the Runtime Service
- **Count**: The number of payloads processed by the service

To view additional details for a specific service, click the plus sign ('+'). The display expands to list individual payloads executed by the selected service. If there is more than one page of payloads, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

For each payload listed, this view displays the following:

- **Inbound File Name**: The path and file name of the payload file
- **Receive Date**: The date and time at which the payload was received
- **Completed Date**: The date and time at which processing of the payload was completed
- **Total Transactions**: The total number of transactions in the payload. This number should equal the sum of the values in the Usage Loaded, Events Loaded, and Total Rejected columns.
- **Total Loaded**: The total number of transactions in the payload that were successfully imported into the database. This number should equal the sum of the values in the Usage Loaded and Events Loaded.
- **Usage Loaded**: The number of usage reading in the payload that were successfully imported into the database.
- **Events Loaded**: The number of meter events in the payload that were successfully imported into the database.
- **Total Rejected**: The number of transactions in the payload that were rejected.

To view the Inbound record for the payload, click the **[...]** link. The Inbound screen opens displaying the Inbound record for the selected payload. See **Viewing Adapter Transactions** on page 11-119 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about viewing Inbound records.

To return the Process Control Interface screen, click **Return to Statistics**.

Viewing Inbound, Transaction, and Exception Details by Payload

To view Transaction details, click the number in the **Total Transactions** column. The Transaction Details screen opens. See **Transaction Details** on page 5-18 for more information.

To view exception details, click the number in the **Total Rejected** column. The Critical Exceptions screen opens. See **Critical Exceptions** on page 5-19 for more information.

Transaction Details

The Transaction Details screen displays details for individual transactions, grouped by the type of transaction (Usage Readings or Events). This screen opens when the user clicks the number in the Total column on the Process Control Interface screen (or the Total Transactions column on the Payload Details screen).

This screen displays the following for each type of transaction:

- **Transaction Type**: The type of transaction, either Usage Reading or Event.
- **Count**: The number of transactions of the indicated type

To view additional details for transactions of a specific type, click the plus sign ('+'). The display expands to list additional details as follows:

Usage Readings	Events
Usage Category: The Usage Category (Raw Usage, Staging Usage, Final Usage, or Inactive Usage)	**Event Category**: The Event Category (Physical Events or Logical Events)
Count: The number of usage readings of the indicated usage category	**Count**: The number of meter events of the indicated usage category

To return the Process Control Interface screen, click **Return to Statistics**.

Viewing Usage Readings

To view additional details for usage readings, click the plus sign ('+') for the usage category you wish to view. The display expands to list additional details for each usage reading. If there is more than one page of records, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

For each usage reading listed, this view displays the following:

- **Meter Data Channel**: The logical Meter ID for the reading
- **Physical Meter**: The Serial Number for the reading
- **Start Date**: The start date and time of the reading
- **Stop Date**: The stop date and time of the reading
- **Usage Type**: The usage type for the reading
- **Status**: The reading's status (New, Processed, Failed, Verified, or Valid)
- **Total Reading**: The total for the reading
- **Energy**: The energy for the reading

To view usage details, click the **[...]** link. The Edit Usage (for consumption or TOU readings) or Edit Values (for interval readings) screen opens displaying the selected usage record. See **Viewing and Editing Usage** on page 4-8 for more information about viewing usage readings.

To view payload details, click the link The Payload Details screen opens, displaying the payload that included the selected usage reading. See **Payload Details** on page 5-17 for more information.

Viewing Events

To view additional details for events, click the plus sign ('+') for the event category you wish to view. The display expands to list additional details for each meter event. If there is more than one page of records, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

For each meter event listed, this view displays the following:

- **Event Message**: The event's message
- **Type**: The event type
- **Date**: The date and time of the event
- **Meter Data Channel**: The logical Meter ID for the reading
- **Physical Meter**: The Serial Number for the reading

To view exception details, click the **[...]** link. The Physical Meter Event History (for physical events) or the MDM Exception (for logical events) screen opens, displaying the selected exception. See **Editing and Viewing Physical Meter Events** on page 5-7 for more information about viewing physical events. See **Editing and Viewing Usage Exceptions** on page 5-4 for more information about viewing logical events.

To view payload details, click the link The Payload Details screen opens, displaying the payload that corresponds to the selected meter event. See **Payload Details** on page 5-17 for more information.

Critical Exceptions

The Critical Exceptions screen displays details for individual exceptions, grouped by Exception Code. This screen opens when the user clicks the number in the Rejected column on the Process Control Interface screen (or the Total Rejected column on the Payload Details screen). If there is more than one page of exception codes, you can move between pages using the and buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

For each Exception Code, this screen lists the following:

- **Exception Code**: The exception code
- **Count**: The number of exceptions for this exception code. Note that there can be more than one critical exception for a single transaction.

To view individual exceptions, click the plus sign ('+') for the Exception Code. The Exception Code line expands to display a list of the individual exceptions.If there is more than one page of exceptions, you can move between pages using the and buttons. To change the number of exceptions that appears on each page, enter the number in the **Rows** field.

For each exception, the screen displays the following:

- **Initial Payload**: The file name of the payload file that triggered the exception
- **Error File**: The name of the error file
- **Error Category**: The category of the exception
- **Time of Exception**: The time of the exception
- **Message**: The error message returned by the exception

To view payload details, click the link The Payload Details screen opens, displaying the payload that corresponds to the selected exception. See **Payload Details** on page 5-17 for more information.

To return the Process Control Interface screen, click **Return to Statistics**.

Chapter 6

Revenue Protection Events

This chapter describes how users view revenue protection events associated with Oracle Utilities Meter Data Management, including:

- **Searching Revenue Protection Events**
- **Editing and Viewing Revenue Protection Events**

Searching Revenue Protection Events

The Revenue Protection Events option allows users to search for exceptions and events related to revenue protection, such as Meter Alerts, Tampering, and Reverse Rotation events. These also include results of business rules that have lower-than-expected usage, and average daily usage (ADU) tolerance checks that compare the ADU for a meter reading to that of an assigned profile meter. If the ADU varies by more than a configurable percentage, an ADU Tolerance exception is created.

How to search revenue protection events:

1. Select **Revenue Protection Events->Search Events**.

   The Search Revenue Protection Event screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the unit of measure, profile class, date range start/stop, serial number, channel ID, meter ID, account ID, service point ID, market ID, event type, or exception status code.

   To search based on event types, select the event type from the Events box and click the right arrow (). The selected event type will appear in the Actual Event List box. To remove a previously select event type, select the event type to be removed and click the left arrow (). The selected event type will no longer appear in the Actual Event List box. To refresh the contents of the Actual Events List box, click the Refresh icon ().

   Note: The available event types are from the MDM Exception table, where the Exception Category is REVENUEPROTECTION.

   To search based on Average Daily Usage (ADU), select an operand and enter the Meter ADU, ADU Variance, or Class ADU in the corresponding fields.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**.

4. The search results appear on the Revenue Protection Event Result screen, which displays the following information for each event:

   - Event Date
   - Event
   - Meter ID
   - Channel ID
   - UOM

   To view additional details about the event, click the plus sign ('+'). The records expands to display two tabs:

   The Additional Data tab contains the following:

   - Exception Status Code
   - Account ID
   - Service Point ID
   - Profile Class
   - Market ID
   - Description
   - Exception Status Code

   The Usage tab contains the following:

- Usage Edit icon ( )
- Usage Analysis icon ( )
- Usage Type
- Usage Category
- Start Read Time
- Stop Read Time
- SPI
- Total
- Meter ADU
- Class ADO
- ADU Variance (%)

5. See **Editing and Viewing Revenue Protection Events** on page 6-4 for more information about viewing individual events.
6. To sort the results by one of the columns, click the appropriate arrow on the column heading. For example, to sort the results in ascending order by Meter ID click the "up" arrow on the Meter ID column heading. See **Sorting Search Results** on page 2-6 for more information.

   To filter the results by Event or Meter ID, click the appropriate link in one of the listed records. The screen will refresh to display only those events that correspond to the selected Event or Meter.

   If there is more than one page of results, you can move between pages using the and buttons. To change the number of results that appears on each page, enter the number in the **Rows** field and press the **Enter** key.
7. To view a record, click on the corresponding **[...]** link. The related exception opens in the MDM Exception screen. See **Editing and Viewing Revenue Protection Events** on page 6-4 for more information.
8. To edit usage related to the event, click the Usage Edit ( ) icon on the Usage tab.

   Related usage will appear on the Edit Usage screen. See **Usage Edit** on page 6-4 for more information.
9. To view usage related to the event, click the Usage Analysis ( ) icon on the Usage tab.

   Related usage will appear on the Usage Analysis Summary screen. See **Usage Analysis** on page 6-5 for more information.
10. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.
11. To re-validate the usage records for one or more event, check the record(s) you wish to re-validate and click **Validate**.
12. To approve the usage records for one or more event and set the Usage Category to FINAL, check the record(s) you wish to approve and click **Approve**.

Editing and Viewing Revenue Protection Events

From the Revenue Protection Event Results screen, users can view three types of details related to the event, including:

- **Viewing Oracle Utilities Meter Data Management Exceptions**
- **Usage Edit**
- **Usage Analysis**

Viewing Oracle Utilities Meter Data Management Exceptions

Revenue protection events have related exceptions that can be viewed.

How to view Oracle Utilities Meter Data Management exceptions based on revenue protection events:

1. Click the **[...]** link for an event on the Revenue Protection Event Result screen for the exception you wish to view.

   The related exception opens in the MDM Exception screen.

   This screen displays the following information about the exception:

   - **UID**: Unique ID of the exception related to the event.
   - **Meter Data Channel**: The meter whose reading triggered the exception/event, from the MDM Meters table.
   - **Usage Category**: The usage category of the usage that triggered the exception/event, from the Usage Categories table.
   - **Start Read Time**: The start reading time of the reading that triggered the exception/event.
   - **Stop Read Time**: The stop reading time of the reading that triggered the exception/event.
   - **Exception Code**: The exception code of the exception.
   - **Exception Time**: The time exception was triggered.
   - **Description**: A description of the exception.
   - **Exception Status**: The status of the exception, from the Usage Exception Statuses table.

2. To return the Revenue Protection Event screen, click **Search**.
3. To return to the Revenue Protection Even Result screen, click **List**.

Usage Edit

Users can also edit the usage data that triggered the event and exception. The specific manner in which the user can edit the usage are based on whether the usage is interval usage or consumption.

Interval Usage

Editing interval usage is performed using screens similar to the Interval Data Manager component of the Oracle Utilities Energy Information Platform.

How to edit interval usage:

1. Click on the Usage Edit () icon on the Usage tab.

   The related usage opens on the Edit Values tab of the Edit Values screen.

2. Edit the data on the **Edit Values Tab** as appropriate.

3. To edit header information, click Edit Header and edit as appropriate on the **Edit Header Screen**.
4. To view exceptions related to the interval data, select the **Exceptions Tab**.
5. To view versions of the interval data, select the **Versions Tab**.

See **Editing Interval Usage** on page 4-8 for more information about editing interval usage and the Edit Values screen.

Consumption

Editing consumption data is performed on the Edit Usage screen.

How to edit consumption usage:

1. Click on the Usage Edit ( ) icon on the Usage tab.

   The related usage opens on the Usage tab of the Edit Usage screen.
2. Edit the data on the **Usage Tab** and **Additional Fields Tab** as appropriate.
3. To view exceptions related to the consumption reading, select the **Exceptions Tab**.
4. To view an audit trail for the consumption reading, select the **Auditing Tab**.

See **Editing Consumption Usage** on page 4-11 for more information about editing consumption usage and the Edit Usage screen.

TOU Usage

Editing TOU usage is performed on the Edit TOU Usage screen.

How to edit TOU usage:

1. Click on the Usage Edit ( ) icon on the Usage tab.

   The related usage opens on the Usage tab of the Edit TOU Usage screen.
2. Edit the data on the **Usage Tab** and **Additional Fields Tab** as appropriate.
3. To view exceptions related to the reading, select the **Exceptions Tab**.
4. To view an audit trail for the reading, select the **Auditing Tab**.

See **Editing Time of Use (TOU) Usage** on page 4-14 for more information about editing TOU usage and the Edit TOU Usage screen.

Usage Analysis

Users can also view the usage data that triggered the event and exception.

How to view usage data:

1. Click on the Usage Analysis ( ) icon on the Usage tab.

   The related usage opens on the Usage Analysis Summary screen.

   This screen is similar the Interval Data Viewer Interval Data Summary screen, and allows users to view and download interval data related to exceptions/events. See **Viewing and Exporting Interval Data** on page 6-5 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about viewing interval data using this screen.

   When opened from the Usage Event/Exception Result screen, the Usage Analysis Summary screen displays the actual usage, profile usage (if applicable), and the difference.

   The graph shape displayed for consumption and TOU usage is based on the profile associated with the reading's meter.

Chapter 7

Assets and Setup

This chapter describes how users work with Oracle Utilities Meter Data Management assets and setup, including:

- **Assets**
  - **Physical Meters**
  - **Physical Meter Location History**
  - **Meter Read Systems**
  - **Meter Manufacturers**
- **Setup**
  - **Meter Exception Codes**
  - **Meter Events**
  - **Meter Event Types**
  - **Physical Meter Statuses**
  - **Physical Meter Locations**
  - **Physical Meter Location Types**
  - **Physical Meter Types**
  - **Read Cycle Frequencies**
  - **Read Cycles**
  - **Read Cycle Dates**

Assets

Oracle Utilities Meter Data Management assets includes records that define physical assets related to meters, including:

- **Physical Meters**
- **Physical Meter Location History**
- **Meter Read Systems**
- **Meter Manufacturers**

Physical Meters

Records in the Physical Meter table represent actual physical meters that record usage and consumption.

Searching Physical Meters

You can search for existing Physical Meters in the Oracle Utilities Data Repository.

How to search physical meters:

1. Select **Meter Data Management->Assets->Physical Meters**.

   The Physical Meter screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Serial Number, Meter Manufacturer, Physical Meter Type, Model Number, or Notes associated with the physical meter.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Physical Meters** on page 7-8 for more information about adding new physical meters.

4. The search results appear on the Physical Meter screen.

   The Physical Meter screen displays the following information for each meter:

   - UID
   - Serial Number
   - Meter Manufacturer
   - Physical Meter Type
   - Model Number
   - Notes

   See **Viewing and Editing Physical Meters** on page 7-3 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Serial Number, click the Serial Number column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Physical Meter screen. See **Viewing and Editing Physical Meters** on page 7-3 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.
8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.
9. To add a new record, click **Add**. See **Adding Physical Meters** on page 7-8 for more information about adding new physical meters.

Viewing and Editing Physical Meters

Individual physical meters are viewed on the Physical Meter screen. This screen opens when you select a record from the Physical Meter search results screen.

How to view and edit physical meters:

1. Click on the **[...]** link for the meter you wish to view. The selected record opens on the Meter tab of the Physical Meter screen.

   This tab displays the following information for the selected physical meter:

   - **UID**: A unique id for the physical meter.
   - **Serial Number**: The serial number of the meter.
   - **Meter Manufacturer**: The manufacturer of the meter, from the **Meter Manufacturers** table.
   - **Physical Meter Type**: The type of meter, from the **Physical Meter Types** table.
   - **Model Number**: The manufacturer's model number for the meter.
   - **Notes**: Notes about the physical meter.
   - **Meter Configurations**: A pane that displays configuration details for the meter, including **Meter Configuration** records, **Physical Meter Event History** records, **Installed Meter Read System History** records, and **Physical Meter Location History** records.
2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.
3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.
4. To perform a new search, click **Search**.
5. To open a list of records, click **List**.
6. To delete the current record, click **Delete**.
7. To view an auditing trail for this physical meter, click the **Auditing** tab. See **Auditing Tab** on page 7-3 for more information.
8. You can also add, edit, or delete Meter Configuration records, Physical Meter Event History records, Installed Meter Read System History records, or Physical Meter Location History records for the physical meter. See **Meter Configuration** on page 7-4, **Physical Meter Event History** on page 7-5, **Installed Meter Read System History** on page 7-6, and **Physical Meter Location History** on page 7-8 for more information about adding, editing, and deleting these records.

Auditing Tab

The Auditing tab displays a list of the current and previous versions of the Physical Meter record as stored in the Oracle Utilities Data Repository.

This tab displays the following information for each physical meter version record:

- **Icon**: An icon that designates if the version record was inserted, updated, or deleted:
  -  : Designates that the record was inserted
  -  : Designates that the record was updated
  -  : Designates that the record was deleted
- **User**: The user ID of the user who created/edited the version record
- **Time**: The date and time when the version record was edited
- **Table**: The database name of the table in which the version record is stored
- **Database Record**: The individual columns and column values for the version record

To return to the Physical Meter search screen, click **Search**.

To return to the previous Physical Meter search results screen, click **List**.

Meter Configuration

The Meter Configuration tab lists Meter Configuration records for the Physical Meter. Meter Configuration records define several characteristics of a meter and its use within the Oracle Utilities Meter Data Management application.

This tab displays the following information for each record:

- **UID**: A unique id for the meter configuration record.
- **Meter Data Channel**: The meter corresponding to the meter configuration record, from the MDM Meter table.
- **Start Time**: The start time of the meter configuration record.
- **Stop Time**: The stop time of the meter configuration record.
- **Read Cycle**: The read cycle for the meter configuration record, from the Read Cycle table.
- **TOU Schedule**: The time-of-use (TOU) schedule used with the meter configuration record, from the TOU Schedules table.
- **Validation Group**: The validation group used with the meter configuration record, from the Validation Groups table. See **Validation Groups** on page 3-14 for more information about validation groups.
- **Profile Meter**: The profile meter associated with the meter configuration record, from the MDM Meter table.
- **Meter Multiplier**: The meter multiplier of the meter defined in the meter configuration record.
- **Number of Dials**: The number of dials on the meter defined in the meter configuration record.
- **Meter Offset**: The meter offset of the meter defined in the meter configuration record.
- **Seconds Per Interval**: The seconds-per-interval (SPI) of the meter defined in the meter configuration record.
- **Default Number of Decimals**: The default number of decimals included in meter readings from the meter defined in the meter configuration record.
- **Pulse Multiplier**: The pulse multiplier of the meter defined in the meter configuration record.

- **Power Flow Direction**: The power flow direction (Received or Distributed) of the meter defined in the meter configuration record.
- **Totalize**: A flag that indicates the method (Include, Total, or Exclude) by which the data (interval or scalar) recorded by the meter defined in the meter configuration record is totalized.
- **Billed?**: A flag (Yes or No) that indicates whether or not the data stored by the meter defined in the meter configuration record is required for billing.
- **KE**: The solid state meter constant of the meter defined in the meter configuration record (data schema specific).
- **CT**: The current transformer ratio of the meter defined in the meter configuration record (data schema specific).
- **VT**: The voltage transformer ratio of the meter defined in the meter configuration record (data schema specific).
- **KH**: The watt-hour meter constant of the meter defined in the meter configuration record (data schema specific).
- **TR**: Additional dial constant (for universal register meters) of the meter defined in the meter configuration record (data schema specific).
- **Account**: The account associated with the meter defined in the meter configuration record
- **Transformer Loss Factor**: The transformer loss factor of the meter defined in the meter configuration record

To view a record, click on the corresponding **[...]** link. The selected record will appear in the Meter Configuration screen. See **Viewing and Editing Meter Configurations** on page 3-11 for more information.

To search for specific meter configuration records, click **Search**. See **Searching Meter Configurations** on page 3-9 for more information.

To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

To add a meter configuration record for the physical meter, click **Add**. See **Adding Meter Configurations** on page 3-13 for more information.

Physical Meter Event History

The Physical Meter Event History tab lists meter event records for the Physical Meter. Meter event records define specific events that have occurred related to the meter.

This tab displays the following information for each record:

- **Meter Event**: The meter event, from the **Meter Events** table.
- **Log Date**: The date of the event.
- **Notes**: An optional note related to the event.

To view a record, click on the corresponding **[...]** link. The selected record will appear in the Physical Meter Event History screen.

To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

How to search physical meter event history records:

1. Click **Search** on the Physical Meter Event History tab.

   The Physical Meter Event History screen opens.

2. Enter the search criteria in the appropriate field.

You can search based on the meter event, physical meter, log date, or notes.

See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**.
4. The search results appear on the Physical Meter Event History screen.

   This screen displays the following information for each record:

   - **Meter Event**: The meter event, from the **Meter Events** table.
   - **Physical Meter**: The physical meter to which the event occurred.
   - **Log Date**: The date of the event.
   - **Notes**: An optional note related to the event.
5. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Physical Meter Event History screen.
6. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.
7. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

How to add a physical meter event history record:

1. Click **Add** on either the Physical Meter Event History tab of the Physical Meter screen, or the Physical Meter Event History search or list screens.

   A blank Physical Meter Event History screen opens.
2. Select the meter event for the record in the **Meter Event** field.
3. Select the physical meter for the record in the **Physical Meter** field.
4. Enter the date of the event in the **Log Date** field.
5. Enter an optional note related to the event in the **Notes** field.
6. To return to the search screen without adding a record, click **Search**.
7. To save the record, click **Save**. The new record appears on the screen.

Installed Meter Read System History

The Meter Read System History tab lists the meter reads systems related to the physical meter. These records define the meter read systems that have been associated with the meter over time.

This tab displays the following information for each record:

- **Meter Read System**: The meter read system, from the **Meter Read Systems** table.
- **Start Time**: The start time after which the physical meter is associated with the meter read system.
- **Stop Time**: The stop time before which the physical meter is associated with the meter read system.
- **Status Code**: The current status of the Meter Read System, from the **Read System Status Codes** table.
- **Data Concentrator**: The Data Concentrator associated with the physical meter, from the **Data Concentrator** table.

To view a record, click on the corresponding **[...]** link. The selected record will appear in the Installed Meter Read System History screen.

To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

How to search installed meter read system history records:

1. Click **Search** on the Installed Meter Read System History tab.

   The Installed Meter Read System History screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the meter read system, physical meter, start time, or stop time.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**.

4. The search results appear on the Installed Meter Read System History screen.

   This screen displays the following information for each record:

   - **Meter Read System**: The meter read system, from the **Meter Read Systems** table.
   - **Physical Meter**: The physical meter to which the meter read system is associated.
   - **Start Time**: The start time after which the physical meter is associated with the meter read system.
   - **Stop Time**: The stop time before which the physical meter is associated with the meter read system.
   - **Status Code**: The current status of the Meter Read System, from the Read System Status Codes table.
   - **Data Concentrator**: The Data Concentrator associated with the physical meter, from the Data Concentrator table.

5. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Installed Meter Read System History screen.

6. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

7. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

How to add an installed meter read system history record:

1. Click **Add** on either the Installed Meter Read System History tab of the Physical Meter screen, or the Installed Meter Read System History search or list screens.

   A blank Installed Meter Read System History screen opens.

2. Select the meter read system for the record in the **Meter Read System** field.

3. Select the physical meter for the record in the **Physical Meter** field.

4. Enter the start time after which the physical meter is associated with the meter read system in the **Start Time** field.

5. Enter the stop time before which the physical meter is associated with the meter read system in the **Stop Time** field.

6. Select the meter read system status for the record in the **Status Code** field.

7. Select the data concentrator for the record in the **Data Concentrator** field.
8. To return to the search screen without adding a record, click **Search**.
9. To save the record, click **Save**. The new record appears on the screen.

Physical Meter Location History

The Physical Meter Location History tab lists Physical Meter Location History records for the Physical Meter. Physical Meter Location History records indicate the where and when a specific physical meter is located at a given time.

This tab displays the following information for each record:

- **Location**: The location of the physical meter for this record, from the Physical Meter Locations table.
- **Arrival Time**: The date and time at which the physical meter arrived at the location specified in this record.
- **Reference Number**: A reference number for the physical meter
- **Departure Time**: The date and time at which the physical meter departed from the location specified in this record.
- **Storage Location**: Where the physical meter is stored in the location specified in this record.
- **Status**: The status of the physical meter, from the Physical Meter Statuses table.
- **Notes**: Notes about the physical meter and its storage at the location specified in this record.

To view a record, click on the corresponding **[...]** link. The selected record will appear in the Meter Configuration screen. See **Viewing and Editing Physical Meter Location History Records** on page 7-10 for more information.

To search for specific records, click **Search**. See **Searching Physical Meter Location History Records** on page 7-9 for more information.

To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

To add a record for the physical meter, click **Add**. See **Adding Physical Meter Location History Records** on page 7-10 for more information.

Adding Physical Meters

You can also add new physical meters.

How to add physical meters:

1. Click **Add** on the Physical Meter search or list screens. A blank Physical Meter screen opens.
2. Enter the serial number for the meter in the **Serial Number** field.
3. Select the manufacturer of the meter in the **Meter Manufacturer** field.
4. Select the physical meter type of the meter in the **Physical Meter Type** field.
5. Enter the model number for the meter in the **Model Number** field.
6. Enter optional notes about the meter in the **Notes** field.
7. To return to the search screen without adding a record, click **Search**.
8. To save the record, click **Save**. The new physical meter appears on the screen.
9. Add Meter Configuration records, Physical Meter Event History records, Installed Meter Read System History records, or Physical Meter Location History records for the meter. See **Meter Configuration** on page 7-4, **Physical Meter Event History** on page 7-5, **Installed**

Meter Read System History on page 7-6, and **Physical Meter Location History** on page 7-8 for more information about adding these records.

Physical Meter Location History

Records in the Physical Meter Location History table indicate where and when a specific physical meter is located at a given time.

Searching Physical Meter Location History Records

You can search for existing Physical Meter Location History records in the Oracle Utilities Data Repository.

How to search physical meter location history records:

1. Select **Meter Data Management->Assets->Physical Meter Location History**.

   The Physical Meter Location History screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the Physical Meter, Location, Arrival Time, Reference Number, Departure Time, Storage Location, Status, or Notes associated with the record.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Physical Meter Location History Records** on page 7-10 for more information about adding new record.

4. The search results appear on the Physical Meter Location History screen.

   The Physical Meter Location History screen displays the following information for each record:

   - Physical Meter
   - Location
   - Arrival Time
   - Reference Number
   - Departure Time
   - Storage Location
   - Status
   - Notes

   See **Viewing and Editing Physical Meter Location History Records** on page 7-10 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Location, click the Location column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Physical Meter Location History screen. See **Viewing and Editing Physical Meter Location History Records** on page 7-10 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.
9. To add a new record, click **Add**. See **Adding Physical Meter Location History Records** on page 7-10 for more information about adding new records.

Viewing and Editing Physical Meter Location History Records

Individual physical meter location history records are viewed on the Physical Meter Location History screen. This screen opens when you select a record from the Physical Meter Location History search results screen.

How to view and edit physical meter location history records:

1. Click on the **[...]** link for the record you wish to view. The selected record opens on the Physical Meter Location History screen.

   This screen displays the following information for the selected record:

   - **Physical Meter**: The physical meter associated with the record, from the Physical Meter table.
   - **Location**: The location of the physical meter for this record, from the Physical Meter Locations table.
   - **Arrival Time**: The date and time at which the physical meter arrived at the location specified in this record.
   - **Reference Number**: A reference number for the physical meter
   - **Departure Time**: The date and time at which the physical meter departed from the location specified in this record.
   - **Storage Location**: Where the physical meter is stored in the location specified in this record.
   - **Status**: The status of the physical meter, from the Physical Meter Statuses table.
   - **Notes**: Notes about the physical meter and its storage at the location specified in this record.
2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.
3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.
4. To perform a new search, click **Search**.
5. To open a list of records, click **List**.
6. To delete the current record, click **Delete**.

Adding Physical Meter Location History Records

You can also add new Physical Meter Location History records.

How to add physical meter location history records:

1. Click **Add** on the Physical Meter Location History search or list screens. A blank Physical Meter Location History screen opens.
2. Select the Physical Meter for the record in the **Physical Meter** field.
3. Select the location for the record in the **Location** field.
4. Enter the time at which the meter arrived at the location in the **Arrival Time** field.

5. Enter an optional reference number for the record in the **Reference Number** field.
6. Enter the time at which the meter departed from the location in the **Departure Time** field.
7. Enter information about where the physical meter is stored in the **Storage Location** field.
8. Select the status of the physical meter in the **Status** field.
9. Enter an optional note about the physical meter at this location in the **Notes** field.
10. To return to the search screen without adding a record, click **Search**.
11. To save the record, click **Save**. The new record appears on the screen.

Meter Read Systems

Records in the Meter Read Systems table represent systems used for collection of meter reads. Meter read systems are associated to meters via the Installed Meter Read System History table.

Searching Meter Read Systems

You can search for existing Meter Read Systems in the Oracle Utilities Data Repository.

How to search meter read systems:

1. Select **Meter Data Management->Assets->Meter Read Systems**.

   The Meter Read System screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, name of the Meter Read System, or Description associated with the meter read system.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Meter Read Systems** on page 7-13 for more information about adding new meter read systems.

4. The search results appear on the Meter Read System screen.

   The Meter Read System screen displays the following information for each meter read system:

   - UID
   - Meter Read System
   - Description

   See **Viewing and Editing Meter Read Systems** on page 7-13 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Description, click the Description column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Meter Read System screen. See **Viewing and Editing Meter Read Systems** on page 7-13 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Meter Read Systems** on page 7-13 for more information about adding new meter read systems.

Viewing and Editing Meter Read Systems

Individual meter read systems are viewed on the Meter Read System screen. This screen opens when you select a record from the Meter Read System search results screen.

How to view and edit meter read systems:

1. Click on the **[...]** link for the read system you wish to view. The selected record opens on the Meter Read System screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the meter read system.
   - **Meter Read System**: The name of the meter read system.
   - **Description**: A description of the meter read system.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Meter Read Systems

You can also add new meter read systems.

How to add meter read systems:

1. Click **Add** on the Meter Read System search or list screens. A blank Meter Read System screen opens.

2. Enter a name for the meter read system in the **Meter Read System** field.

3. Enter an optional description of the meter read system in the **Description** field.

4. To return to the search screen without adding a record, click **Search**.

5. To save the record, click **Save**. The new meter read system appears on the screen.

Meter Manufacturers

Records in the Meter Manufacturer table represent manufacturers of meters used with the Oracle Utilities Meter Data Management application.

Searching Meter Manufacturers

You can search for existing Meter Manufacturers in the Oracle Utilities Data Repository.

How to search meter manufacturers:

1. Select **Meter Data Management->Assets->Meter Manufacturers**.

   The Meter Manufacturer screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Meter Manufacturer name, or Description associated with the meter manufacturers.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Meter Manufacturers** on page 7-15 for more information about adding new meter manufacturers.

4. The search results appear on the Meter Manufacturer screen.

   The Meter Manufacturer screen displays the following information for each meter manufacturer:

   - UID
   - Meter Manufacturer
   - Description

   See **Viewing and Editing Meter Manufacturers** on page 7-15 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Description, click the Description column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Meter Manufacturer screen. See **Viewing and Editing Meter Manufacturers** on page 7-15 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Meter Manufacturers** on page 7-15 for more information about adding new meter manufacturers.

Viewing and Editing Meter Manufacturers

Individual meter manufacturers are viewed on the Meter Manufacturer screen. This screen opens when you select a record from the Meter Manufacturer search results screen.

How to view and edit meter manufacturers:

1. Click on the **[...]** link for the manufacturer you wish to view. The selected record opens on the Meter Manufacturer screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the meter manufacturer.
   - **Meter Manufacturer**: The name of the meter manufacturer.
   - **Description**: A description of the meter manufacturer.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Meter Manufacturers

You can also add new meter manufacturers.

How to add meter read manufacturers:

1. Click **Add** on the Meter Manufacturer search or list screens. A blank Meter Manufacturer screen opens.

2. Enter a name for the meter manufacturer in the **Meter Manufacturer** field.

3. Enter an optional description of the meter manufacturer in the **Description** field.

4. To return to the search screen without adding a record, click **Search**.

5. To save the record, click **Save**. The new meter manufacturer appears on the screen.

Setup

Data setup for Oracle Utilities Meter Data Management includes records that define types of meters and meter events, physical meter attributes and locations, as well as meter read cycle data, including:

- **Meter Exception Codes**
- **Meter Events**
- **Meter Event Types**
- **Physical Meter Statuses**
- **Physical Meter Locations**
- **Physical Meter Location Types**
- **Physical Meter Types**
- **Read Cycle Frequencies**
- **Read Cycles**
- **Read Cycle Dates**

Meter Exception Codes

Records in the MDM Exception Codes table represent specific exceptions that can occur during Oracle Utilities Meter Data Management processing such as validation and estimation.

Searching Meter Exception Codes

You can search for existing MDM Exception Codes in the Oracle Utilities Data Repository.

How to search MDM exception codes:

1. Select **Meter Data Management->Setup->Meter Exception Codes**.

   The MDM Exception Codes screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Meter Data Exception Code, Description, Exception Code, Exception Category, Work Queue Type, Work Queue, Priority Level, Assigned to User, Automatically Close flag, or Meter Event associated with the exception code.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Meter Exception Codes** on page 7-18 for more information about adding new meter exception codes.

4. The search results appear on the MDM Exception Codes screen.

   The MDM Exception Codes screen displays the following information for each code:

   - UID
   - Meter Data Exception Code
   - Description
   - Exception Type
   - Exception Category

- Work Queue Type
- Work Queue
- Priority Level
- Assigned to User
- Automatically Close
- Meter Event

See **Viewing and Editing Meter Exception Codes** on page 7-17 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Description, click the Description column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.
6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the MDM Exception Code screen. See **Viewing and Editing Meter Exception Codes** on page 7-17 for more information.
7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.
8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.
9. To add a new record, click **Add**. See **Adding Meter Exception Codes** on page 7-18 for more information about adding new meter exception codes.

Viewing and Editing Meter Exception Codes

Individual meter exception codes are viewed on the MDM Exception Codes screen. This screen opens when you select a record from the MDM Exception Codes search results screen.

How to view and edit MDM exception codes:

1. Click on the **[...]** link for the exception code you wish to view. The selected record opens on the MDM Exception Codes screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the exception code.
   - **Meter Data Exception Code**: The meter exception code.
   - **Description**: A description of the exception code.
   - **Exception Type**: The exception type associated with the exception, from the MDM Exception Types table.
   - **Exception Category**: The exception category associated with the exception, from the MDM Exception Categories table.
   - **Work Queue Type**: The Work Queue Type for Work Queue items created when an exception of this type is triggered, from the Work Queue Type table. This overrides the default Work Queue Type defined in the MDM.CFG.XML configuration file.
   - **Work Queue**: The Work Queue for Work Queue items created when an exception of this type is triggered, from the Work Queue table. This overrides the default Work Queue defined in the MDM.CFG.XML configuration file.
   - **Priority Level**: The priority level assigned to Work Queue items created when an exception of this type is triggered. This overrides the default Priority Level defined in the MDM.CFG.XML configuration file.

- **Assigned to User**: The user ID of the user to whom Work Queue items created when an exception of this type is triggered are assigned. This overrides the default Assigned to User defined in the MDM.CFG.XML configuration file.
- **Automatically Close**: A flag that designates (Yes or No) whether or not Work Queue items created when an exception of this type is triggered are automatically closed when the exception has been resolved.
- **Meter Event**: The Meter Event (from the Meter Events table) associated with the exception code.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.
3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.
4. To perform a new search, click **Search**.
5. To open a list of records, click **List**.
6. To delete the current record, click **Delete**.

Adding Meter Exception Codes

You can also add new meter exception codes.

How to add MDM exception codes:

1. Click **Add** on the MDM Exception Codes search or list screens. A blank MDM Exception Codes screen opens.
2. Enter an exception code in the **Meter Data Exception Code** field.
3. Enter an optional description of the exception code in the **Description** field.
4. Select the exception type for the exception code in the **Exception Type** field.
5. Select the exception category for the exception code in the **Exception Category** field.
6. Select the Work Queue Type for the exception code in the **Work Queue Type** field.
7. Select the Work Queue for the exception code in the **Work Queue** field.
8. Enter the Priority Level for the exception code in the **Priority Level** field.
9. Enter the user ID to whom work queue items based on the exception code are assigned in the **Assigned to User** field.
10. Specify whether or not work queue items triggered by the exception code should be automatically closed (Yes or No) in the **Automatically Close** field.
11. Select the Meter Event for the exception code in the **Meter Event** field.
12. To return to the search screen without adding a record, click **Search**.
13. To save the record, click **Save**. The new exception code appears on the screen.

Meter Events

Records in the Meter Events table represent specific meter-related events.

Searching Meter Events

You can search for existing Meter Events in the Oracle Utilities Data Repository.

How to search meter events:

1. Select **Meter Data Management->Setup->Meter Events**.

   The Meter Event screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Meter Event, Meter Event Type, Meter Event Sub Type, or Description associated with the meter event.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Meter Events** on page 7-20 for more information about adding new meter events.

4. The search results appear on the Meter Event screen.

   The Meter Event screen displays the following information for each meter event:

   - UID
   - Meter Event
   - Meter Event Type
   - Meter Event Sub Type
   - Description

   See **Viewing and Editing Meter Events** on page 7-20 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Description, click the Description column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Meter Event screen. See **Viewing and Editing Meter Events** on page 7-20 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Meter Events** on page 7-20 for more information about adding new meter events.

Viewing and Editing Meter Events

Individual meter events are viewed on the Meter Event screen. This screen opens when you select a record from the Meter Event search results screen.

How to view and edit meter events:

1. Click on the **[...]** link for the event you wish to view. The selected record opens on the Meter Event screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the meter event.
   - **Meter Event**: The name of the meter event.
   - **Meter Event Type**: The meter event type associated with the meter event, from the Meter Event Types table.
   - **Meter Event Sub Type**: A secondary meter event type associated with the meter event, from the Meter Event Types table.
   - **Description**: A description of the meter event.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Meter Events

You can also add new meter events.

How to add meter events:

1. Click **Add** on the Meter Event search or list screens. A blank Meter Event screen opens.

2. Enter a name for the meter event in the **Meter Event** field.

3. Select the meter event type for the meter event in the **Meter Event Type** field.

4. Select a secondary meter event type for the meter event in the **Meter Event Sub Type** field.

5. Enter an optional description of the meter event in the **Description** field.

6. To return to the search screen without adding a record, click **Search**.

7. To save the record, click **Save**. The new meter event appears on the screen.

Meter Event Types

Records in the Meter Event Types table represent specific types of meter-related events.

Searching Meter Event Types

You can search for existing Meter Event Types in the Oracle Utilities Data Repository.

How to search meter event types:

1. Select **Meter Data Management->Setup->Meter Event Types**.

   The Meter Event Type screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Event Type Code, or Description associated with the meter event type.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Meter Event Types** on page 7-22 for more information about adding new meter event types.

4. The search results appear on the Meter Event Type screen.

   The Meter Event Type screen displays the following information for each meter event:

   - UID
   - Event Type Code
   - Description

   See **Viewing and Editing Meter Event Types** on page 7-22 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Description, click the Description column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Meter Event Type screen. See **Viewing and Editing Meter Event Types** on page 7-22 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Meter Event Types** on page 7-22 for more information about adding new meter event types.

Viewing and Editing Meter Event Types

Individual meter event types are viewed on the Meter Event Type screen. This screen opens when you select a record from the Meter Event Type search results screen.

How to view and edit meter event types:

1. Click on the **[...]** link for the event type you wish to view. The selected record opens on the Meter Event Type screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the meter event type.
   - **Event Type Code**: A code for the event type.
   - **Description**: A description of the meter event type.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Meter Event Types

You can also add new meter event types.

How to add meter event types:

1. Click **Add** on the Meter Event Type search or list screens. A blank Meter Event Type screen opens.

2. Enter a code for the meter event type in the **Event Type Code** field.

3. Enter an optional description of the meter event type in the **Description** field.

4. To return to the search screen without adding a record, click **Search**.

5. To save the record, click **Save**. The new meter event type appears on the screen.

Physical Meter Statuses

Records in the Physical Meter Statuses table represent various statuses for physical meters, such New, Repaired, Refurbished, etc.

Searching Physical Meter Statuses

You can search for existing Physical Meter Statuses in the Oracle Utilities Data Repository.

How to search physical meter statuses:

1. Select **Meter Data Management->Setup->Physical Meter Statuses**.

   The Physical Meter Status screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID or Status.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Physical Meter Statuses** on page 7-24 for more information about adding new physical meter statuses.

4. The search results appear on the Physical Meter Status screen.

   The Physical Meter Type screen displays the following information for each record:

   - UID
   - Status

   See **Viewing and Editing Physical Meter Statuses** on page 7-24 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Status, click the Status column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Physical Meter Status screen. See **Viewing and Editing Physical Meter Statuses** on page 7-24 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Physical Meter Statuses** on page 7-24 for more information about adding new physical meter statuses.

Viewing and Editing Physical Meter Statuses

Individual physical meter statuses are viewed on the Physical Meter Status screen. This screen opens when you select a record from the Physical Meter Status search results screen.

How to view and edit physical meter statuses:

1. Click on the **[...]** link for the meter status you wish to view. The selected record opens on the Physical Meter Status screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the physical meter status.
   - **Status**: The name of the physical meter status.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Physical Meter Statuses

You can also add new physical meter statuses.

How to add physical meter statuses:

1. Click **Add** on the Physical Meter Status search or list screens. A blank Physical Meter Status screen opens.

2. Enter the name for the physical meter status in the **Status** field.

3. To return to the search screen without adding a record, click **Search**.

4. To save the record, click **Save**. The new physical meter status appears on the screen.

Physical Meter Locations

Records in the Physical Meter Location table represent specific locations where physical meters might be stored or located, such as a warehouse, a repair shop, etc.

Searching Physical Meter Locations

You can search for existing Physical Meter Locations in the Oracle Utilities Data Repository.

How to search physical meter locations:

1. Select **Meter Data Management->Setup->Physical Meter Locations**.

   The Physical Meter Location screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Name, Description, Location Type, or Address associated with the location.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Physical Meter Locations** on page 7-26 for more information about adding new physical meter locations.

4. The search results appear on the Physical Meter Location screen.

   The Physical Meter Location screen displays the following information for each location:

   - UID
   - Name
   - Description
   - Location Type
   - Address

   See **Viewing and Editing Physical Meter Locations** on page 7-26 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Description, click the Description column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Physical Meter Location screen. See **Viewing and Editing Physical Meter Locations** on page 7-26 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Physical Meter Locations** on page 7-26 for more information about adding new physical meter locations.

Viewing and Editing Physical Meter Locations

Individual physical meter locations are viewed on the Physical Meter Location screen. This screen opens when you select a record from the Physical Meter Location search results screen.

How to view and edit physical meter locations:

1. Click on the **[...]** link for the meter location you wish to view. The selected record opens on the Physical Meter Location screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the physical meter location
   - **Name**: The name of the physical meter location
   - **Description**: A description of the location
   - **Location Type**: The type of location, from the Physical Meter Location Type table
   - **Address**: The address of the location, from the LS Addresses table

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Physical Meter Locations

You can also add new physical meter locations.

How to add physical meter locations:

1. Click **Add** on the Physical Meter Location search or list screens. A blank Physical Meter Location screen opens.

2. Enter the name for the physical meter location in the **Location** field.

3. Enter a description of the location in the **Description** field.

4. Select the location type of the location in the **Location Type** field.

5. Select the address of the location in the **Address** field.

6. To return to the search screen without adding a record, click **Search**.

7. To save the record, click **Save**. The new physical meter location appears on the screen.

Physical Meter Location Types

Records in the Physical Meter Location Type table represent various types of locations where physical meters are located, such as warehouses, stores, or repair shops.

Searching Physical Meter Location Types

You can search for existing Physical Meter Location Types in the Oracle Utilities Data Repository.

How to search physical meter location types:

1. Select **Meter Data Management->Setup->Physical Meter Location Types**.

   The Physical Meter Location Type screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID or Location Type.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Physical Meter Location Types** on page 7-28 for more information about adding new physical meter location types.

4. The search results appear on the Physical Meter Location Type screen.

   The Physical Meter Location Type screen displays the following information for each meter event:

   - UID
   - Location Type

   See **Viewing and Editing Physical Meter Location Types** on page 7-28 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Location Type, click the Location Type column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Physical Meter Location Type screen. See **Viewing and Editing Physical Meter Location Types** on page 7-28 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Physical Meter Location Types** on page 7-28 for more information about adding new physical meter location types.

Viewing and Editing Physical Meter Location Types

Individual physical meter location types are viewed on the Physical Meter Location Type screen. This screen opens when you select a record from the Physical Meter Location Type search results screen.

How to view and edit physical meter location types:

1. Click on the **[...]** link for the meter location type you wish to view. The selected record opens on the Physical Meter Location Type screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the physical meter location type
   - **Location**: The name of the location type

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Physical Meter Location Types

You can also add new physical meter location types.

How to add physical meter location types:

1. Click **Add** on the Physical Meter Location Type search or list screens. A blank Physical Meter Location Type screen opens.

2. Enter the name for the location type in the **Location Type** field.

3. To return to the search screen without adding a record, click **Search**.

4. To save the record, click **Save**. The new physical meter location type appears on the screen.

Physical Meter Types

Records in the Physical Meter Type table represent specific types of physical meters.

Searching Physical Meter Types

You can search for existing Physical Meter Types in the Oracle Utilities Data Repository.

How to search physical meter types:

1. Select **Meter Data Management->Setup->Physical Meter Types**.

   The Physical Meter Type screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Physical Meter Type, or Description associated with the meter type.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Physical Meter Types** on page 7-30 for more information about adding new physical meter types.

4. The search results appear on the Physical Meter Type screen.

   The Physical Meter Type screen displays the following information for each meter event:

   - UID
   - Physical Meter Type
   - Description

   See **Viewing and Editing Physical Meter Types** on page 7-30 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Description, click the Description column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Physical Meter Type screen. See **Viewing and Editing Physical Meter Types** on page 7-30 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Meter Event Types** on page 7-22 for more information about adding new physical meter types.

Viewing and Editing Physical Meter Types

Individual physical meter types are viewed on the Physical Meter Type screen. This screen opens when you select a record from the Physical Meter Type search results screen.

How to view and edit physical meter types:

1. Click on the **[...]** link for the meter type you wish to view. The selected record opens on the Physical Meter Type screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique id for the physical meter type.
   - **Physical Meter Type**: The name of the physical meter type.
   - **Description**: A description of the meter type.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Physical Meter Types

You can also add new physical meter types.

How to add physical meter types:

1. Click **Add** on the Physical Meter Type search or list screens. A blank Physical Meter Type screen opens.

2. Enter a name for the physical meter type in the **Physical Meter Type** field.

3. Enter an optional description of the meter type in the **Description** field.

4. To return to the search screen without adding a record, click **Search**.

5. To save the record, click **Save**. The new physical meter type appears on the screen.

Read Cycle Frequencies

Records in the Read Cycle Frequencies table represent the frequencies (weekly, monthly, etc.) at which meters within a given read cycle are read.

Searching Read Cycle Frequencies

You can search for existing Read Cycle Frequencies in the Oracle Utilities Data Repository.

How to search read cycle frequencies:

1. Select **Meter Data Management->Setup->Read Cycle Frequencies**.

   The Read Cycle Frequency screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the Frequency Code or Description associated with the read cycle frequency.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Read Cycle Frequencies** on page 7-32 for more information about adding new read cycle frequencies.

4. The search results appear on the Read Cycle Frequency screen.

   The Read Cycle Frequency screen displays the following information for each read cycle frequency:

   - Frequency Code
   - Description

   See **Viewing and Editing Read Cycle Frequencies** on page 7-32 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Description, click the Description column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Read Cycle Frequency screen. See **Viewing and Editing Read Cycle Frequencies** on page 7-32 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Read Cycle Frequencies** on page 7-32 for more information about adding new read cycle frequencies.

Viewing and Editing Read Cycle Frequencies

Individual read cycle frequencies are viewed on the Read Cycle Frequency screen. This screen opens when you select a record from the Read Cycle Frequency search results screen.

How to view and edit read cycle frequencies:

1. Click on the **[...]** link for the read cycle frequency you wish to view. The selected record opens on the Read Cycle Frequency screen.

   This screen displays the following information for the selected record:

   - **Frequency Code**: A code for the read cycle frequency.
   - **Description**: A description of the read cycle frequency.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Read Cycle Frequencies

You can also add new read cycle frequencies.

How to add read cycle frequencies:

1. Click **Add** on the Read Cycle Frequency search or list screens. A blank Read Cycle Frequency screen opens.

2. Enter a code for the read cycle frequency in the **Read Cycle Frequency** field.

3. Enter an optional description of the read cycle frequency in the **Description** field.

4. To return to the search screen without adding a record, click **Search**.

5. To save the record, click **Save**. The new read cycle frequency appears on the screen.

Read Cycles

Records in the Read Cycle table represent meter read cycles. Meter read cycles determine when specific meters are read.

Searching Read Cycles

You can search for existing Read Cycles in the Oracle Utilities Data Repository.

How to search read cycles:

1. Select **Meter Data Management->Setup->Read Cycles**.

   The Read Cycle screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the Read Cycle Name, Description, Frequency Code, Start Time, or Stop Time associated with the read cycle.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Read Cycles** on page 7-34 for more information about adding new read cycles.

4. The search results appear on the Read Cycle screen.

   The Read Cycle screen displays the following information for each read cycle:

   - UID
   - Read Cycle Name
   - Description
   - Frequency Code
   - Start Time
   - Stop Time

   See **Viewing and Editing Read Cycles** on page 7-34 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Description, click the Description column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Read Cycle screen. See **Viewing and Editing Read Cycles** on page 7-34 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Read Cycles** on page 7-34 for more information about adding new read cycles.

Viewing and Editing Read Cycles

Individual read cycles are viewed on the Read Cycle screen. This screen opens when you select a record from the Read Cycle search results screen.

How to view and edit read cycles:

1. Click on the **[...]** link for the read cycle you wish to view. The selected record opens on the Read Cycle screen.

   This screen displays the following information for the selected record:

   - **Read Cycle Name**: The name of the read cycle.
   - **Description**: A description of the read cycle.
   - **Frequency Code**: The Read Cycle Frequency code associated with the read cycle, from the Read Cycle Frequency table.
   - **Start Time**: The start time of the read cycle. This is the date and time after which the read cycle is in effect.
   - **Stop Time**: The stop time of the read cycle. This is the date and time before which the read cycle is in effect.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Read Cycles

You can also add new read cycles.

How to add read cycles:

1. Click **Add** on the Read Cycle search or list screens. A blank Read Cycle screen opens.

2. Enter a name for the read cycle in the **Read Cycle Name** field.

3. Enter an optional description of the read cycle in the **Description** field.

4. Select the read cycle frequency code for the read cycle in the **Frequency Code** field.

5. Enter the start time and stop time of the read cycle in the **Start Time** and **Stop Time** fields.

6. To return to the search screen without adding a record, click **Search**.

7. To save the record, click **Save**. The new read cycle appears on the screen.

Read Cycle Dates

Records in the Read Cycle Date table specify the date on which meters associated with a meter read cycle are read.

Searching Read Cycle Dates

You can search for existing Read Cycle Dates in the Oracle Utilities Data Repository.

How to search read cycle dates:

1. Select **Meter Data Management->Setup->Read Cycle Dates**.

   The Read Cycle Date screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Read Cycle, or Read Date associated with the read cycle date.

   See **Searching Database Tables** on page 8-7 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about searching records, including the use of operands and wildcards.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**. To add a new record, click **Add**. See **Adding Read Cycle Dates** on page 7-36 for more information about adding new read cycle dates.

4. The search results appear on the Read Cycle Date screen.

   The Read Cycle Date screen displays the following information for each read cycle:

   - UID
   - Read Cycle
   - Read Date

   See **Viewing and Editing Read Cycle Dates** on page 7-36 for more information about viewing individual records.

5. To sort the results by one of the columns, click the appropriate column heading. For example, to sort the results by Read Date, click the Read Date column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Read Cycle Date screen. See **Viewing and Editing Read Cycle Dates** on page 7-36 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

9. To add a new record, click **Add**. See **Adding Read Cycle Dates** on page 7-36 for more information about adding new read cycle dates.

Viewing and Editing Read Cycle Dates

Individual read cycle date records are viewed on the Read Cycle Date screen. This screen opens when you select a record from the Read Cycle Date search results screen.

How to view and edit read cycle dates:

1. Click on the **[...]** link for the read cycle date record you wish to view. The selected record opens on the Read Cycle Dates screen.

   This screen displays the following information for the selected record:

   - **UID**: A unique ID for the read cycle date record.
   - **Read Cycle**: The read cycle to which the read cycle date applies.
   - **Read Date**: The date on which meters associated with read cycle are read.

2. Edit data in the fields as appropriate. See **Working with Data Types** on page 8-4 in the *Oracle Utilities Energy Information Platform User's Guide* for more information about editing data values.

3. To save changes made to the record, click **Save**. To save the edited record as a new record, click **Save As New**.

   Note: The **Save As New** option only works if the identity of the record has been changed.

4. To perform a new search, click **Search**.

5. To open a list of records, click **List**.

6. To delete the current record, click **Delete**.

Adding Read Cycle Dates

You can also add new read cycle dates.

How to add read cycle dates:

1. Click **Add** on the Read Cycle Date search or list screens. A blank Read Cycle Date screen opens.

2. Select the read cycle for the read cycle date record in the **Read Cycle** field.

3. Enter the read date for the read cycle in the **Read Date** field.

4. To return to the search screen without adding a record, click **Search**.

5. To save the record, click **Save**. The new read cycle date record appears on the screen.

Chapter 8

Billing Determinant Calculations

This chapter describes how users initiate billing determinant calculations and view results of calculations, including:

- **Initiating Billing Determinant Calculations**
- **Searching and Viewing Billing Determinant Calculation Requests**
- **Searching and Viewing Billing Determinant Results and Values**
- **Viewing Scheduled Billing Determinant Calculation Jobs**

Initiating Billing Determinant Calculations

Oracle Utilities Meter Data Management includes user interface screens for initiation of billing determinant generation for selected accounts.

> **Note**: This feature requires that the BD_SELECTOR_TRIGGER Adapter service be properly configured. See **Configuring Adapter Services** on page 6-20 in the *Oracle Utilities Meter Data Management Installation and Configuration Guide* for more information about configuring this service.

How to initiate billing determinant calculations:

1. Select **Meter Data Management->Billing Determinants->Initiation**.

   The Initiate Billing Determinant Generation screen opens.

2. Select the account or accounts for which you wish to generate billing determinants

   Account: Select **ID**, **List**, or **All** from the drop-down list. This indicates how you specify the accounts for billing determinant generation.

   - **ID**: Type the ID of the account in the text box, or click the **Browse** button (...) and click the **[...]** link to select the appropriate account.

     Note: You can only select accounts that you have been granted access.

   - **List:** Select the list of accounts from the drop-down list.

   - **All**: When this option is selected, Oracle Utilities Meter Data Management generates billing determinants for all accounts whose scheduled billing date matches the date specified in the **Read Date** field.

3. Enter the **Read Date** for the billing determinant calculation. This date is compared to the eligibility window dates for the selected accounts.

   You can change the Read Date either by typing the date manually, or by clicking the drop-down arrow to the right of the date field. This opens a calendar dialog that you can use to select the Read Date.

4. Select the appropriate **Queue Type** to use for the billing determinant calculation from the drop-down list.

5. Click the **Run** link to run the billing determinant calculation.

   The Processing Request screen opens, displaying the status of the calculation.

6. Click **Schedule** to schedule the calculation to run at a later date or time. See **Scheduling Reports** on page 2-10 for more information about scheduling.

   Note: When scheduling bill determinant calculations with recurrence, the Read Date is replaced with the Start Time specified on the Schedule Process screen.

   Scheduled calculations can be viewed using the Scheduled Jobs option on the Billing Determinants menu (see **Viewing Scheduled Billing Determinant Calculation Jobs** on page 8-11).

7. When the calculation is complete, the BD Requests screen opens displaying the billing determinant calculation at the top of the list of requests.

   To view details of the request, click the **[...]** link.

Searching and Viewing Billing Determinant Calculation Requests

Whenever billing determinants are calculated, a record is inserted into the BD Request table to record the process, and a record for each account is inserted into the BD Queues table to record the calculation process for that account. The **Requests** option on the Billing Determinants menu allows users to search for and view billing determinant calculation requests.

How to search billing determinant calculation requests:

1. Select **Meter Data Management->Billing Determinants->Requests**.

   The **BD Request** screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the BD Request ID, Description, Date Received, Requested User, or Time Stamp.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**.

4. The search results appear on the **BD Request** screen.

   The BD Request screen displays the following information for each request record:

   - BD Request ID
   - Description
   - Date Received
   - Requested User
   - Time Stamp

5. To sort the results by one of the columns, click the appropriate arrow on the column heading. For example, to sort the results in ascending order by BD Request ID, click the BD Request ID column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the BD Request screen. See **Viewing Billing Determinant Calculation Requests** on page 8-3 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

Viewing Billing Determinant Calculation Requests

Individual billing determinant calculation requests are viewed on the BD Request screen. This screen opens when you select a record from the BD Request search results screen.

How to view billing determinant requests:

1. Click on the **[...]** link for the request you wish to view. The selected record opens on the BD Request screen.

   This screen displays the following information for the selected record:

   - **BD Request ID**: The ID of the request record
   - **Description**: A concatenated string comprising the accounts specified for the request (account UID for a single account, list name of account list, or "All"), the Read Date of

the submitted request, and the user ID of the user who initiated the request, separated by commas

- **Date Received**: The date and time on which the request was received
- **Requested User**: The user ID of the user who initiated the request
- **Time Stamp**: The date on which the request was processed

2. To perform a new search for BD Requests, click **Search**.
3. To delete the current record, click **Delete**.
4. To view active BD Queue records associated with the request, click **BD Queues** in the Children section. The BD Queue records for the selected request appear on the BD Queue screen. See **Viewing Billing Determinant Queue Records** on page 8-4 for more information about viewing BD Queue records.
5. To view archived BD Queue records associated with the request, click **BD Queues Archives** in the Children section. The BD Queue Archive records for the selected request appear on the BD Queue Archive screen. See **Viewing Billing Determinant Queue Records** on page 8-4 for more information about viewing BD Queue Archive records

Viewing Billing Determinant Queue Records

Billing Determinant Queue (BD Queue) records are created for each account submitted as part of a billing determinant calculation request. Active BD Queue records represent billing determinant calculations (one for each account) that are currently being processed, and are stored in the BD Queue table. Archive BD Queue records represent billing determinant calculations that have been executed, and are stored in the BD Queue Archive table. You view these individual records on the BD Queue (for active queue records) or BD Queue Archive (for archived queue records) screen.

How to view BD queue records:

1. Click on either the **BD Queues** or **BD Queues Archives** link in the Children section of the BD Request screen (see **Viewing Billing Determinant Calculation Requests** on page 8-3).

   A list of BD Queue records for the currently selected BD Request record appears on the BD Queue (or BD Queue Archive) screen.

   The BD Queue (or BD Queue Archive) screen displays the following information for each request record:

   - ID
   - Account
   - Read Date
   - BD Request ID
   - BD Status Code
   - BD Queue Type
   - Handler
   - Received Date
   - Business Status Code
   - Business Message
   - Completed Date
   - Time Stamp

2. To view a specific queue record, click on the **[...]** link for the queue record you wish to view. The selected record opens on the BD Queue (or BD Queue Archive) screen.

This screen displays the following information for the selected record:

- **ID**: ID of the queue record
- **Account**: The account ID associated with the queue record
- **Read Date**: The read date associated with the queue record
- **BD Queue Request**: The ID of the parent BD Request record
- **BD Status Code**: The status code of the queue record (Completed, Error, New, or Processing)
- **BD Queue Type**: The queue type associated with the queue record (from the BD Queue Types table)
- **Handler**: The server, port, and service on which the queue record was processed
- **Received Date**: The date on which the request was received
- **Business Status Code**: The business status code (if any) associated with the queue record (from the Business Statuses table).
- **Business Message**: The business message associated with the queue record
- **Completed Date**: The date on which the billing determinant calculations were completed.
- **Time Stamp**: The date on which the queue record was processed.

3. To perform a search for BD Queue (or BD Queue Archive) records, click **Search**.
4. To delete the current record, click **Delete**.

Searching and Viewing Billing Determinant Results and Values

The billing periods for which billing determinants are calculated for each account are defined in the Bill History table. Billing determinant calculation results are stored in the Bill History Value table (account-level billing determinants), the Service Point Bill Determinant Values table (service point-level billing determinants), and the Meter Bill Determinant Values (meter-level billing determinants) table. The **Results and Values** option on the Billing Determinants menu allows users to search for and view billing determinant calculation results.

How to search billing period records:

1. Select **Meter Data Management->Billing Determinants->Results and Values**.

   The **Bill History** screen opens.

2. Enter the search criteria in the appropriate field.

   You can search based on the UID, Account ID, Start Time, Stop Time, Bill Month, Bill Time, Read Date, User Specified Stop, KWH, Bill Code, Profile Status, Rebill Reason Code, User ID, or Timestamp.

3. Click **Search** to perform the search. To reset the search fields to their previous values, click **Reset**. To clear all the search fields, click **Clear**.

4. The search results appear on the **Bill History** screen.

   The Bill History screen displays the following information for each request record:

   - UID
   - Account ID
   - Start Time
   - Stop Time
   - Bill Month
   - Bill Time
   - Read Date
   - User Specified Stop
   - KWH
   - Bill Code
   - Profile Status
   - Rebill Reason Code

5. To sort the results by one of the columns, click the appropriate arrow on the column heading. For example, to sort the results in ascending order by Account, click the Account column heading. If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

6. To view a record, click on the corresponding **[...]** link. The selected record will appear in the Bill History screen. See **Viewing Bill History Records** on page 8-7 for more information.

7. To perform another search, click **Search**. To refresh the contents of the list screen, click the refresh icon.

8. To delete one or more records, check the check boxes corresponding to the records to be deleted, and click **Delete**. To clear all the checkboxes, click **Clear**.

Viewing Bill History Records

Individual billing determinant calculation periods are viewed on the Bill History screen. This screen opens when you select a record from the Bill History search results screen.

How to view billing period records:

1. Click on the **[...]** link for the record you wish to view. The selected record opens on the Bill History screen.

   This screen displays the following information for the selected record:

   - **UID**: The UID for the Bill History record
   - **Account ID**: The account ID associated with the Bill History record
   - **Start Time**: The start time of the billing period defined by the Bill History record
   - **Stop Time**: The stop time of the billing period defined by the Bill History record
   - **Bill Month**: The billing month of the billing period defined by the Bill History record
   - **Bill Time**: The bill time of the billing period defined by the Bill History record
   - **Read Date**: The Read Date of the billing period defined by the Bill History record
   - **User Specified Stop**: A flag that specified if the billing period defined by the Bill History record uses a user-specified stop time
   - **KWH**: KWH recorded for the account for the billing period defined by the Bill History record
   - **Bill Code**: The bill code (if any) associated with the billing period defined by the Bill History record (from the Bill Codes table)
   - **Profile Status**: The profile status (if any) associated with the billing period defined by the Bill History record
   - **Rebill Reason Code**: The rebill reason code associated with the billing period defined by the Bill History record

2. To perform a new search for Bill History records, click **Search**.
3. To delete the current record, click **Delete**.
4. To view account-level billing determinant results associated with the Bill History record, click **Bill History Values** in the Children section. The Bill History Value records for the selected Bill History record appear on the Bill History Value screen. See **Viewing Billing Determinant Results** on page 8-8 for more information about viewing billing determinant results.
5. To view meter-level billing determinant results associated with the Bill History record, click **Meter Bill Determinant Values** in the Children section. The Meter Bill Determinant Value records for the selected Bill History record appear on the Bill History Value screen. See **Viewing Billing Determinant Results** on page 8-8 for more information about viewing billing determinant results.
6. To view service point-level billing determinant results associated with the Bill History record, click **Service Point Bill Determinant Values** in the Children section. The Service Point Bill Determinant Value records for the selected Bill History record appear on the Bill History Value screen. See **Viewing Billing Determinant Results** on page 8-8 for more information about viewing billing determinant results.

Viewing Billing Determinant Results

Billing determinant results records are created for each billing determinant calculated for each account submitted as part of a billing determinant calculation request. Account-level billing determinants are stored in the Bill History Value table. Meter-level billing determinants are stored in the Meter Bill Determinant Values table. Service point-level billing determinants are stored in the Service Point Bill Determinant Values table.

How to view account-level billing determinant results:

1. Click on the **Bill History Values** link in the Children section of the Bill History screen (see **Viewing Bill History Records** on page 8-7).

   A list of account-level billing determinant records for the currently selected Bill History record appears on the Bill History Value screen.

   This screen displays the following information for each results record:

   - Bill History
   - Bill Determinant
   - Value
   - Reported?
   - Report Date

2. To view a specific results record, click on the **[...]** link for the record you wish to view. The selected record opens on the Bill History Value screen.

   This screen displays the following information for the selected record:

   - **Bill History**: Identity of the parent Bill History record (Account ID and Start Time, from the Bill History table)
   - **Bill Determinant**: The billing determinant calculated (from the Billing Determinants table)
   - **Value**: The calculated value for the billing determinant
   - **Reported?**: A flag that indicates (Yes or No) if the billing determinant result has been reported or sent to a down-stream billing system
   - **Report Date**: The date on which the billing determinant result was reported or sent to a down-stream billing system

3. To perform a search for Bill History Value records, click **Search**.

4. To delete the current record, click **Delete**.

How to view meter-level billing determinant results:

1. Click on the **Meter Bill Determinant Values** link in the Children section of the Bill History screen (see **Viewing Bill History Records** on page 8-7).

   A list of meter-level billing determinant records for the currently selected Bill History record appears on the Meter Bill Determinant Value screen.

   This screen displays the following information for each results record:

   - UID
   - Meter Data Channel
   - Bill History
   - Bill Determinant
   - Value

- Reported?
- Report Date

2. To view a specific results record, click on the **[...]** link for the record you wish to view. The selected record opens on the Meter Bill Determinant Value screen.

   This screen displays the following information for the selected record:

   - **UID**: UID for the record
   - **Meter Data Channel**: Meter data channel for which the billing determinant value was calculated (from the Meter Data Channel table)
   - **Bill History**: Identity of the parent Bill History record (Account ID and Start Time, from the Bill History table)
   - **Bill Determinant**: The billing determinant calculated (from the Billing Determinants table)
   - **Value**: The calculated value for the billing determinant
   - **Reported?**: A flag that indicates (Yes or No) if the billing determinant result has been reported or sent to a down-stream billing system
   - **Report Date**: The date on which the billing determinant result was reported or sent to a down-stream billing system

3. To perform a search for Meter Bill Determinant Value records, click **Search**.
4. To delete the current record, click **Delete**.

How to view service point-level billing determinant results:

1. Click on the **Service Point Bill Determinant Values** link in the Children section of the Bill History screen (see **Viewing Bill History Records** on page 8-7).

   A list of service point-level billing determinant records for the currently selected Bill History record appears on the Service Point Bill Determinant Value screen.

   This screen displays the following information for each results record:

   - UID
   - Service Point
   - Bill History
   - Bill Determinant
   - Value
   - Reported?
   - Report Date

2. To view a specific results record, click on the **[...]** link for the record you wish to view. The selected record opens on the Service Point Bill Determinant Value screen.

   This screen displays the following information for the selected record:

   - **UID**: UID for the record
   - **Service Point**: The service point for which the billing determinant value was calculated (from the Service Point table)
   - **Bill History**: Identity of the parent Bill History record (Account ID and Start Time, from the Bill History table)
   - **Bill Determinant**: The billing determinant calculated (from the Billing Determinants table)

- **Value**: The calculated value for the billing determinant
- **Reported?**: A flag that indicates (Yes or No) if the billing determinant result has been reported or sent to a down-stream billing system
- **Report Date**: The date on which the billing determinant result was reported or sent to a down-stream billing system

3. To perform a search for Service Point Bill Determinant Value records, click **Search**.
4. To delete the current record, click **Delete**.

Viewing Scheduled Billing Determinant Calculation Jobs

You can schedule billing determinant calculation jobs from the Initiate Billing Determinant Generation screen. The **Scheduled Jobs** option on the Billing Determinants menu allows users to search for and view scheduled billing determinant calculation requests.

How to view scheduled billing determinant calculation requests:

1. Select **Meter Data Management->Billing Determinants->Scheduled Jobs**.

   The **Scheduled Jobs** screen opens.

   This screen displays the following information for each scheduled job:

   - **Request ID**: The ID of the scheduled job, in the following format:

     <ID/List/All>, <Read Date>, <User ID>

     where:

     - **<ID/List/All>** is the Account ID of the account for the scheduled job. For jobs based on lists, this is the list name. For jobs based on all accounts, this is the word "All."
     - **<Read Date>** is the read date of the scheduled job.
     - **<User ID>** is the user ID of the user who created the scheduled job.
   - **Message ID**: The global unique ID (GUID of the scheduled job
   - **Message Time**: The date and time on which the job is scheduled to be run
   - **Message Type**: The type of scheduled job. All bill determinant generation scheduled jobs have a message type of ICE.
   - **Message Source**: The source of the scheduled job. All bill determinant generation scheduled jobs have a message source of MDM.

   If there is more than one page of results, you can move between pages using the ◀ and ▶ buttons. To change the number of results that appears on each page, enter the number in the **Rows** field.

2. To view details about a scheduled job, click the **[...]** icon. The **Schedule Process** screen opens displaying the scheduling details for the selected job. See **Scheduling Reports** on page 2-10 for more information about scheduling.

3. To delete one or more schedule jobs, select the checkboxes for the jobs to be deleted, and click **Delete**.

4. To open the Initiate Bill Determinants Generation screen, click **Initiate**. See **Initiating Billing Determinant Calculations** on page 8-2 for information about initiating bill determinant calculations.

Chapter 9

Oracle Utilities Meter Data Management Reports

This chapter describes the reports provided with Oracle Utilities Meter Data Management, including:

- **MDM Adapter Interface Status Report**
- **MDM Closed WQ Detail Report**
- **Meter Population Summary by Meter Read System Report**
- **Meter Population Summary by Read Cycle Report**
- **MDM Missing Reads Report**
- **MDM Physical Meter Events Report**
- **MDM Revenue Protection Usage Events Report**
- **MDM Usage Exceptions Report**
- **Process Control Summary Report**
- **Process Control Detail Report**

MDM Adapter Interface Status Report

The MDM Adapter Interface Status report displays the status of all incoming files processed by the Oracle Utilities Adapter.

Reported Data

The report displays the following:

- Report summary information, including:
  - Run Date/Time
  - Report Start Date
  - Report Stop Date
  - A pie graph depicting the percentage of Completed vs. Error files
- For each payload file listed on the report:
  - **Source**: The runtime service that processed the payload file
  - **Reference Number**: Reference number associated with the payload file
  - **Receive Date**: The date on which payload file was processed
  - **Status**: The status of the payload file (COMPLETED or ERROR)
  - **File Name**: The path and file name of the payload file
- For each status code for which files are listed on the report:
  - The name of the status code (COMPLETED or ERROR)
  - The number of files to which the status code applies
- A grand total of payload files processed by the Oracle Utilities Adapter.

Parameters

The MDM Adapter Interface Status report uses the following parameters:

- **Start Date**: The start time of the reporting period
- **End Date**: The stop time of the reporting period
- **Source**: The runtime service that processed the payload files to be included in the report
- **Reference Number**: Reference number associated with the payload files to be included in the report
- **File Name:** The path and file name of the payload files to be included in the report
- **Status**: The status of the payload files to be included in the report (from the Ice Statuses table). Can be COMPLETED or ERROR.

This report is run via the **Run Reports** option in the Meter Data Management menu.

MDM Closed WQ Detail Report

The MDM Closed WQ Detail report displays details for all Oracle Utilities Meter Data Management work queue items that have been closed.

Reported Data

The report displays the following:

- Report summary information, including:
  - Run Date/Time
  - Report Start Date
  - Report Stop Date
  - A graph depicting the percentage of Usage-related vs. Critical work queue items
- For each work queue item listed on the report:
  - **WQ ID**: The ID of the work queue item
  - **WQ Type**: The work queue type that corresponds to the work queue item
  - **Meter ID**: The meter ID of the meter associated with the work queue item (if applicable)
  - **Service Point**: The service point ID of the service point associated with the work queue item (if applicable)
  - **Item Note**: The Opened Note from the work queue item
  - **User**: The user ID of the user who resolved/closed the work queue item
  - **Date Resolved**: The date on which the work queue item was resolved/closed
- For each category (Usage/Critical) for which work queue items are listed on the report:
  - The name of the category (CRITICAL or USAGE)
  - The number of work queue items in that category
- A grand total of closed work queue items

Parameters

The MDM Closed WQ Detail report uses the following parameters:

- **Start Date**: The start time of the reporting period
- **End Date**: The stop time of the reporting period
- **Meter ID**: The meter ID of the meter associated with the work queue items to be included in the report (from the MDM Meters table)
- **Service Point**: The service point ID of the service point associated with the work queue items to be included in the report (from the Service Points table)
- **Work Queue Type**: The work queue type that corresponds to the work queue items to be included in the report (from the Work Queue Types table)

This report is run via the **Run Reports** option in the Meter Data Management menu.

Meter Population Summary by Meter Read System Report

The Meter Population Summary by Meter Read System report lists all the Oracle Utilities Meter Data Management Meters (logical meters) in the system, based on Meter Read System.

Reported Data

The report displays the following:

- Report summary information, including:
  - Run Date/Time
  - Effective Date/Time
  - A pie graph depicting the percentage of meters for each meter read system used by Oracle Utilities Meter Data Management
  - Summary of the meters in the system by meter read system
- For each meter listed on the report:
  - **Jurisdiction**: The jurisdiction related to the meter
  - **Meter ID**: The meter ID for the meter
  - **Serial Number**: The serial number of the physical meter related to the meter
  - **Meter Start**: The start date and time of the meter in the system (i.e. when the meter became active in the Oracle Utilities Meter Data Management system)
  - **Meter Stop Time**: The stop date and time of the meter in the system (i.e. when the meter ceased to be active in the Oracle Utilities Meter Data Management system)
  - **Meter Read System**: The name of the meter read system related to the meter
  - **Physical Meter Type**: The type of physical meter related to the meter
  - **Read System Name**: The name of the read cycle for the meter.

Parameters

The Meter Population Summary by Meter Read System report uses the following parameters:

- **Enter Jurisdiction**: The jurisdiction for the meters to be included in the report. To include meters from all jurisdictions, leave this parameter blank.
- **Enter Meter Read System**: The meter read system for the meters to be included in the report. To include meters for all meter read systems, leave this parameter blank.
- **Enter Physical Meter Type**: The physical meter type for the meters to be included in the report. To include meters for all physical meter types, leave this parameter blank.
- **Enter Effective Date**: The date on which the meters to be included in the report must be active. To include all meters regardless of effective date, leave this parameter blank.

This report is run via the **Run Reports** option in the Meter Data Management menu.

Meter Population Summary by Read Cycle Report

The Meter Population Summary by Read Cycle report lists all the Oracle Utilities Meter Data Management Meters (logical meters) in the system, based on Read Cycle.

Reported Data

The report displays the following:

- Report summary information, including:
  - Run Date/Time
  - Effective Date/Time
  - A pie graph depicting the percentage of meters for each read cycle used by Oracle Utilities Meter Data Management
  - Summary of the meters in the system by read cycle
- For each meter listed on the report:
  - **Jurisdiction**: The jurisdiction related to the meter
  - **Meter ID**: The meter ID for the meter
  - **Serial Number**: The serial number of the physical meter related to the meter
  - **Meter Start**: The start date and time of the meter in the system (i.e. when the meter became active in the Oracle Utilities Meter Data Management system)
  - **Meter Stop Time**: The stop date and time of the meter in the system (i.e. when the meter ceased to be active in the Oracle Utilities Meter Data Management system)
  - **Meter Read System**: The name of the meter read system related to the meter
  - **Physical Meter Type**: The type of physical meter related to the meter
  - **Read System Name**: The name of the read cycle for the meter.

Parameters

The Meter Population Summary by Read Cycle report uses the following parameters:

- **Enter Jurisdiction**: The jurisdiction for the meters to be included in the report. To include meters from all jurisdictions, leave this parameter blank.
- **Enter Read Cycle**: The read cycle for the meters to be included in the report. To include meters for all read cycles, leave this parameter blank.
- **Enter Physical Meter Type**: The physical meter type for the meters to be included in the report. To include meters for all physical meter types, leave this parameter blank.
- **Enter Effective Date**: The date on which the meters to be included in the report must be active. To include all meters regardless of effective date, leave this parameter blank.

This report is run via the **Run Reports** option in the Meter Data Management menu.

MDM Missing Reads Report

The MDM Missing Reads report displays information about all meters that have not been read per the read schedule.

Reported Data

The report displays the following:

- Report summary information, including:
  - Run Date/Time
  - Report Start Date
  - Report Stop Date
- For each day within the reporting period with missing meter reads:
  - **Planned Read Date**: The date on which meters are scheduled to be read
  - **Meter ID**: The meter ID of the meter scheduled to be read
  - **Channel ID**: The channel ID of the meter scheduled to be read
  - **UOM**: The unit-of-measure of the meter scheduled to be read
  - **Usage Type**: The usage type (Consumption, Interval or TOU) of the meter scheduled to be read
- For each planned read date reported:
  - The number of missing reads on that day
- A grand total of missing meter reads within the reporting period

Parameters

The MDM Missing Reads report uses the following parameters:

- **Start Date**: The start time of the reporting period
- **End Date**: The stop time of the reporting period
- **Enter Meter ID**: The meter ID of the meter for which reads are missing
- **Enter Channel ID**: The channel ID of the meter for which reads are missing
- **Enter Unit of Measure**: The unit-of-measure of the meter for which reads are missing
- **Enter Usage Type**: The usage type of the meter for which reads are missing

This report is run via the **Run Reports** option in the Meter Data Management menu.

MDM Physical Meter Events Report

The MDM Physical Meter Events report displays details for all physical meter events.

Reported Data

The report displays the following:

- Report summary information, including:
  - Run Date/Time
  - Report Start Date
  - Report Stop Date
  - A pie graph depicting the percentage of each type of event reported
- For each event listed on the report:
  - **Meter ID**: The meter ID that corresponds to the physical meter associated with the event
  - **Serial Number**: The serial number of the physical meter associated with the event
  - **Event**: The meter event
  - **Service Point ID**: The service point ID of the service point associated with the meter (if applicable)
  - **Event Type**: The type of meter event
  - **Log Date**: The date on which the event occurred
- For each event listed on the report:
  - The name of the event
  - The number of events
- A grand total of physical meter events

Parameters

The MDM Physical Meter Event report uses the following parameters:

- **Start Date**: The start time of the reporting period
- **End Date**: The stop time of the reporting period
- **Meter ID**: The meter ID of the meter associated with the events to be included in the report (from the MDM Meters table)
- **Serial Number**: The serial number of the meter associated with the events to be included in the report (from the Physical Meters table)
- **Meter Event**: The meter event associated with the events to be included in the report (from the Meter Events table)
- **Service Point**: The service point associated with the meter associated with the events to be included in the report (from the Service Points table)
- **Meter Event Type**: The type of meter event associated with the events to be included in the report (from the Meter Event Types table)

This report is run via the **Run Reports** option in the Meter Data Management menu.

MDM Revenue Protection Usage Events Report

The MDM Revenue Protection Usage Events report displays the statuses of all revenue protection events.

Reported Data

The report displays the following:

- Report summary information, including:
  - Run Date/Time
  - Report Start Date
  - Report Stop Date
  - A pie graph depicting the percentage of each type of the events reported
- For each event listed on the report:
  - **Service Point ID**: The service point ID of the service point associated with the meter associated with the event
  - **Meter ID**: The meter ID of the meter associated with the event
  - **Channel ID**: The channel ID of the meter associated with the event
  - **Event Code**: The event code
  - **Stop Read Time**: The stop read time on the meter reading which triggered the event
  - **Exception Time**: The date and time the event occurred
- For each event code listed on the report:
  - The name of the event code
  - The number of events for that event code
- A grand total of revenue protection events

Parameters

The MDM Physical Meter Event report uses the following parameters:

- **Start Date**: The start time of the reporting period
- **End Date**: The stop time of the reporting period
- **Service Point**: The service point associated with the meter associated with the events to be included in the report (from the Service Points table)
- **Meter ID**: The meter ID of the meter associated with the events to be included in the report (from the MDM Meters table)
- **Exception/Event Code**: The exception/event code associated with the events to be included in the report (from the MDM Exception Codes table)

This report is run via the **Run Reports** option in the Meter Data Management menu.

MDM Usage Exceptions Report

The MDM Usage Exceptions/Events report displays the status of all usage exceptions/events.

Reported Data

The report displays the following:

- Report summary information, including:
  - Run Date/Time
  - Report Start Date
  - Report Stop Date
  - A pie graph depicting the percentage of each type of exception/event reported
- For each exception/event listed on the report:
  - **Meter ID**: The meter ID associated with the exception/event
  - **Service Point ID**: The service point ID of the service point associated with the meter associated with the exception/event
  - **Exception Code**: The exception/event code
  - **Description**: A description of the exception/event
  - **Exception Status**: The status of the exception/event
  - **Exception Time**: The date and time the exception/event occurred
- For each exception code listed on the report:
  - The name/description of the exception code
  - The number of exceptions/events for that exception code
- A grand total of usage exceptions/events

Parameters

The MDM Usage Exceptions/Events report uses the following parameters:

- **Start Date**: The start time of the reporting period
- **End Date**: The stop time of the reporting period
- **Service Point**: The service point associated with the meter associated with the exceptions/events to be included in the report (from the Service Points table)
- **Meter ID**: The meter ID of the meter associated with the exceptions/events to be included in the report (from the MDM Meters table)
- **Exception Code**: The exception/event code associated with the exceptions/events to be included in the report (from the MDM Exception Codes table)
- **Exception Status**: The status code associated with the exceptions/events to be included in the report (from the Usage Exception Statuses table)

This report is run via the **Run Reports** option in the Meter Data Management menu.

Process Control Summary Report

The Process Control Summary report summarizes all payloads and all transactions processed for a user-specified time period. This report sorts the results by date.

Reported Data

The report displays the following:

- Report summary information, including:
  - Run Date/Time
  - Report Start Date
  - Report Stop Date
- For each date listed on the report:
  - **Inbound Source**: The name of the runtime service
  - **Total Payloads**: The total number of payloads processed by the service
  - **Total Payloads (Error)**: The number of payloads that triggered an error
  - **Total Payloads (Warning)**: The number of payloads that triggered a warning
  - **Total Payloads (Completed)**: The number of payloads that completed successfully
  - **Total Transactions**: The total number of transactions processed by the service
  - **Total Transactions Loaded**: The number of transactions that loaded successfully
  - **Total Transactions Rejected**: The number of rejected transactions
  - **Total Transactions Replacement**: The number of replacement transactions
  - **Total Transactions Deleted**: The number of deleted transactions
  - **Total Transactions Usage Reading Loaded**: The number of usage reading transactions that loaded successfully
  - **Total Transactions Usage Events Loaded**: The number of usage event transactions that loaded successfully
  - **Total Processing Time**: The total time to process all transactions in all payloads
  - **Transactions per Minute**: The rate at which transactions were processed, represented as the number of transactions processed per minute

Parameters

The Process Control Summary report uses the following parameters:

- **Report Title**: The title of the report
- **Start Date**: The start time of the reporting period
- **End Date**: The stop time of the reporting period

This report is run via the **Run Reports** option in the Meter Data Management menu.

Process Control Detail Report

The Process Control Details report displays details for all payloads and all transactions processed for a user-specified time period. This report sorts the results by date.

Reported Data

- Report summary information, including:
  - Run Date/Time
  - Report Start Date
  - Report Stop Date
- For each date listed on the report:
  - **Inbound File Name**: The path and file name of the payload file
  - **Total Transactions**: The total number of transactions in the payload file
  - **Total Transactions Loaded**: The number of transactions that loaded successfully
  - **Total Transactions Rejected**: The number of rejected transactions
  - **Total Transactions Replacement**: The number of replacement transactions
  - **Total Transactions Deleted**: The number of deleted transactions
  - **Total Transactions Usage Reading Loaded**: The number of usage reading transactions that loaded successfully
  - **Total Transactions Usage Events Loaded**: The number of usage event transactions that loaded successfully
  - **Total Processing Time**: The total time to process all transactions in the payload file
  - **Transactions per Minute**: The rate at which transactions were processed, represented as the number of transactions processed per minute

Parameters

The Process Control Details report uses the following parameters:

- **Report Title**: The title of the report
- **Start Date**: The start time of the reporting period
- **End Date**: The stop time of the reporting period

This report is run via the **Run Reports** option in the Meter Data Management menu.

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