UISOL
Demand Response Tool
User Guide

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Disclaimer –

The DRT User Guide is intended to provide Market Participants and other interested parties with introductory information about demand side response participation in the Midwest ISO market. The User Guide is an instructional tool and is not intended to be the source for any ISO's market rules. UISOL and Midwest ISO provide no warranties of any kind with respect to the correctness or completeness of the information set forth in this User Guide, and, therefore, bears no responsibility for any damages resulting from a Market Participant's reliance on or any error or omission in this guide. In no event will Midwest ISO, UISOL or its agents, employees, or suppliers be liable under contract warranty, tort, or any other legal theory for any damages, including incidental, consequential, special, or indirect damages arising from or related to this User Guide or its contents.

Revision History

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1 Introduction

Midwest ISO has implemented UISOL's DRBiznet application to manage their demand response program. They have named the application Demand Response Tool (DRT).

DRT is an application system used to support demand response business processes operated by Regional Transmission Operators and Independent System Operators. This document describes the implementation of DRT for Midwest ISO.

This document will describe the screens and how to navigate the user interface, but it will not describe specific business scenarios or business rules. Consult the "DRT Test Plan" and "DRT Data Dictionary" for details of the business processes and rules.

1.1 Abbreviations and Acronyms

Term or Acronym	Definition
AO	Asset Owner
ARC	Aggregator of Retail Customers
A/S	Ancillary Services
CBL	Calculated Baseline Load
CPNode	Commercial Pricing Node
CSV	Comma Separated Value
DA	Day-Ahead
DLC	Direct Load Control
DRR AO	Demand Response Resource Asset Owner
DRT	Demand Response Tool, which will be implemented using DRBiznet
Enrollment	The process by which a customer location is enrolled for a specific DR resource
EPNode	Elemental Pricing Node
HE	Hour Ending
ISO	Independent System Operator
LBA	Load Balancing Authority
LSA	Local Security Administrator
LSE AO	Load Serving Entity Asset Owner
Location	A site where a demand response resource is located that can be metered and enrolled
MFRR	Marginal Foregone Retail Rate
OPR	Operator (Midwest ISO)
POP	Post Operations Processor
RT	Real-Time
SMA	Symmetric Multiplicative Adjustment
WSA	Weather Sensitive Adjustment

1.2 DRT Overview

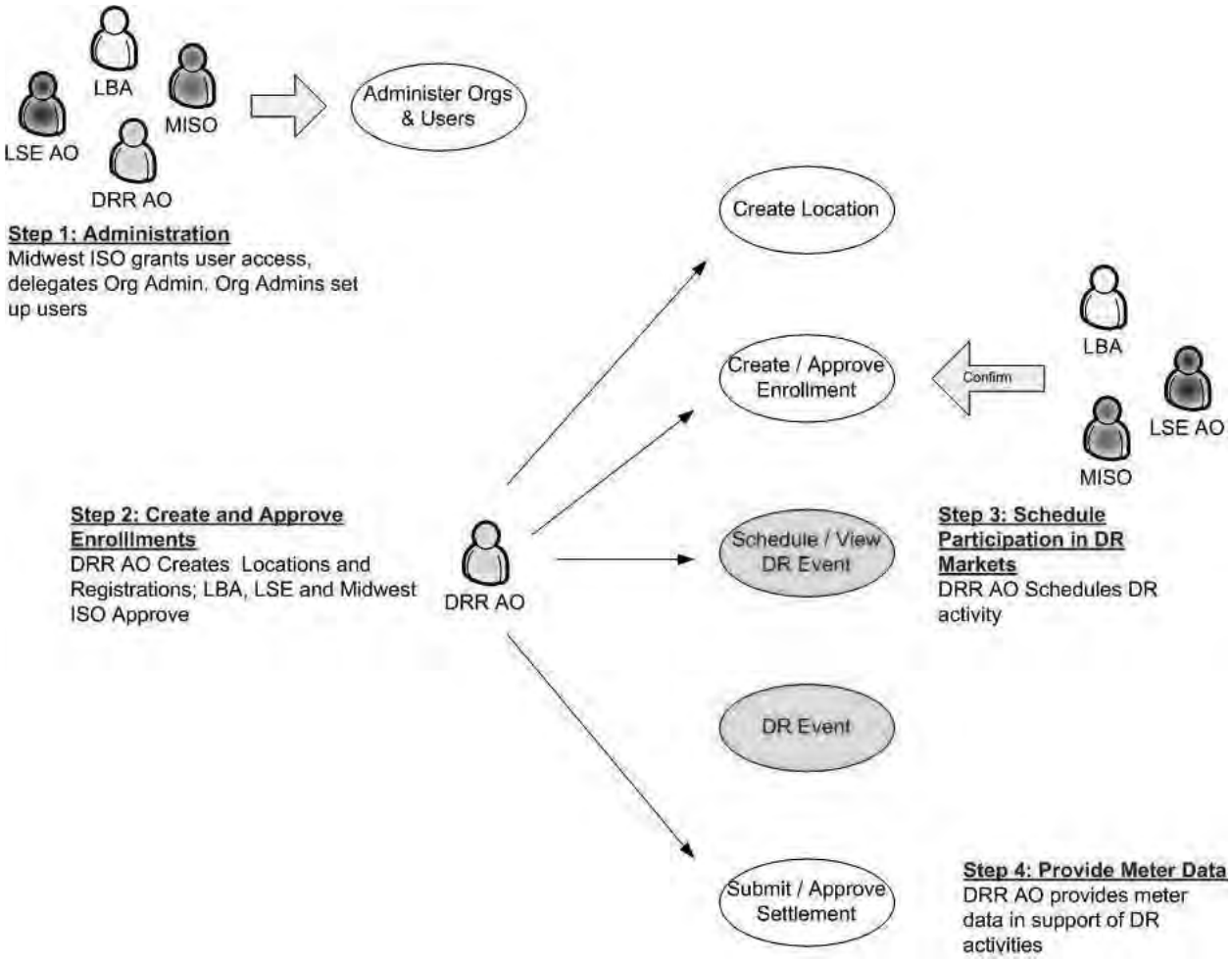


Figure 1: DRT System Overview

Figure 1: DRT System Overview provides an overview of the main components and users of the Demand Response Tool (DRT).

A variety of organization types and users can interact with DRT:

1. The end use customer is the ultimate participant in the Load Reduction market, but typically will not access DRT directly.
2. Midwest ISO Administrators are employees of Midwest ISO who can enable organizations and users to access Midwest ISO systems. DRT supports three types of administration roles:
    - ***Super-user*** with the ability to perform all business actions in the system, can perform business actions on behalf of organizations, has full read / write access to all data in the system, and has access to the system administration functions of DRT. This user will normally be responsible for the technical system administration functions.
    - ***Business / Operational user*** with the ability to perform all business actions in the system and has full read / write access to all data in the system, but does not have the

ability to perform system administration functions. This user will normally be responsible for reviewing Midwest ISO specific business activities.
- ***Read only user*** with the ability to read all data attributes, has access to all business process screens but cannot perform business process operations.

3. Organization Administrators are DRR AO, LSE AO and LBA users who can administer certain details about organizations in DRT.
4. Aggregators of Retail Customers (DRR AO) are Midwest ISO market participants who act on behalf of end-use customers who wish to participate in the Midwest ISO Markets as Demand Response Resources.
5. Load Serving Entities (LSE AO) are Midwest ISO members, including load aggregators or power marketers, serving end-use customers within the Midwest ISO Local Balancing Authority Area, who sell electric energy to end-user customers within the Midwest ISO Local Balancing Authority Area.
6. Load Balancing Authorities (LBA) are Midwest ISO members that own or lease electric distribution facilities that are used to provide electric distribution service to electric load within the Midwest ISO Local Balancing Authority Area.
7. ISO is the business user at Midwest ISO responsible for reviewing certain types of enrollment.

There can be many permutations of users and roles. For example, a single person at a DRR AO may perform all activities including enrollment, submitting meter data, and creating settlements, or there may be multiple individuals who perform each role.

DRT has several functional components:

1. ***Administer Organizations and Users:*** Midwest ISO will provision LSA access for an organization. The Local Security Administrators (LSAs) for each Market Participant will provision users and roles for the DRT using the "Create Market Participant User" section of the Market Portal. After the LSA has granted user access, there will be a one day lag time before users will have access to the DRT.
2. ***Create Location:*** The DRR AO enters details about a location that will participate in a demand response program.
3. ***Create and Approve Enrollment:*** The DRR AO enrolls a DR resource at a location to participate in a demand reduction program for a specified time period. The LBA, LSE AO and Midwest ISO review and confirm the enrollment. Resource details will also be captured during this process.
4. ***Schedule DR Event:*** This activity is external to DRT and can be triggered in several ways:
    a. The DRR AO schedules load reduction participation using Midwest ISO's market management system in the energy or ancillary services markets. Details of awards are bridged into DRT, and MMS notifies the DRR AO about demand response awards that cleared.
    b. Midwest ISO dispatches a resource. Details of dispatches are bridged into DRT from Midwest ISO's settlement and billing system (POP).
5. ***DR Event:*** This activity is external to DRT. The end use customer reduces load in accordance with their load reduction awards, or is dispatched by Midwest ISO.
6. ***Create / Approve Settlement:*** The DRR AO provides meter data that can be used for generating settlements for the end use customer's participation in the demand response market. This involves a number of activities:
    a. ***Submit Meter data:*** The DRR AO submits meter data for the event.

b. ***Calculate Reduction:*** DRT calculates the end use customer's load reduction by subtracting the metered load from the Calculated Baseline Load (CBL).
c. ***Submit Performance data:*** Once DRT has calculated the CBL, the performance results are bridged into Midwest ISO's POP system.

1.3 Using DRT

This section will provide an overview of how to use the various features of the DRT application and how to navigate from screen to screen.

1.3.1 Finding your way around in DRT

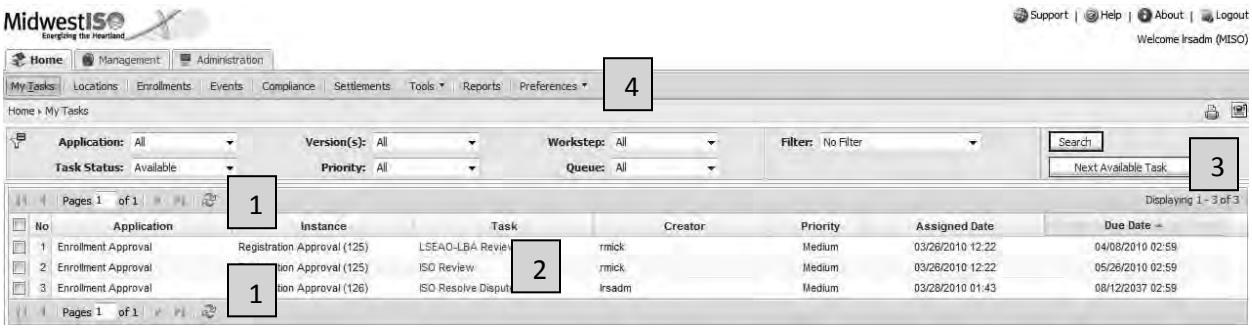


Figure 2: DRT - Basic Navigation

When you log into DRT you will be presented with your work queue in the "My Tasks" screen. DRT uses a workflow engine to keep track of user tasks and to route work items to groups of users. "My Tasks" shows the list of tasks that are available for you (or someone in your group) to take action on. You can perform several actions from the "My Tasks" screen including:

1. ***Next / Previous Page:*** If there are more tasks than can be displayed on a single screen you can move backwards and forwards through successive pages using the Next / Previous page hyperlinks (1).
2. ***Task List:*** You can select a specific work item from your queue to work on by clicking on the hyperlink in the task list (2).
3. ***Next Available Task:*** You can select the next available task (in priority order) by clicking on the "Next Available Task" hyperlink (3).
4. ***Menu Bar:*** You can navigate to a specific DRT functional area by clicking on the relevant tab in the menu bar (4). Functional areas include Locations, Enrollments, Events, Settlements and Compliance. When you select one of these menu items you will be taken to a search screen for the item you selected.

1.3.2 Applications and Work steps

In DRT each workflow is called an “Application”. These applications support end to end processes such as “Registration Approval” and “Settlement Approval”.

Each Application has a number of discrete “Worksteps” such as “LBA Review” and “DRR AO Review Denial”.

Figure 3: DRT - Applications

You can filter the list of tasks by selecting the appropriate application from the “Application” (1) drop down, followed by the “Version(s)” (2) drop down and then select the “Search” (3) button.

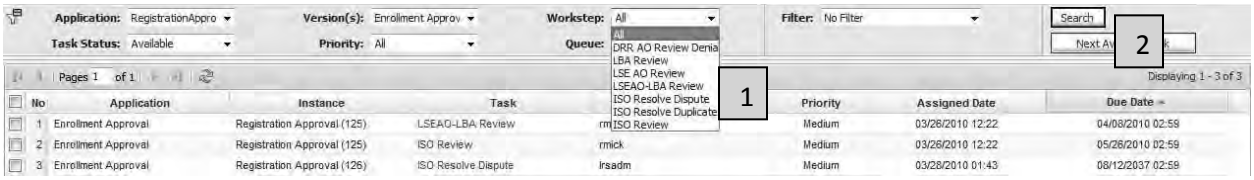


Figure 4: DRT - Work Steps

You can further refine the result set by selecting the appropriate work step from the “Workstep” (1) drop down, followed by the “Search” (2) button.

When you apply a filter the task list will show additional detail about the type of task / work step you have selected. E.g. a list of Enrollment “LBA Review” tasks will show the enrollment ID, enrollment name, DRR AO, LBA, LSE AO and start and end dates (1) for the task.

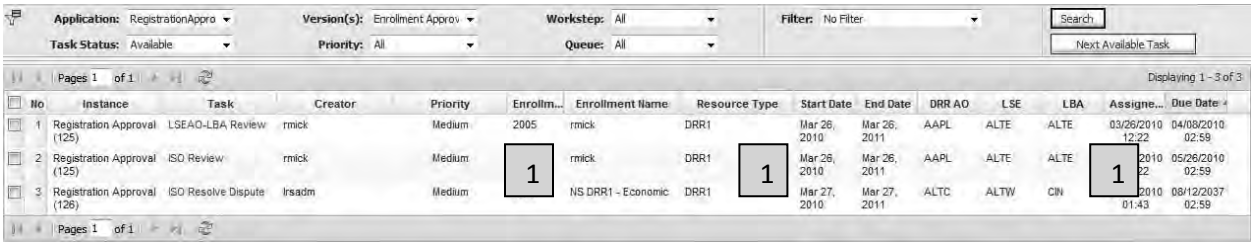
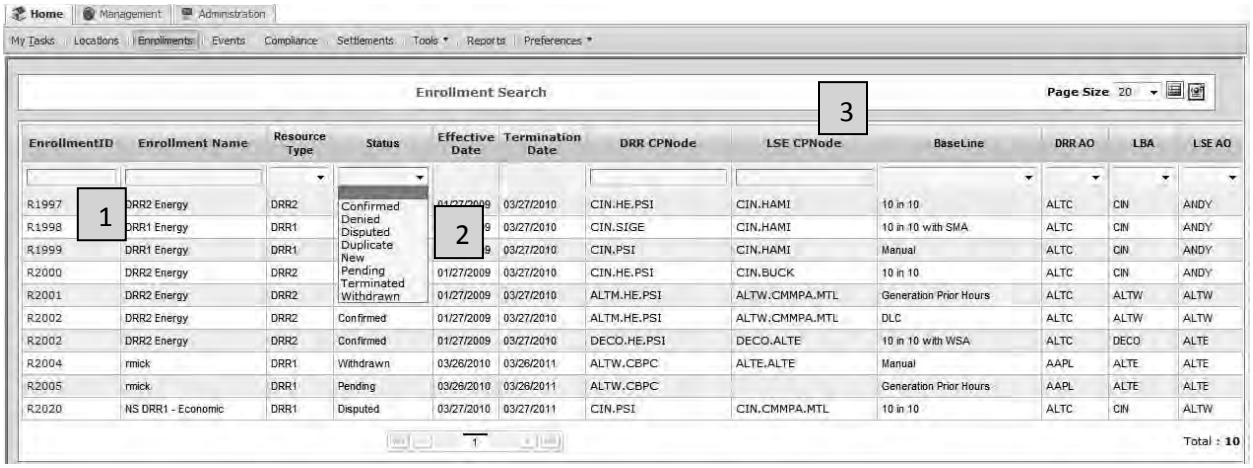


Figure 5: DRT - Task Detail

1.3.3 Searching, Sorting and Filtering



EnrollmentID	Enrollment Name	Resource Type	Status	Effective Date	Termination Date	DRR CPNode	LSE CPNode	BaseLine	DRR AO	LBA	LSE AO
R1997	DRR2 Energy	DRR2		01/27/2009	03/27/2010	CIN.HE.PSI	CIN.HAMI	10 in 10	ALTC	CIN	ANDY
R1998	DRR1 Energy	DRR1		9	03/27/2010	CIN.SIGE	CIN.HAMI	10 in 10 with SMA	ALTC	CIN	ANDY
R1999	DRR1 Energy	DRR1		9	03/27/2010	CIN.PSI	CIN.HAMI	Manual	ALTC	CIN	ANDY
R2000	DRR2 Energy	DRR2		01/27/2009	03/27/2010	CIN.HE.PSI	CIN.BUCK	10 in 10	ALTC	CIN	ANDY
R2001	DRR2 Energy	DRR2		01/27/2009	03/27/2010	ALTM.HE.PSI	ALTW.CMMPA.MTL	Generation Prior Hours	ALTC	ALTW	ALTW
R2002	DRR2 Energy	DRR2	Confirmed	01/27/2009	03/27/2010	ALTM.HE.PSI	ALTW.CMMPA.MTL	DLC	ALTC	ALTW	ALTW
R2002	DRR2 Energy	DRR2	Confirmed	01/27/2009	03/27/2010	DECO.HE.PSI	DECO.ALTE	10 in 10 with WSA	ALTC	DECO	ALTE
R2004	rmick	DRR1	Withdrawn	03/26/2010	03/26/2011	ALTW.CBPC	ALTE.ALTE	Manual	AAPL	ALTE	ALTE
R2005	rmick	DRR1	Pending	03/26/2010	03/26/2011	ALTW.CBPC		Generation Prior Hours	AAPL	ALTE	ALTE
R2020	NS DRR1 - Economic	DRR1	Disputed	03/27/2010	03/27/2011	CIN.PSI	CIN.CMMPA.MTL	10 in 10	ALTC	CIN	ALTW

Figure 6: DRT - Searching, Sorting and Filtering

When any menu bar item is selected you will be taken to the relevant search screen. The search screen will initially show all records for the search item that you have permission to view.

The list of records can be filtered either by typing in a search string to be matched (1), or by selecting the required value from a drop down (2). When you type a match string, DRT will return all records that contain the string in any position. So a search for "st" will return records for "***St***orm sidings", "Bleeker ***St***reet" and "Be***st*** Buy". Multiple search terms can be entered to refine a search.

You can sort a list of records by clicking on any hyperlink (3) in the search list heading. The sort order will be reversed each time the link is clicked.

1.3.4 Editable and non Editable fields

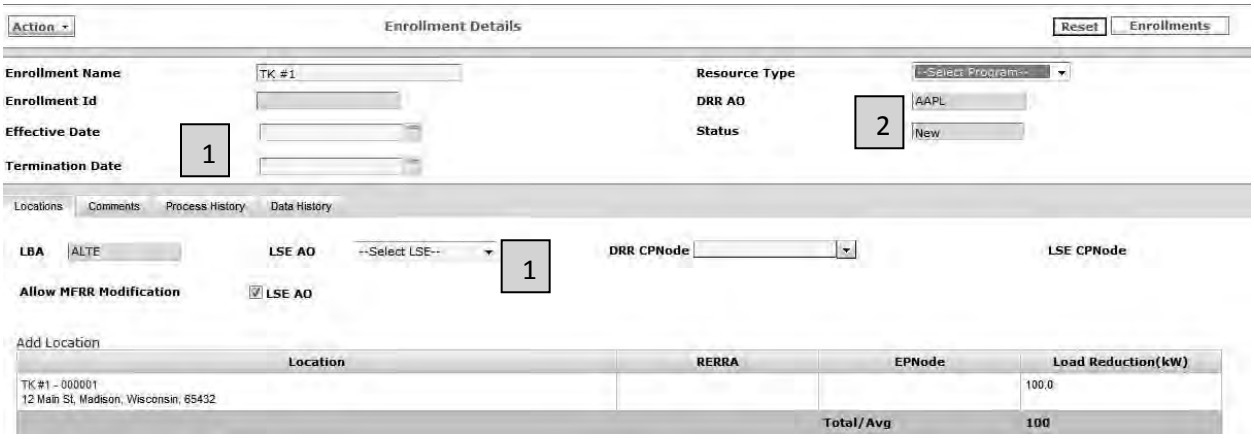


Figure 7: DRT - Editable and Non Editable fields

Fields that can have values entered into them either by typing a value or selecting from a drop down have a yellow background (1); fields that cannot be edited have a grey background (2).

1.3.5 Actions, Cancel and Reset buttons

Figure 8: DRT - Action, Cancel and Reset buttons

The “Actions” (1) button provides a menu of actions that can be performed for the currently displayed screen. When it is selected you will be able to select from a range of relevant options for the current screen and your permissions.

The “Reset” (2) button is displayed when you are in “Edit” mode. Any changes you have made are abandoned, the original values are restored, and you remain in the edit mode.

The “Cancel” (3) button is displayed when you are in “Edit” mode. Any changes you have made are abandoned and you are returned to a non-edit mode.

1.3.6 Editing and Saving data

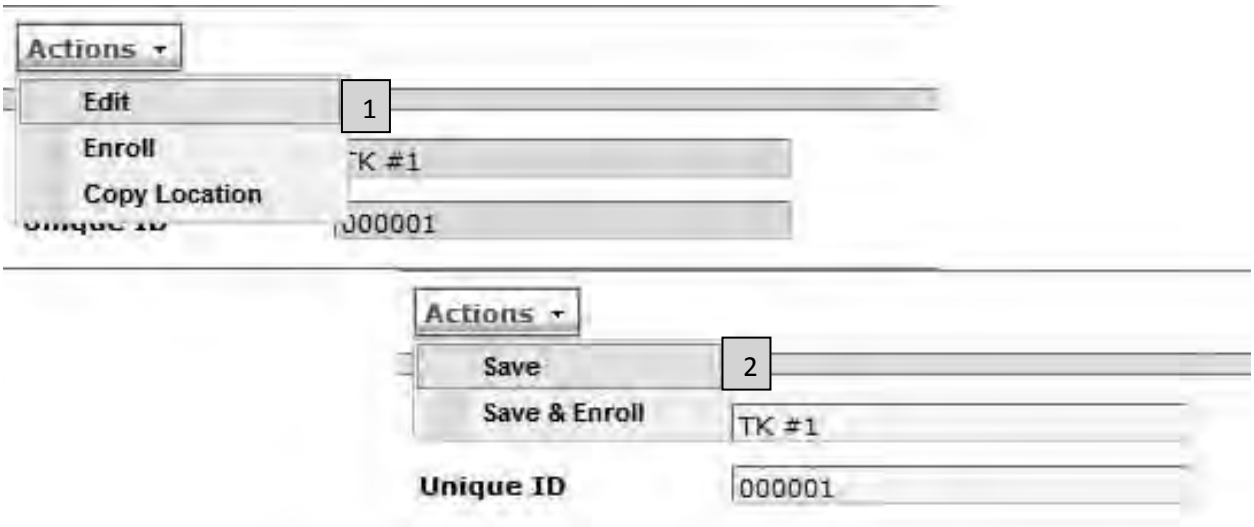
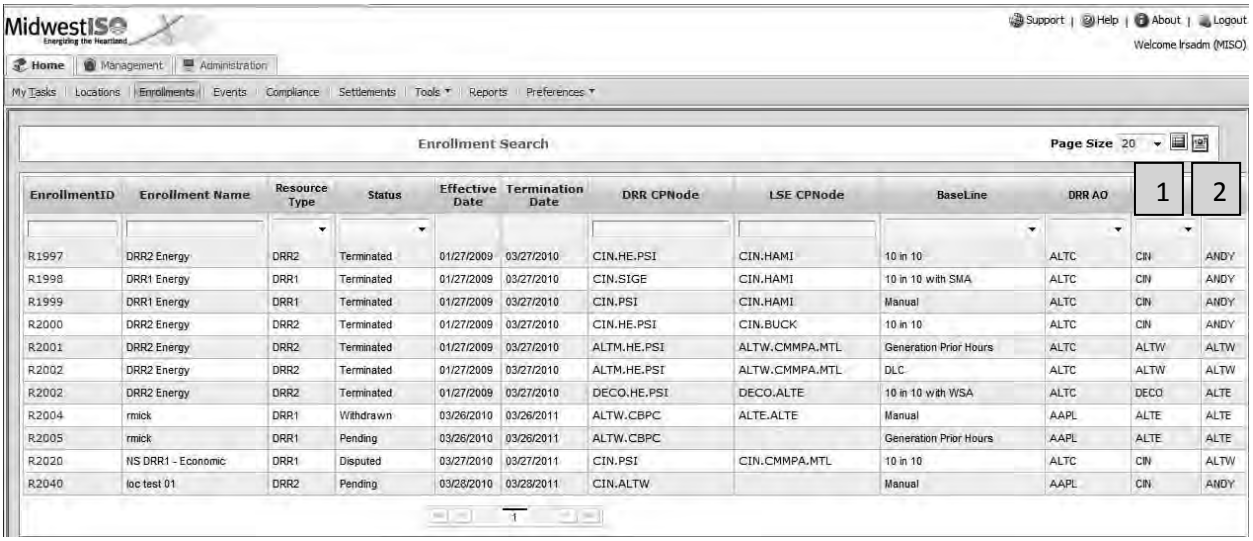


Figure 9: Editing and Saving data

You can view data such as Locations, Enrollments, and Events that you have the correct permissions for by going to the relevant search screen, finding the record you are interested in and clicking on the hyperlink for the record to open the detail screen. Once you are in the detail screen and you wish to

change a value, if you have the correct permissions, you can select Actions → Edit (1) which will put you into edit mode. Any fields you have permission to change will have a yellow background. Once you have made changes you must save them to the database by selecting Actions → Save (2).

1.3.7 Online Help and downloading Excel files



EnrollmentID	Enrollment Name	Resource Type	Status	Effective Date	Termination Date	DRR CPNode	LSE CPNode	BaseLine	DRR AO		
R1997	DRR2 Energy	DRR2	Terminated	01/27/2009	03/27/2010	CIN.HE.PSI	CIN.HAMI	10 in 10	ALTC	CIN	ANDY
R1998	DRR1 Energy	DRR1	Terminated	01/27/2009	03/27/2010	CIN.SIGE	CIN.HAMI	10 in 10 with SMA	ALTC	CIN	ANDY
R1999	DRR1 Energy	DRR1	Terminated	01/27/2009	03/27/2010	CIN.PSI	CIN.HAMI	Manual	ALTC	CIN	ANDY
R2000	DRR2 Energy	DRR2	Terminated	01/27/2009	03/27/2010	CIN.HE.PSI	CIN.BUCK	10 in 10	ALTC	CIN	ANDY
R2001	DRR2 Energy	DRR2	Terminated	01/27/2009	03/27/2010	ALTM.HE.PSI	ALTW.CMMPA.MTL	Generation Prior Hours	ALTC	ALTW	ALTW
R2002	DRR2 Energy	DRR2	Terminated	01/27/2009	03/27/2010	ALTM.HE.PSI	ALTW.CMMPA.MTL	DLC	ALTC	ALTW	ALTW
R2002	DRR2 Energy	DRR2	Terminated	01/27/2009	03/27/2010	DECO.HE.PSI	DECO.ALTE	10 in 10 with WSA	ALTC	DECO	ALTE
R2004	rmick	DRR1	Withdrawn	03/26/2010	03/26/2011	ALTW.CBPC	ALTE.ALTE	Manual	AAPL	ALTE	ALTE
R2005	rmick	DRR1	Pending	03/26/2010	03/26/2011	ALTW.CBPC		Generation Prior Hours	AAPL	ALTE	ALTE
R2020	NS DRR1 - Economic	DRR1	Disputed	03/27/2010	03/27/2011	CIN.PSI	CIN.CMMPA.MTL	10 in 10	ALTC	CIN	ALTW
R2040	loc test 01	DRR2	Pending	03/28/2010	03/28/2011	CIN.ALTW		Manual	AAPL	CIN	ANDY

Figure 10: DRT - Online help and Downloading Files

The “Export to Excel” icon (1) will export the currently displayed list of search items to an Excel spreadsheet.

The “Export to XML” icon (2) will export the currently displayed list of search items to an XML file.

2 Organizations and Users

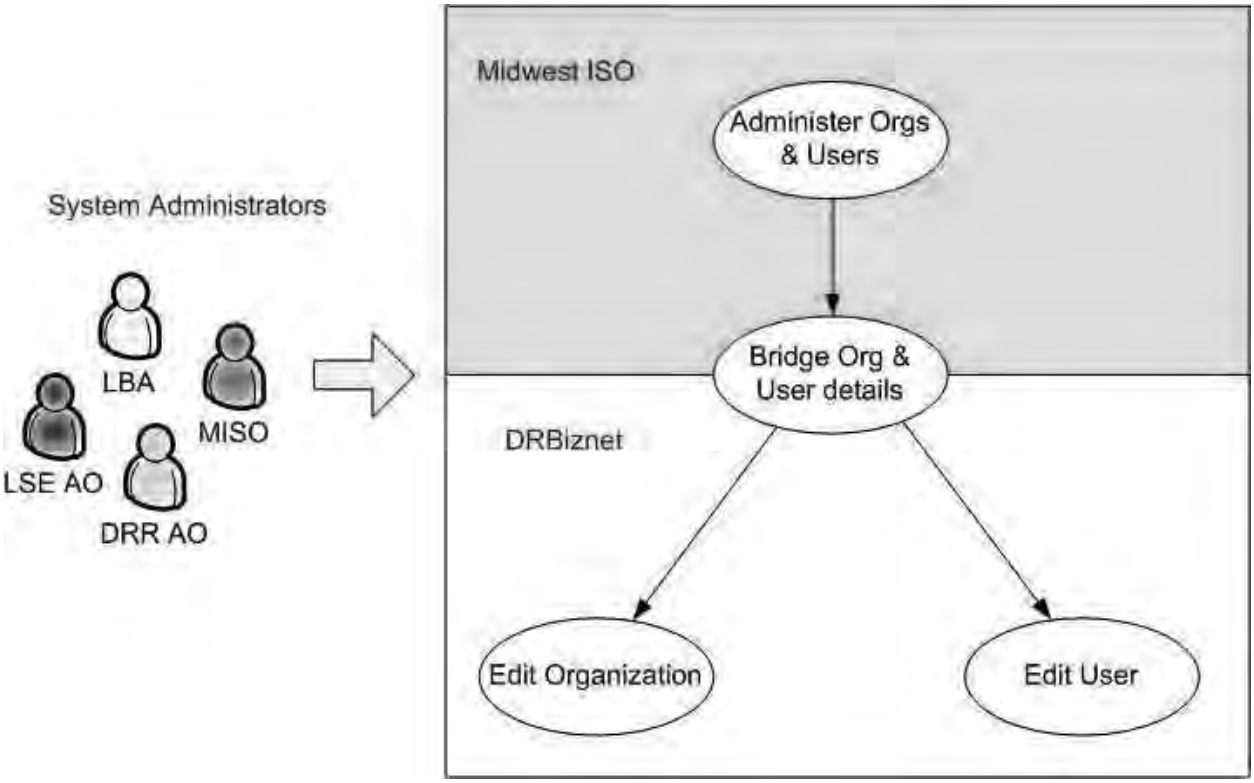


Figure 11: Organizations and Users Overview

Figure 11: Organizations and Users Overview provides an overview of the main activities for administering organizations and users. In order for a user to be able to access DRT, Midwest ISO must first set up organization details and grant access to users in the organization, which entails several steps:

1. ***Administer Organizations and Users:*** Midwest ISO will provision LSA access for an organization; that organization's LSA will then grant user access and roles to the DRT. After the LSA has granted user access, there will be a one day lag time before users will have access to the DRT. It should be noted that the notifications and alerts from the DRT are sent to the email address in the digital certificate that the LSA has set up for the user. LSAs should ensure that email addresses are correct to ensure that users are notified of their tasks
2. ***Bridge Organization and User details:*** Once the Organization and user details have been successfully entered into Midwest ISO's systems they are transferred to DRT where additional information about organizations and users can be entered.
3. ***Edit Organization:*** The Midwest ISO or organization administrator can update organization details.
4. ***Edit User:*** The Midwest ISO or organization administrator can update user details.

A user at an organization will not be able to access or use DRT until their organization and user permissions have been configured correctly in Midwest ISO's systems by their LSA and that information has been updated in DRT. There is no time limit for this access to be set up.

Organizations and Users will be granted permissions appropriate to their roles:

1. Midwest ISO can grant self administration rights to Organization administrators (delegated administration).
2. Some details about organizations and users will be entered into Midwest ISO's systems:
    a. Whether an Organization is an LSE AO, LBA or DRR AO.
    b. User permissions (e.g. Manage Enrollments, Read Settlements etc).
    c. Effective and termination dates.

Table 1: User Permissions shows user permissions.

Permission Name	Description
Read Enrollments	View location and enrollment data
Read Settlements	View event and settlement data
Manage Enrollments	Manage locations and enrollments
Manage Settlements	Manage event and settlement data

Table 1: User Permissions

User permissions are organized as a hierarchy. For example, Manage Enrollment allows users to view and manage Enrollments and Locations, Manage Settlements allow users to view and manage Events and Settlements and Manage All allows users to manage all of them. Read Permissions function in a similar manner.

2.1 Organization Status

Status	Description
New	New Organization. Organization has been created, but is not yet effective.
Active	Organization is effective; users can log in to the system.
InActive	Organization is not effective; users cannot log in to the system.

2.2 Searching for Organizations

Select "Tools → Org and User Management" (1) to get to the Organization search page.

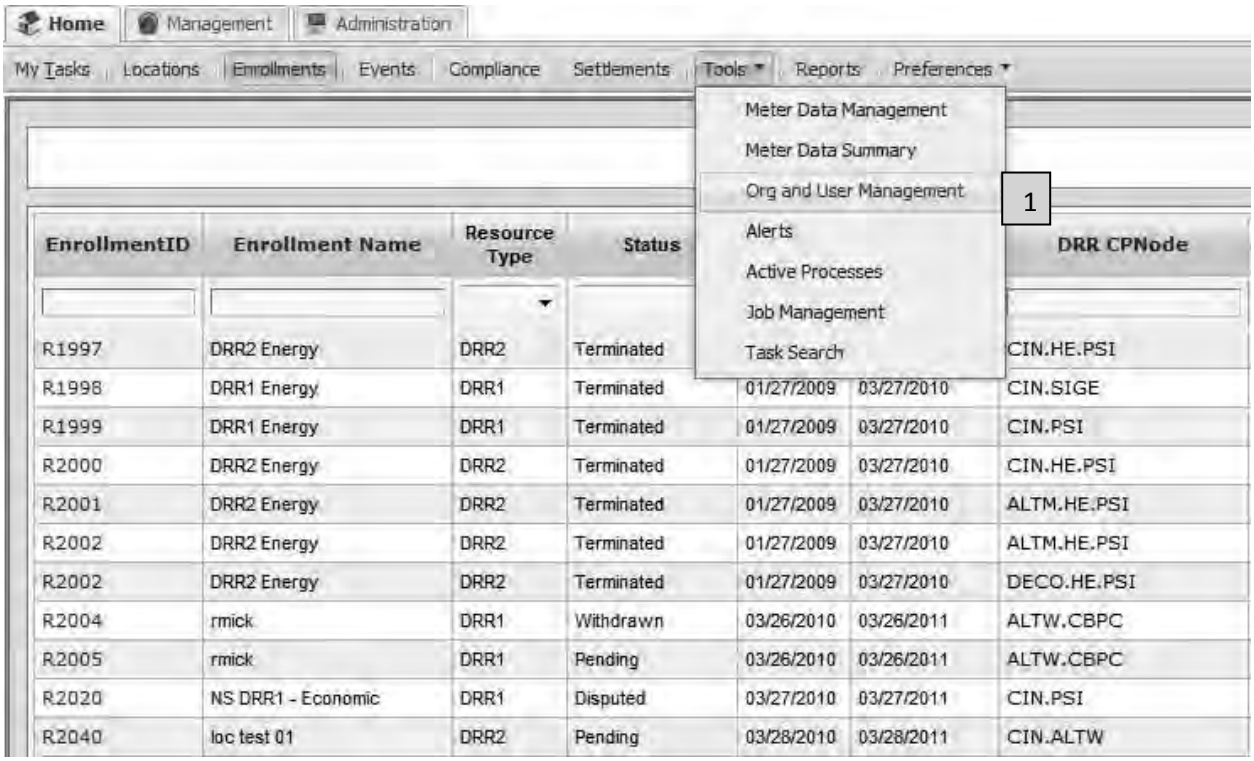


Figure 12: Organization - Getting to the Search Page

When this option is selected the Search Organization screen will be displayed:

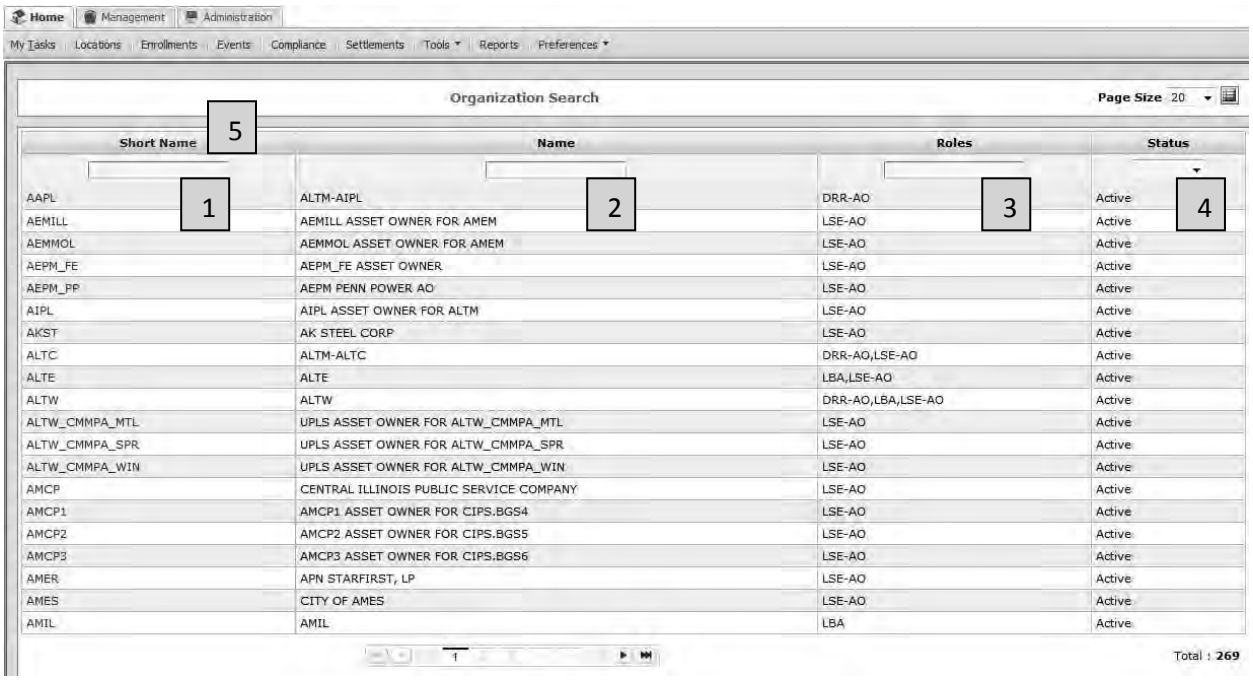


Figure 13: Organization - Search

Organizations can be filtered by “Short Name” (1), “Name” (2) or “Roles” by typing in matching text, or by “Status” (4) by selecting the relevant status in the drop down. The results can be sorted by clicking on the “Short Name” (5) hyperlink.

To see details about a specific Organization click on the relevant “Short Name” link.

2.3 Viewing Organization Details

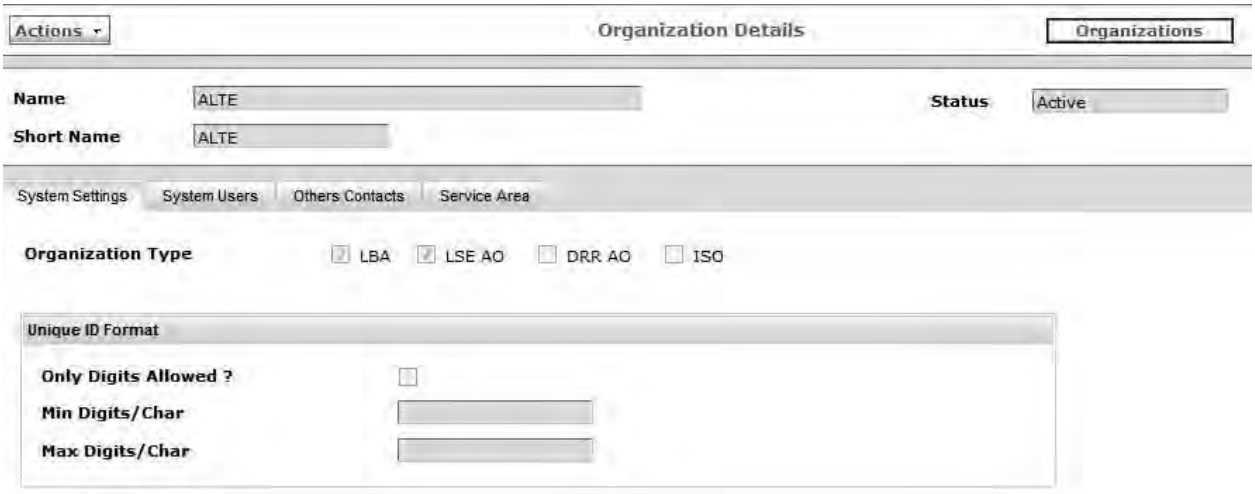


Figure 14: Organization – Details

This screen shows details of the selected Organization.

2.4 Viewing Organization System Users

Figure 15: Organization - System Users

This tab shows system users (those able to log into DRT) for the selected Organization. This screen is only visible to those who have suitable privileges.

3 Locations

A location is a site that can be metered and enrolled for participation in a DR program. In the DRT locations are created separately from an enrollment for several reasons:

1. An enrollment can have more than one location (an aggregation).
2. A location can be re-enrolled for a new time period.

Separating the location from the enrollment reduces re-entry of data every time an enrollment is created.

Note that a location must be created before an enrollment can be created.

3.1 Location Status

Status	Description
New	New Location. Location has been created, but has not been associated with an enrollment.
Active	Location has been associated with an enrollment and is active.
Inactive	Location has been inactivated.

3.2 Searching for Locations

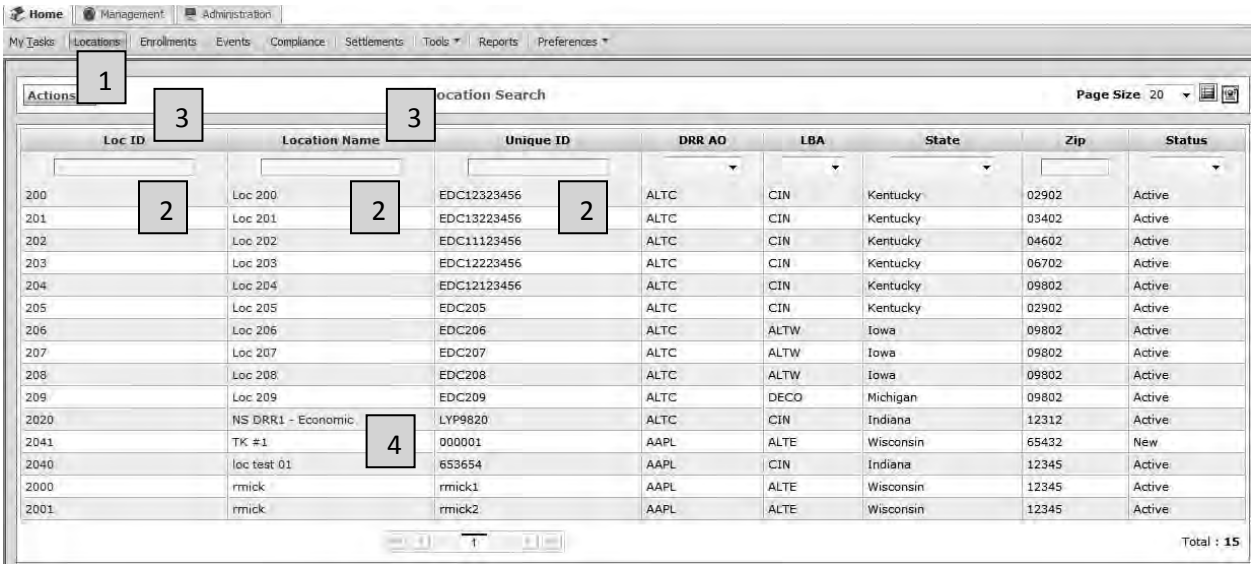


Figure 16: Location – Getting to the Search Page

Select the “Locations” menu item (1) to get to the “Location Search” screen. This screen presents a list of locations that you are authorized to view. You can filter the list by entering or selecting filter criteria (2) in the fields with a yellow background, and then clicking the “tab” button on your keyboard or sort it

by clicking on a sort hyperlink (3). You can view the details of a specific location by clicking on the hyperlink in the “Location Name” column (4).

3.3 Viewing Location Details

Once you have selected a location to view the details you will see a screen with multiple tabs. The header section is displayed regardless of the tab selected and shows information such as the location name, Unique ID and LBA. LBAs and LSE AOs will only be able to view locations that have been associated with enrollments and for which they are the LSE AO or LBA. Note that the LSE AO is selected on an enrollment, not on the location.

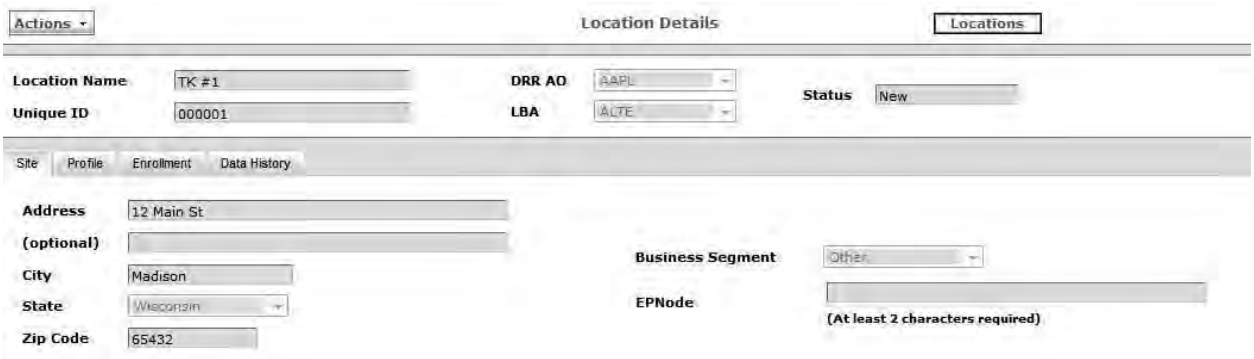


Figure 17: Location - Site

The “Site” tab shows details about the physical location of the demand resource.

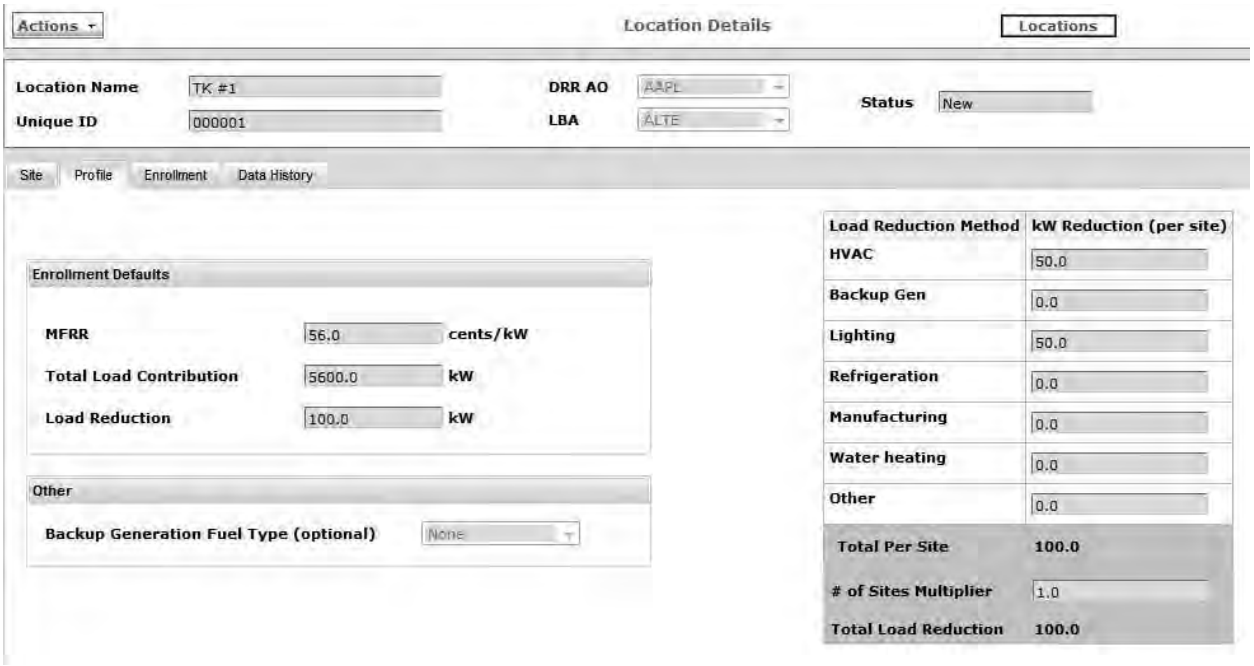


Figure 18: Location – Profile

The “Profile” tab shows details about the load reduction capabilities of the demand resource.

Figure 19: Location – Enrollments

The “Enrollment” tab shows details about any enrollments that have been created for the location.

Figure 20: Location - Data History

The “Data History” tab shows a record of any changes that have been made to a location, when they were made and by whom.

3.4 Creating Locations

The DRR AO (or ISO) can create a new location by going to the “Location Search” screen and selecting the “Actions → New Location” option (1). This option will not be available to anyone who is not a DRR AO.

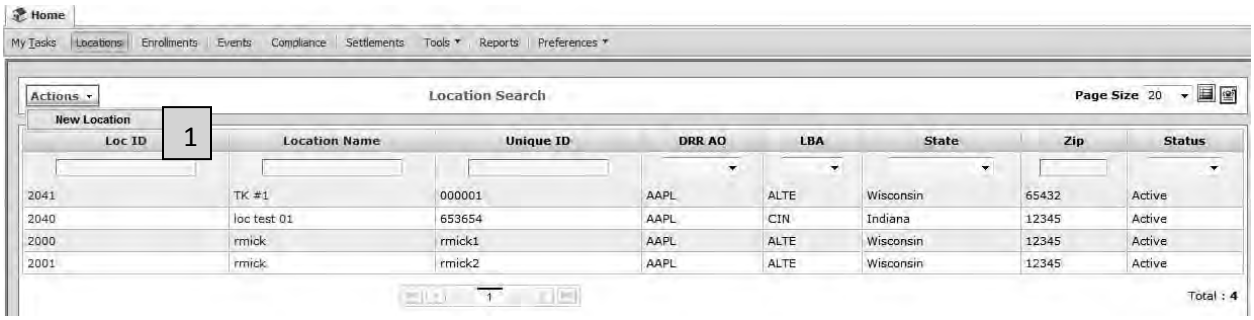


Figure 21: Location - Create New Location

The DRR AO must supply details in all fields with a yellow background, other than those marked "(optional)" on both the "Site" and "Profile" tabs; otherwise a validation error message will be displayed requesting the missing data.

Figure 22: Location - Create Site details

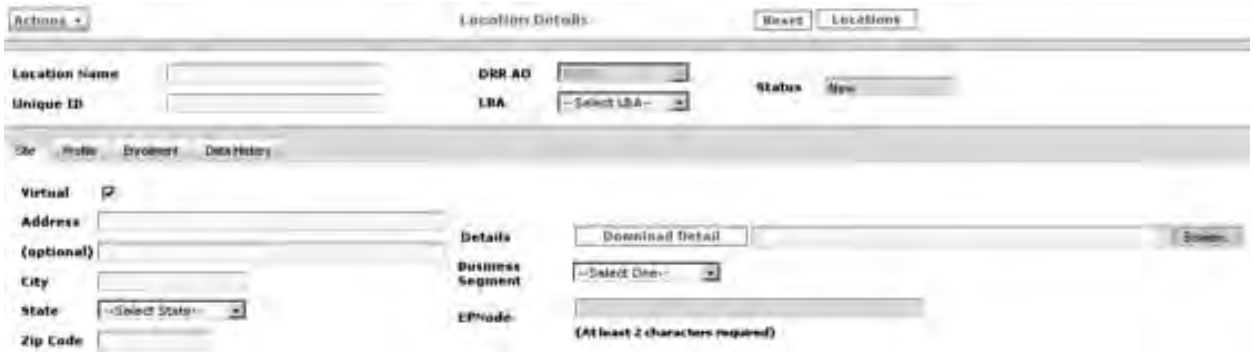


Figure 233: Location - Create Site details with virtual location

Once the site information has been entered, the DRR AO must supply data about the load reduction activities on the "Profile" tab in fields with a yellow background.

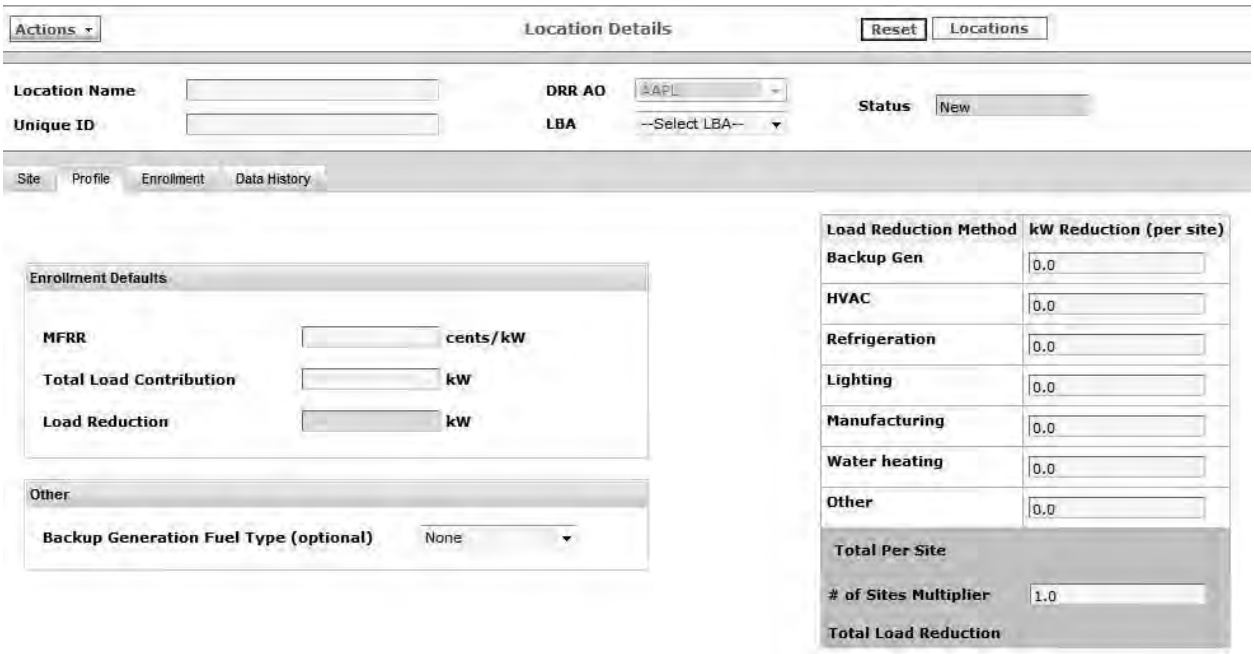


Figure 24: Location - Create Profile

3.5 Enrolling Locations

If you are a DRR AO, once you have entered all the details about a location you can select “Save and Enroll” (1) which will take you to a blank “Create Enrollment” screen pre-populated with the location details. See the section on creating enrollments for details.

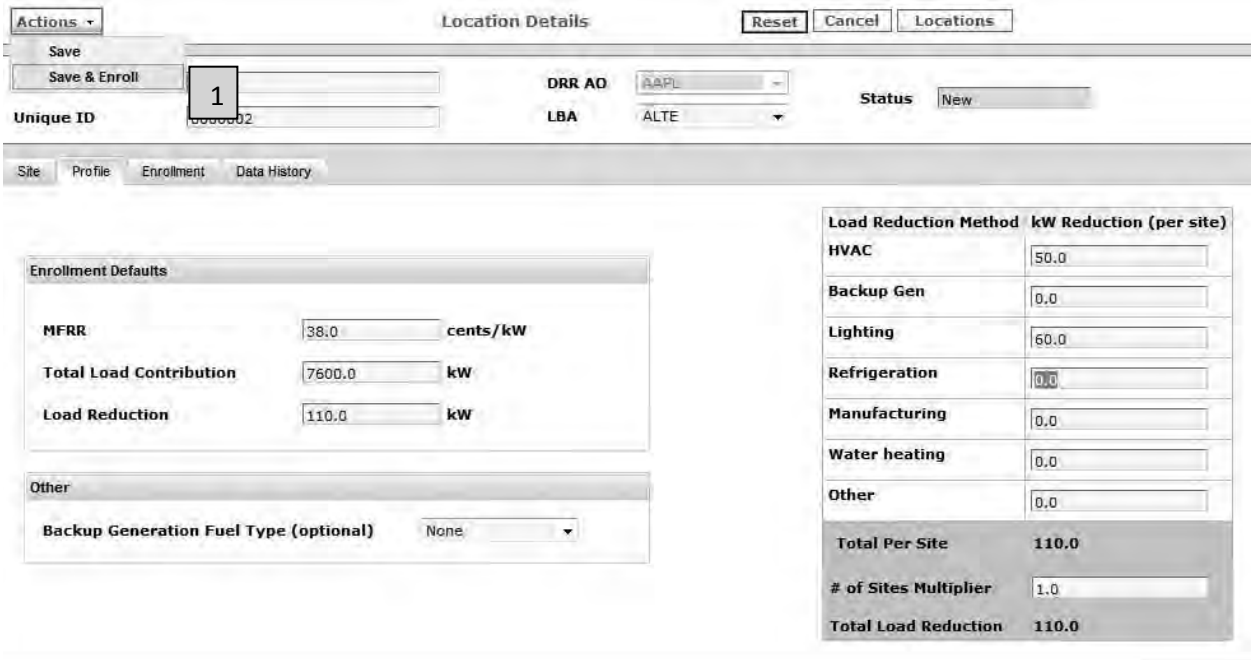


Figure 25: Location - Save and Enroll

A location can be copied by selecting “Actions → Copy Location” (1). This will produce an identical copy of the original location with a blank “Name” field. Note that you must change the Unique ID before enrolling the location or you will get a duplicate error.

Figure26: Location – Copy Location

3.6 Editing Locations

Figure 27: Location - Edit

If you are a DRR AO and you have saved the location, it can be retrieved at a later time and placed in edit mode by selecting the location and choosing “Actions → Edit”. The fields you can edit and the business rules for the changes will depend on whether the location has been enrolled and whether the status of the enrollment is “Pending” or “Confirmed”.

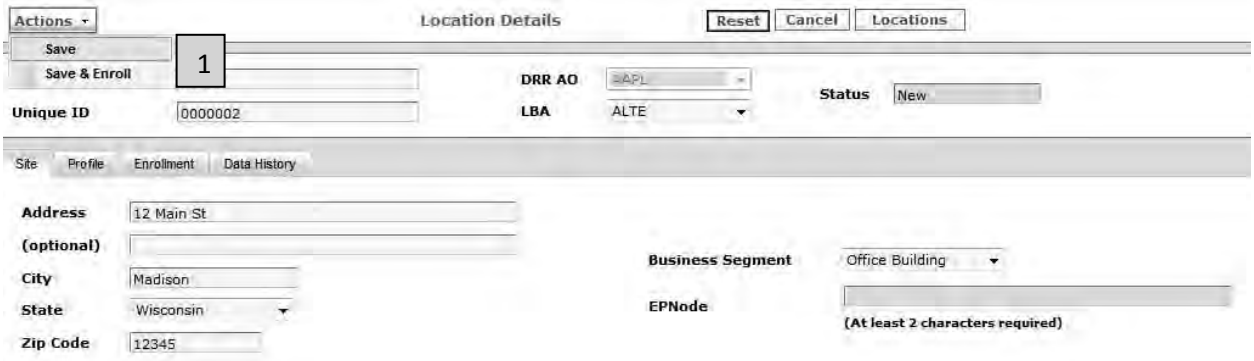


Figure 26: Location – Save

Once you have finished making changes you must commit them to the database by selecting “Actions → Save” (1).

4 Enrollments

At a high level, the enrollment process works as follows:

1. The DRR AO creates a new location or selects an existing location and selects the "Actions → Enroll" option, which takes them to the new enrollment screen.
2. The DRR AO enters details about the enrollment, and submits it for review.
3. The LBA reviews the enrollment and confirms it.
4. The LSE AO reviews the enrollment and confirms it.
5. Midwest ISO reviews the enrollment and confirms it.

The LSE AO, LBA or Midwest ISO may deny the enrollment in which case it will be routed back to the DRR AO. The DRR AO can withdraw, make changes and re-submit, or dispute the denial. If the enrollment is resubmitted, it will be routed back to the LBA and LSE AO for review.

If the enrollment is disputed it will be routed to Midwest ISO. DRR AO will submit a dispute in Siebel to handled through the Alternative Dispute Resolution process.

An enrollment must have a location. If the DRR AO has selected the wrong location, they may 'Edit' the enrollment, add the correct location, remove the incorrect location and 'Save' the enrollment.

Location information is saved at the time the enrollment is submitted. The following enrollment attributes are dynamically reflected in the location when they are updated and submitted in the enrollment: RERRA, EPNode, Load Reduction and the MFRR.

Timeline:

Once a DRR AO has submitted an enrollment for review:

1. The LBA has 10 business days to review it. The enrollment will be automatically set to "Confirmed" on the calendar day after the 10th business day if the LBA takes no action. An alert will be generated after 8 business days. If the LBA Review is auto-confirmed, the EPNode will be assigned by Midwest ISO during the Resource Confirmation work step.
2. The LSE AO has 10 business days to review it. The enrollment will be automatically set to "Confirmed" the calendar day after the 10th business day if the LSE AO takes no action. . An alert will be generated after 8 business days. If the LSE Review is auto-confirmed, the CPNode will be assigned by Midwest ISO during the Resource Confirmation work step.
3. Midwest ISO has 90 calendar days to review the enrollment, after which it will be auto denied and routed to back to the DRR AO.
4. The LBA and LSE AO can review and confirm the enrollment, but will not be able to participate in the load reduction program until confirmation from Midwest ISO is received.
5. An alert will be sent to the LBA and LSE AO two business days before the close of the review window.

6. DRT will send a termination reminder to the DRR AO 45 calendar days and 15 calendar days before the enrollment termination date.
7. Midwest ISO has 60 calendar days to take action on a duplicate enrollment, after which it will be auto denied and routed to back to the DRR AO.

If an enrollment is denied by the LBA or LSE AO, there is no time limit for the DRR AO to make corrections and resubmit. The LSE AO and LBA will still have 10 business days to review the changes after resubmitting. There is no limit on the number of times this process can be repeated.

Use Case:

The "happy path" sequence for a creating an enrollment is as follows:

1. The DRR AO enters details about the enrollment into DRT and submits it.
2. DRT performs a duplicate enrollment check.
3. The LSE AO, LBA and Midwest ISO check "My Tasks" or Alerts to see if there are any enrollments that need to be reviewed.
4. The LSE AO reviews relevant enrollment details and approves the enrollment.
5. The LBA reviews relevant enrollment details and approves the enrollment.
6. Midwest ISO reviews the enrollment, updates DRR CPNode details if required, and approves the enrollment.
7. DRT sets the effective date to the current date if the current date is greater than the requested enrollment date, and sets the enrollment status to "Confirmed".
8. Use case ends.

Alternate Path 1: LBA, LSE AO or Midwest ISO denies the enrollment

Repeat steps 1 – 3 of the happy path scenario:

1. The LBA, LSE AO or Midwest ISO denies the enrollment and supplies relevant denial reasons and a comment. The enrollment is routed back to the DRR AO for review.
2. The DRR AO makes corrections to the enrollment, and resubmits it.
3. The enrollment returns to step 3 of the happy path scenario.

Alternate Path 2: DRR AO disputes the enrollment

Repeat steps 1 – 3 of the happy path scenario:

1. The LBA or LSE AO denies the enrollment and supplies relevant denial reasons and a comment. The enrollment is routed back to the DRR AO for review.
2. The DRR AO disputes the Enrollment which is routed to Midwest ISO for review.

4.1 Enrollment Status

Status	Description
New	Enrollment has been created but not submitted.
Pending	Enrollment has been submitted by the DRR AO, and is pending confirmation by the LBA, LSE AO and Midwest ISO.
Confirmed	Enrollment has been confirmed by the LBA, LSE AO and Midwest ISO.
Denied	Enrollment has been denied by the LBA, LSE AO or Midwest ISO.
Withdrawn	Enrollment has been withdrawn by the DRR AO.
Terminated	The termination date on the enrollment has passed.
Disputed	Denied enrollment has been disputed by the DRR AO and referred to Midwest ISO for resolution.
Duplicate	Enrollment has a location with a Unique ID that has been enrolled by a different DRR AO. The enrollment request has been referred to Midwest ISO for resolution.

4.2 Searching for Enrollments

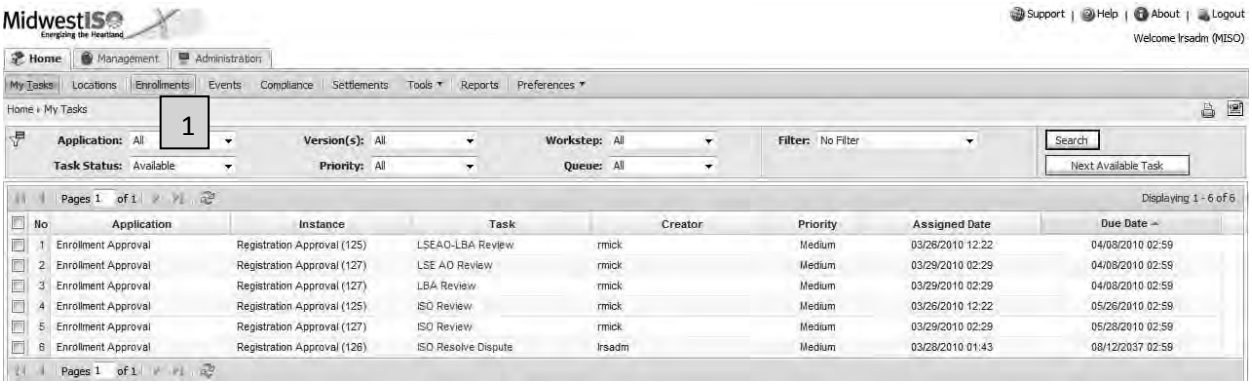


Figure 27: Enrollment - Getting to the Search Page

Select the “Enrollments” menu item (1) to get to the “Enrollment Search” screen.

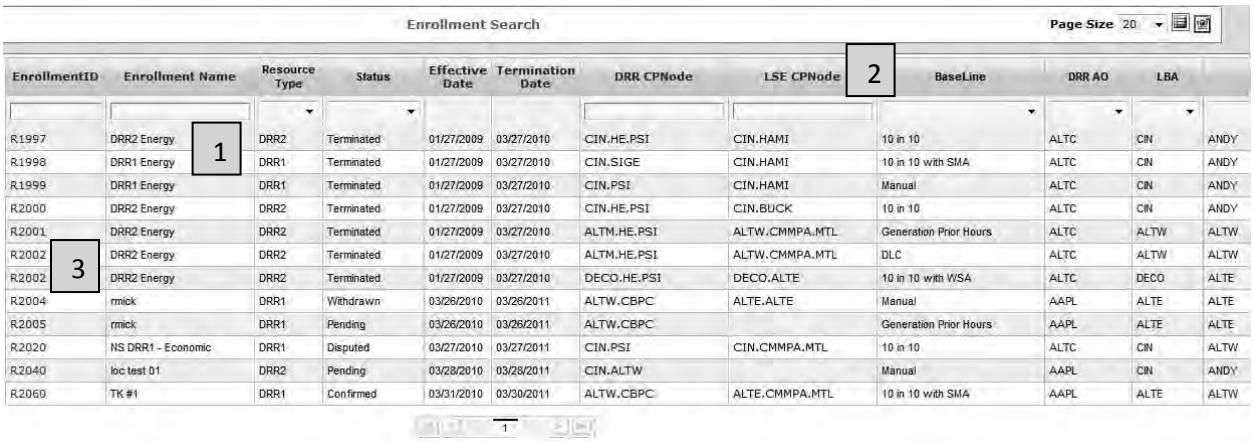


Figure 28: Enrollment – Search

The Enrollment Search screen presents a list of enrollments that you are authorized to view. You can filter the list by entering or selecting filter criteria (1) in the fields with a yellow background, or sort it by clicking on a sort hyperlink (2). You can view the details of a specific enrollment by clicking on the hyperlink in the "Enrollment ID" column (3).

4.3 Enrollments and Locations

Figure 31: Enrollment - Locations

The "Locations" tab shows details about the LBA, LSE AO, DRR and LSE AO CPNodes for the enrollment, along with a summary of the location(s) associated with the enrollment. An enrollment must have at least one location. If the DRR CPNode is not listed in the drop down box, this can be entered in the DRR CPNode box. The CPNode name will be checked by the ISO (Midwest ISO) against the DRR AO's submitted Attachment B.

4.4 Enrollment and Aggregates

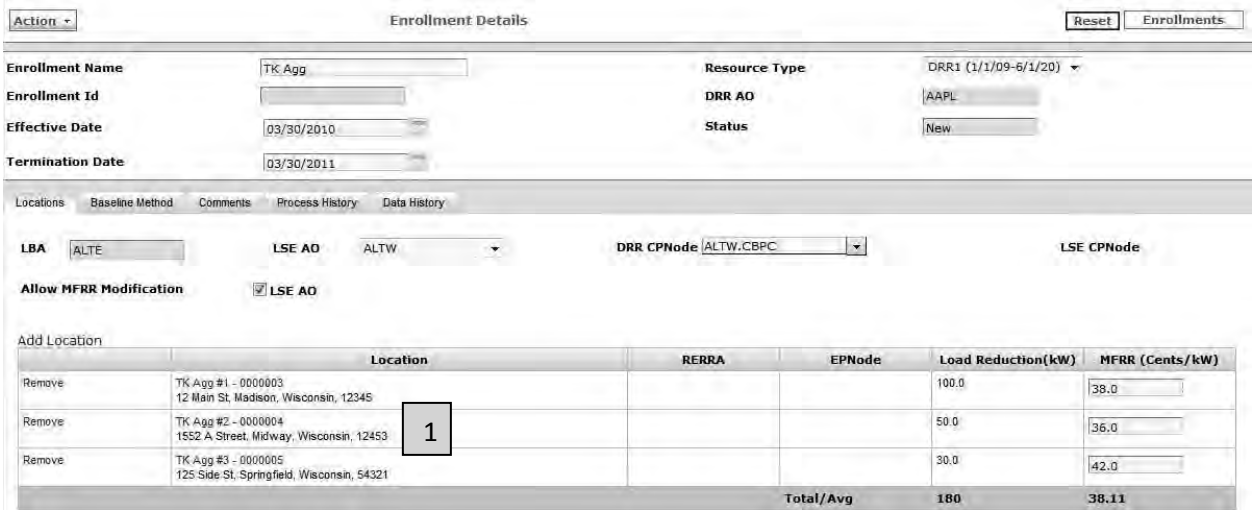


Figure 32: Enrollment - Aggregate

An enrollment can have multiple locations associated with it – an aggregation (1).

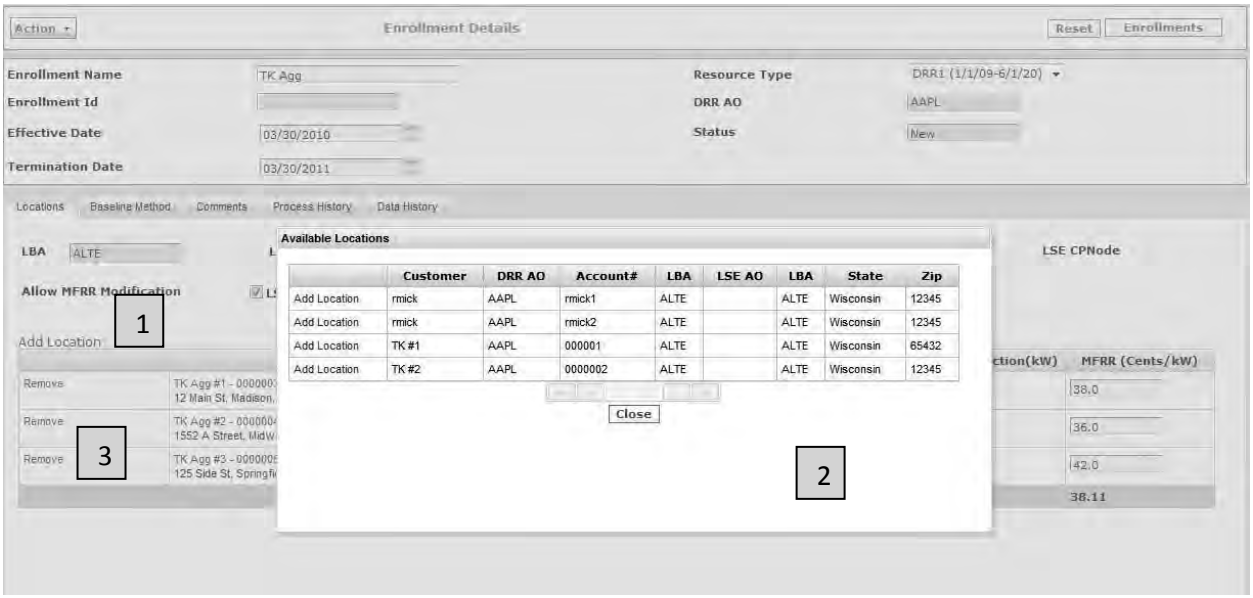


Figure 33: Enrollment - Add location to an aggregate

If you are a DRR AO (or Midwest ISO), the enrollment status is "New" and you are in edit mode, you can add or remove locations from an enrollment by selecting the "Add Location" hyperlink (1). This will open the "Available Locations" pop up (2). Locations can be removed from the aggregation by selecting the "Remove" hyperlink (3).

4.5 Enrollment Comments

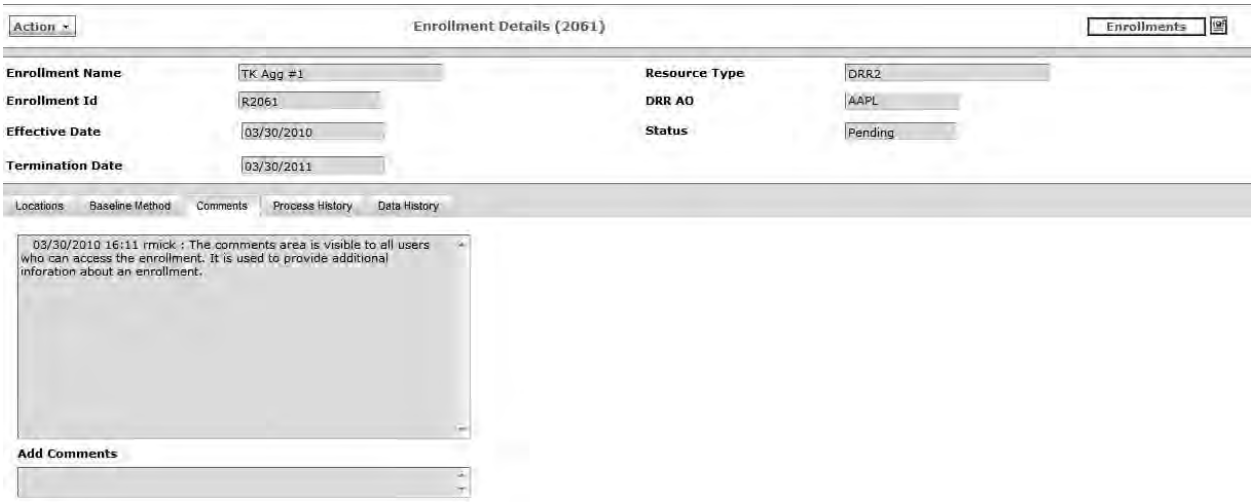


Figure 34: Enrollment – Comments

The comments tab provides a comment field that is visible to all participants in the enrollment. The date, time and userid of the person adding the comment are also displayed. Once entered, comments cannot be edited or deleted.

4.6 Enrollment Process History and Data History

The "Process History" tab shows a list of all the workflows associated with the enrollment, the participants in each workflow and the status and dates of each work step.

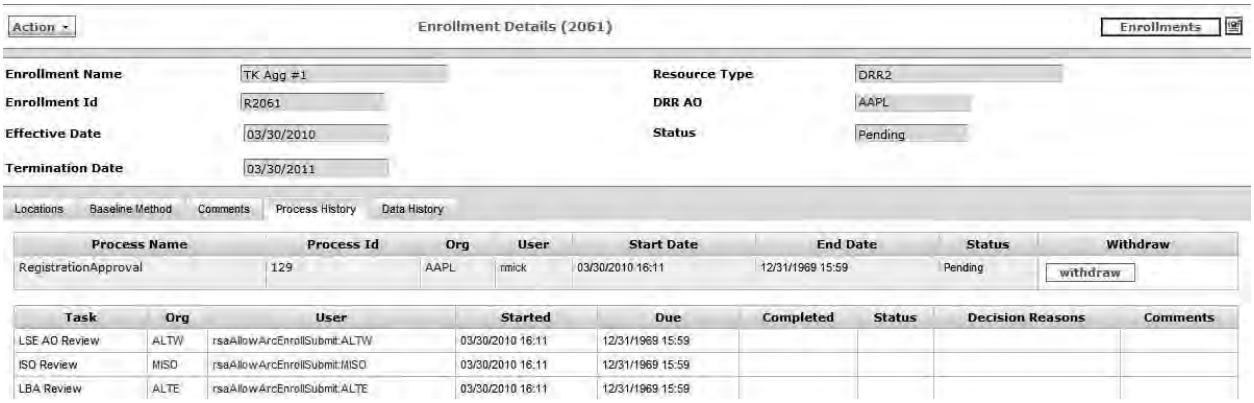


Figure 35: Enrollment - Process History

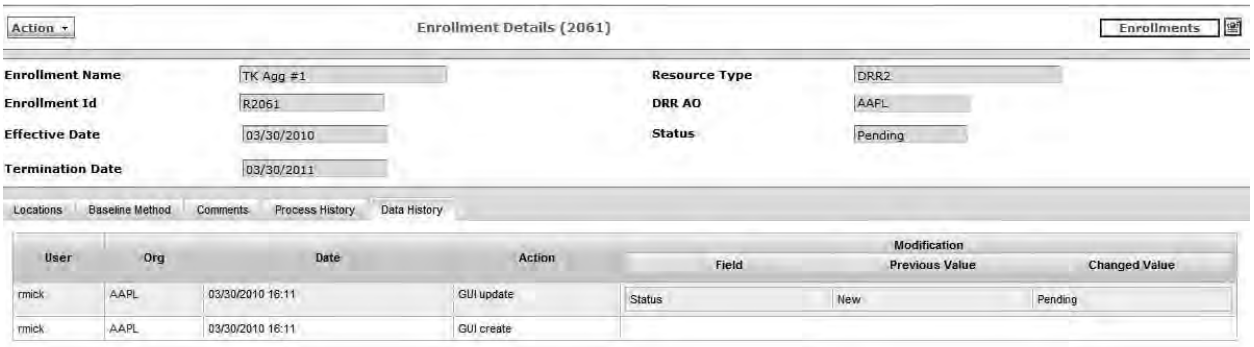


Figure 36: Enrollment - Data History

The "Data History" tab shows a record of any changes that have been made to an enrollment, when they were made and by whom.

4.7 Creating Enrollments

This section describes steps in creating an enrollment that are common to all enrollment programs. You can only create a new enrollment if you are a DRR AO (or Midwest ISO). An enrollment must be created by starting from a location. There are two ways to do this:

1. Create a new location and select "Actions → Save & Enroll".

2. Open an existing location and select “Actions → Enroll”.

This will open the new enrollment screen pre-populated with data from the location.

Figure 37: Enrollment - Creating from a Location

The next step is to select the required program from the drop-down (1).

Figure 29: Enrollment - Selecting the Program

Values must be supplied for fields with a yellow background on the enrollment tabs. The marginal foregone retail rate from the location can be changed for this specific enrollment.

If the DRR AO selects the “Allow MFRR Modification” checkbox (2), the LSE AO will be able to modify the MFRR on the enrollment when they are reviewing the enrollment.

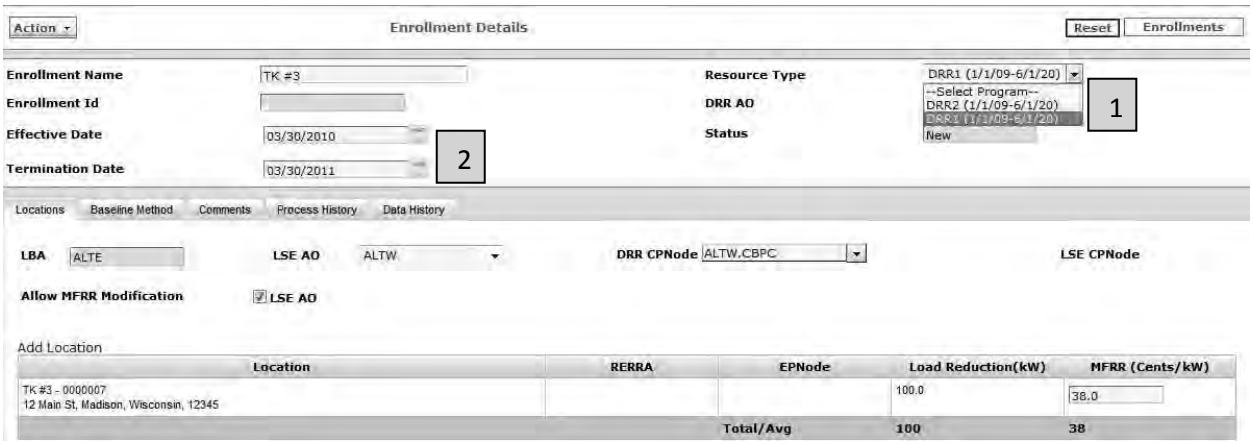


Figure 39: Enrollment - Selecting the Program

The first step in creating an enrollment is to select the required program from the Program drop down (1). This will have the following result:

1. The effective date will be pre-populated with the current date (2).
2. The termination date will be pre-populated with a date ten years from the current date (2).

The effective and termination dates can be changed, but the effective date cannot be less than the current date, and the termination date cannot be more than 10 years from the effective date. Once the enrollment is confirmed the effective date will be set to the confirmation date.

The next step is to supply values for the fields with a yellow background on the enrollment tabs. The MFRR, LSE AO and DRR CPNode can be changed for this specific enrollment.

You must then specify the CBL method for the enrollment on the “Baseline Method” tab.

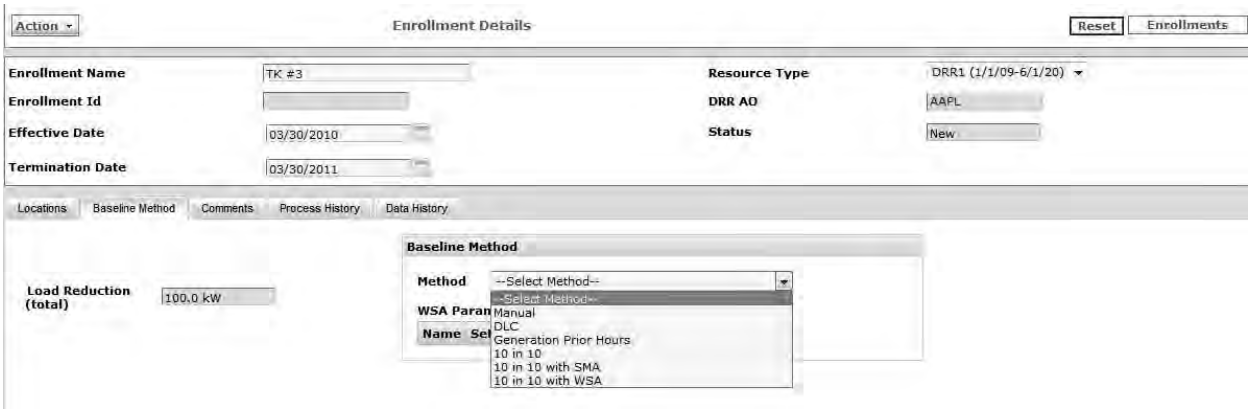


Figure 40: Enrollment – Selecting the CBL

You must then specify all applicable RERRAs on the “RERRA” tab.

Figure 41: Enrollment – Selecting the RERRA

Once all the details of the enrollment have been entered the DRR AO has two options:

1. The enrollment can be “Saved”. This commits all the details of the enrollment to the database, but does not route it for review to the LBA, LSE AO, or Midwest ISO. The status of the enrollment remains as “New”.
2. The enrollment can be “Submitted”. This commits all the details of the enrollment to the database, and routes it for review to the LBA, LSE AO or Midwest ISO. The status of the enrollment changes to “Pending”.

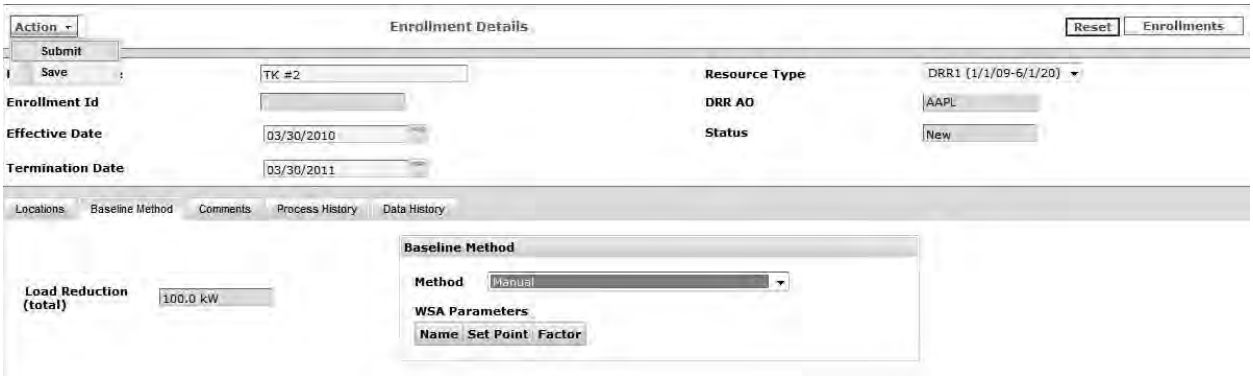


Figure 42: Enrollment - Save or Submit

4.8 Editing Enrollments

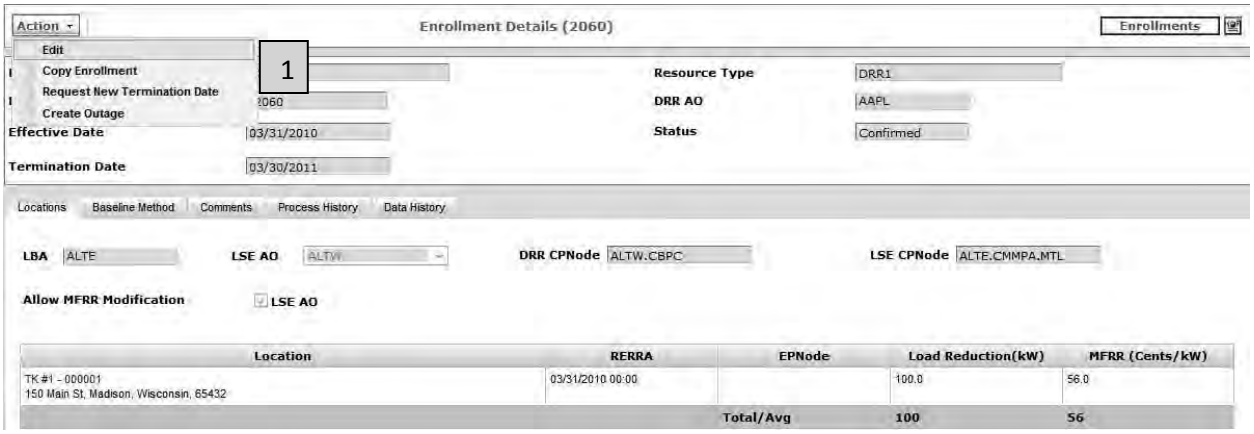


Figure 43: Enrollment - Edit

An enrollment can be edited by selecting "Actions → Edit" (1) which will place the enrollment in edit mode. Editable fields will have a yellow background. The fields that can be edited will depend on the status of the enrollment.

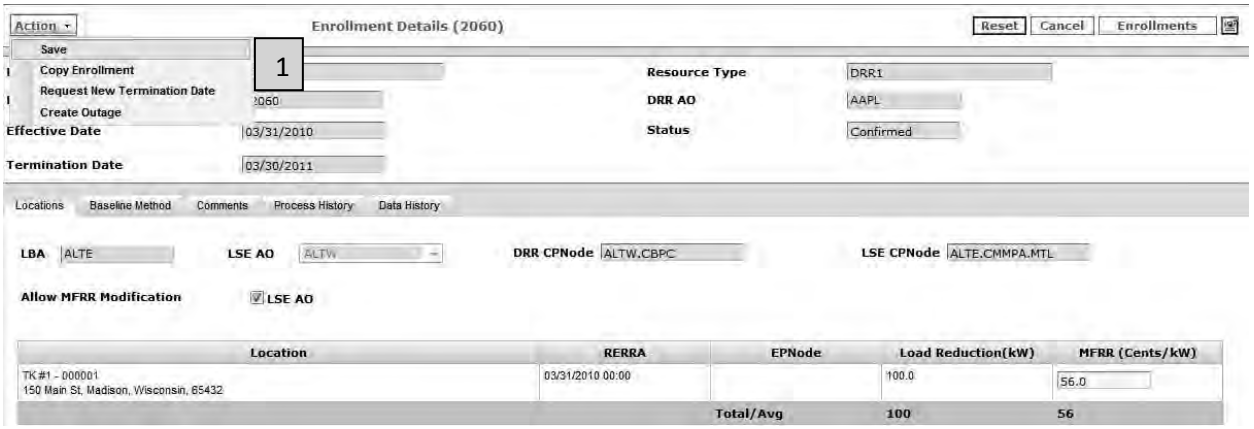


Figure 44: Enrollment - Save

Changes to the enrollment can be committed to the database by selecting "Actions → Save" (1).

4.9 Requesting a CBL with a Weather Sensitive Adjustment

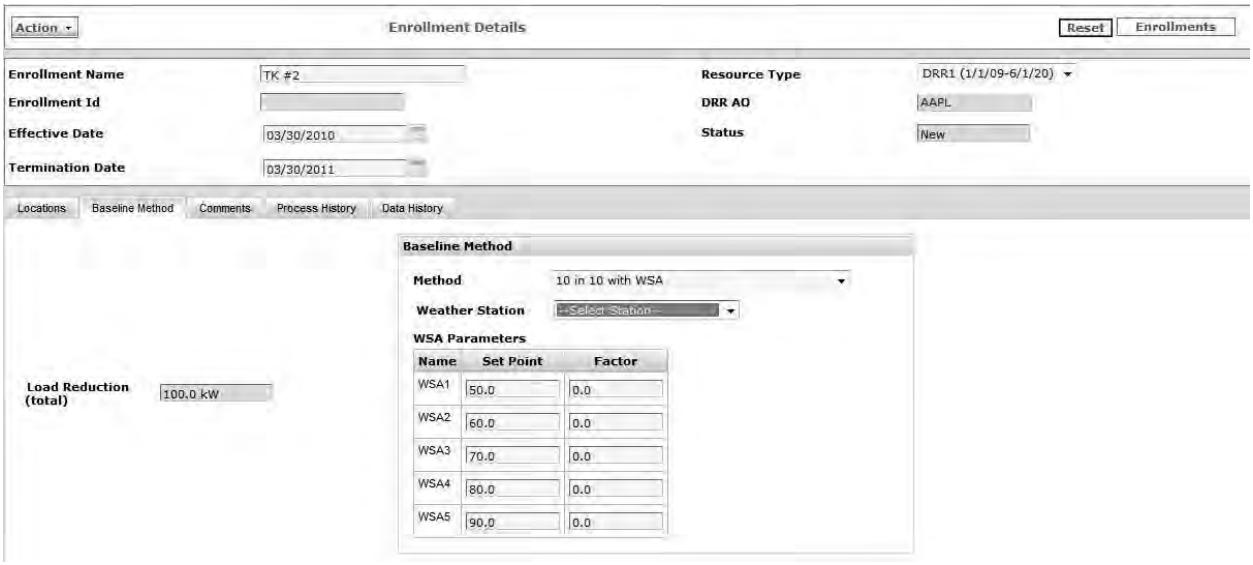


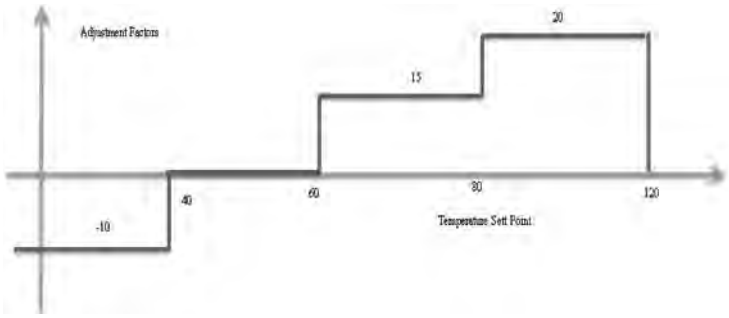
Figure 45: Enrollment - Requesting a CBL with WSA

If a CBL method with a Weather Sensitive Adjustment (WSA) is selected then additional fields for the WSA parameters and weather station are displayed. The following are illustrative examples of how the set-point and WSA factors work.

WSA adjustment curve data

Set Point	WSA Factor
40	-10
60	0
80	15
120	20

WSA adjustment curve data interpretation in depicted below. The factor of -10 is used for temperature set point below 40 degree; The factor of 0 is used for temperature set point between 40 and 60 degrees; The factor of 15 is used for temperature set point between 60 and 80 degrees, etc. There are no values above the last set point.



The adjustment amount is computed by the following steps

1. Compute the average temperature of the basis days for the same hours in the event day. The average is named T basis.
2. Locate the temperature of the event day for the same hour. This is named T event.
3. Compute the areas of the WSA adjustment curve between T basis and T event.
4. The WSA adjustment will be multiplied by -1 if T basis >T event.

The following table illustrates how the WSA adjustment is computed for four different cases. We will take the case 4 as an example. The average temperature for the basis days is 65 and the temperature for the event day is 20. The areas between 20 and 65 is computed by -10*(40-20) + 0*(62-40) + 15*(65-60) = -125. Since average temperature for the basis days is large than that for the event day, a negative value will be used for the area. The final WSA adjustment amount will be 125.

Variables	Case 1	Case 2	Case 3	Case 4
T basis (average)	70	90	10	65
T event	90	70	20	20
Area between T basis and T event	350	350	-100	-125
Sign	1	-1	1	-1
WSA Adjustment	350	-350	-100	125

The weather stations are listed in Table 2.

Weather Station Short Name	**Location**	**ID**
Akron	Akron, OH	CAK
Appleton	Appleton, WI	ATW
Bismarck	Bismarck, ND	BIS
Bloomington	Bloomington,IN	BMG
Carbondale	Carbondale,IL	MDH
Cedar Rapids	Cedar Rapids, IA	CID
Cincinnati	Cincinnati,OH	CVG
Cleveland	Cleveland,OH	CLE
Columbia	Columbia,MO	COU
Davenport	Davenport, IA	DVN
Des Moines	Des Moines,IA	DSM
Detroit	Detroit,MI	DTW
Dubuque	Dubuque, IA	DBQ
Duluth	Duluth,MN	DLH
Eau Claire	Eau Claire, WI	EAU
Evansville	Evansville,IN	EVV
Fargo	Fargo, ND	FAR
Fergus Falls	Fergus Falls,MN	FFM
Fond Du Lac	Fond Du Lac, WI	FLD
Gary	Gary, IN	GYY

Grand Rapids	Grand Rapids,MI	GRR
Greenbay	Greenbay,WI	GRB
Indianapolis	Indianapolis,IN	IND
Iowa City	Iowa City, IA	IOW
Iron Mountain	Iron Mountain, MI	IMT
Jamestown	Jamestown, ND	JMS
Kalamazoo	Kalamazoo, MI	AZO
Lansing	Lansing, MI	LAN
Madison	Madison, WI	MSN
Marquette	Marquette,MI	SAW
Milwaukee	Milwaukee,WI	MKE
Minneapolis	Minneapolis,MN	MSP
Muscatine	Muscatine,IA	MUT
Paducah	Paducah,KY	PAH
Rochester	Rochester,MN	RST
Rockford	Rockford, IL	RFD
Sault Ste Marie	Sault Ste Marie, MI	CIU
Sioux Falls	Sioux Falls, SD	FSD
Southbend	Southbend,IND	SBN
Springfield	Springfield,IL	SPI
St. Cloud	St. Cloud, MN	STC
St. Louis	St. Louis, MO	STL
Toledo	Toledo, OH	TOL
Wausau	Wausau, WI	AUW
Youngstown	Youngstown, OH	YNG

4.10 Confirming Enrollments

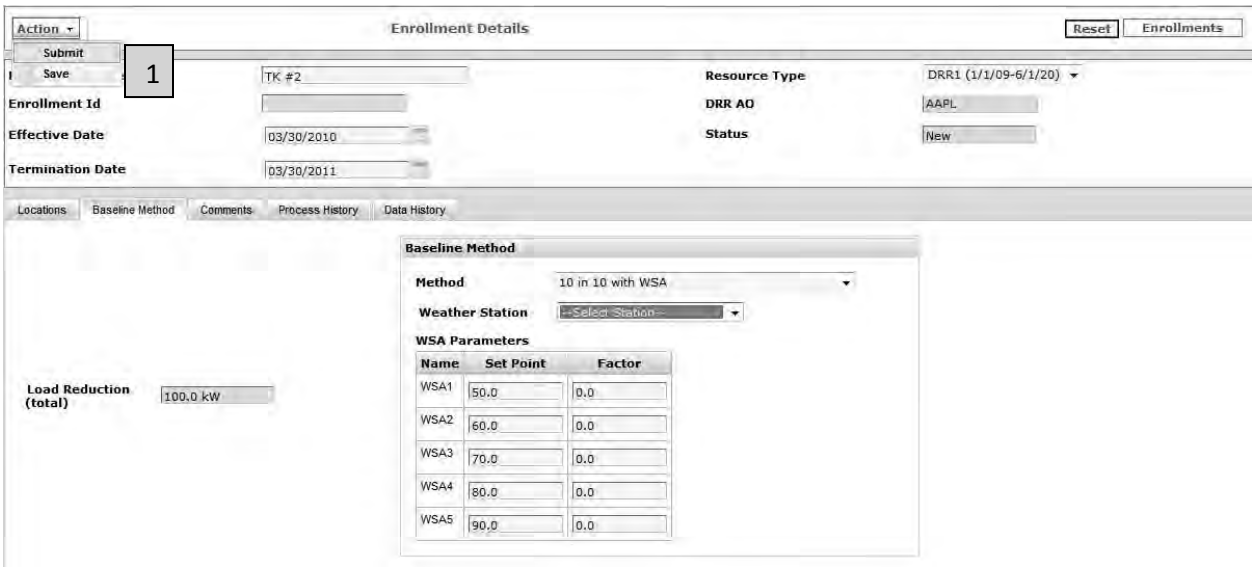


Figure 46: Enrollment - DRR AO Submits Enrollment

Once the DRR AO submits an enrollment (1) its status changes to “Pending” and it is routed to the LBA, LSE AO and Midwest ISO for review.

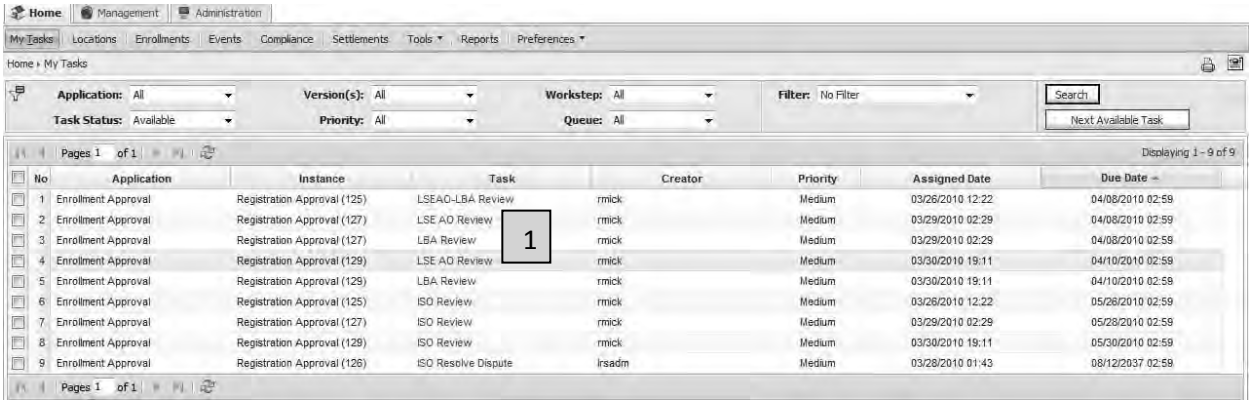


Figure 47: Enrollment - LBA / LSE AO Selects Enrollment to review

When the LBA or LSE AO for the enrollment logs into DRT, they will receive an “Enrollment Approval” work item for “LBA review” or “LSE AO Review” (1).

The LBA or LSE AO selects the relevant hyperlink in the “Task” column which will take them to the review screen.

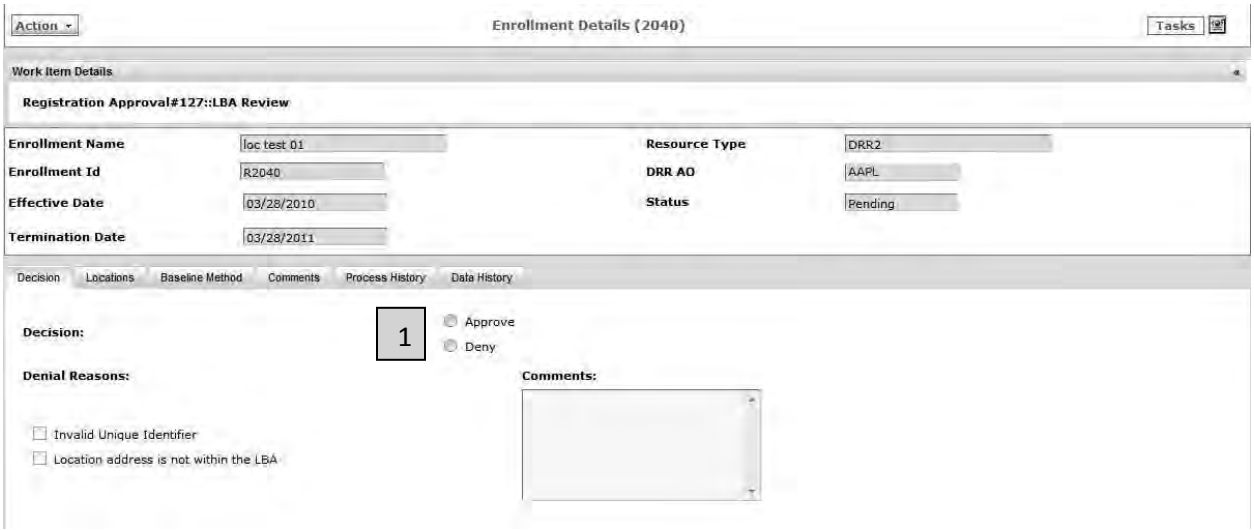


Figure 48: Enrollment - LBA / LSE AO Reviews

The LBA / LSE AO will be presented with the “Enrollment Details” screen, and it will have an extra tab labeled “Decision”. The enrollment data visible to the user will be restricted subject to their permissions.

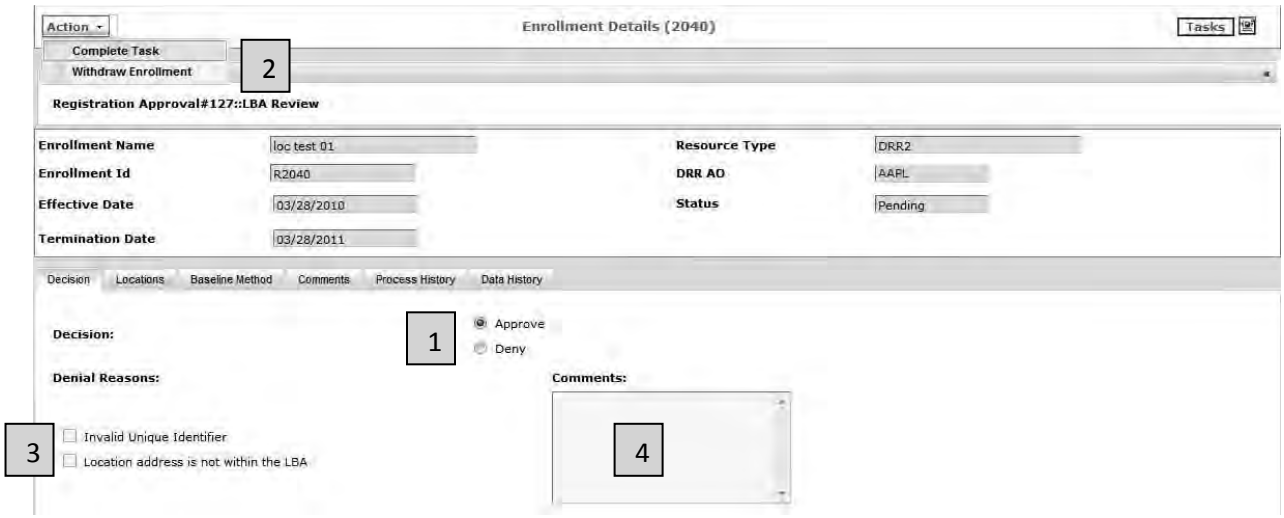


Figure 49: Enrollment - LBA / LSE AO Confirms or Denies

If the user wishes to confirm the enrollment, they will select the “Approve” radio button (1), followed by “Complete task” (2). This will remove the work item from the user’s task list.

The LSE AO or DRR AO may make changes to the MFRR if they wish.

The LSE must select the LSE CPNode.

The LBA must enter a value for the EPNode.

4.11 Resource Confirmation

Once the LBA and LSE AO have both approved the enrollment it will be routed to Midwest ISO for review. Midwest ISO will review the DRR CPNode assignment and update it if necessary. If the DRR CPNode does not exist, Midwest ISO will enter it into their commercial model system, bridge it into DRT, and assign it to the enrollment. Midwest ISO will not be able to approve the enrollment unless there is a valid DRR CPNode for the enrollment.

If Midwest ISO denies the enrollment, reason codes and a comment will be supplied, and the enrollment will be routed back to the DRR AO.

If an “LSE Review” or “LBA Review” work step is auto-approved, Midwest ISO will need to add the EPNode or the CPNode before approving the enrollment.

4.12 Denying Enrollments

If the LSE AO or LBA wishes to deny the enrollment, they will select the “Deny” radio button (1), select relevant reason codes (3), enter a comment (4), followed by “Complete task” (2). This will remove the work item from the user’s task list and route the request back to the DRR AO.

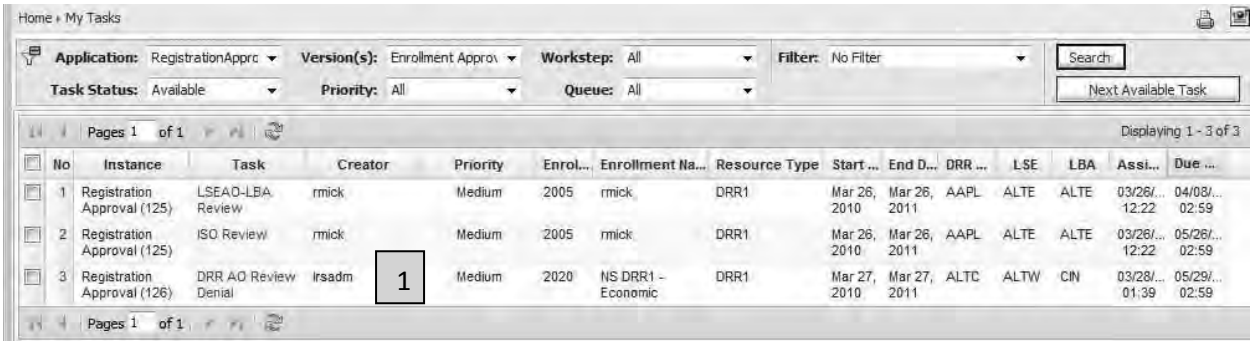


Figure 50: Enrollment - DRR AO Selects Denied Enrollment

When the DRR AO logs in, they will receive a "DRR AO Review Denial" work item in their queue, which they will select to open the Review Denial screen.

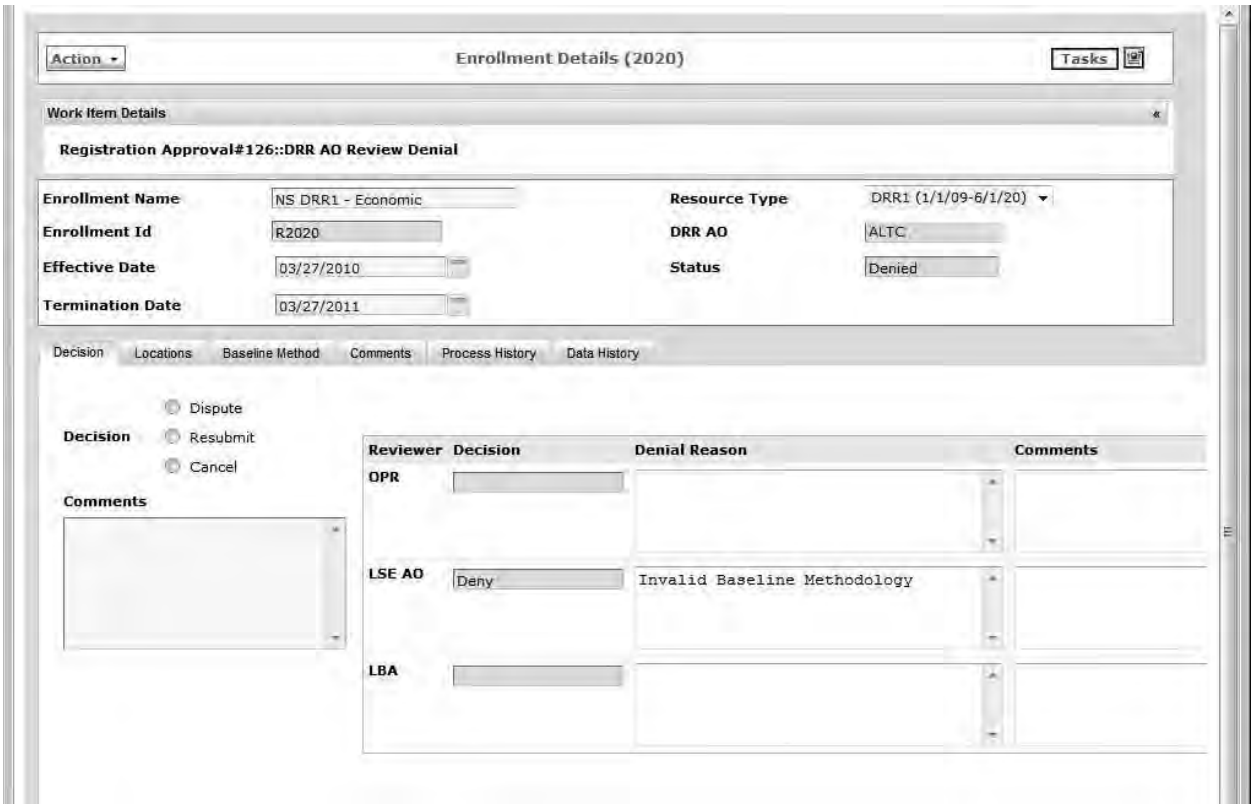


Figure 51: Enrollment - DRR AO Reviews Denied Enrollment

When the DRR AO retrieves the denied work item from their task list, they will see who denied it, the reason code(s) and any comments made by the denier. At this stage the DRR AO can:

1. Dispute the denial, in which case it is routed to Midwest ISO to make a decision.

2. Make changes to the enrollment and resubmit it, in which case it will be routed back to the LBA and LSE AO for review.
3. Cancel in which case the workflow process will be terminated and the status will remain as "Denied".

4.13 Disputing Enrollments

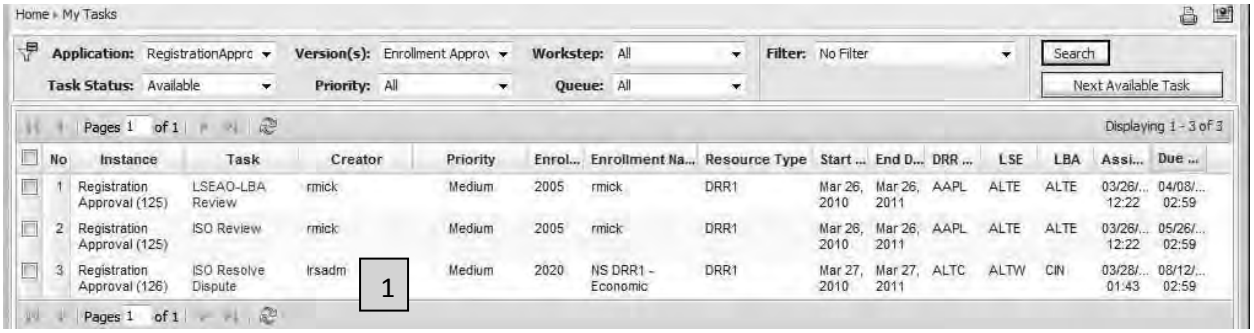


Figure 52: Enrollment – Midwest ISO Selects Disputed Enrollment

If an enrollment is disputed it will appear in Midwest ISO's task list as an "ISO Resolve Dispute" work step.

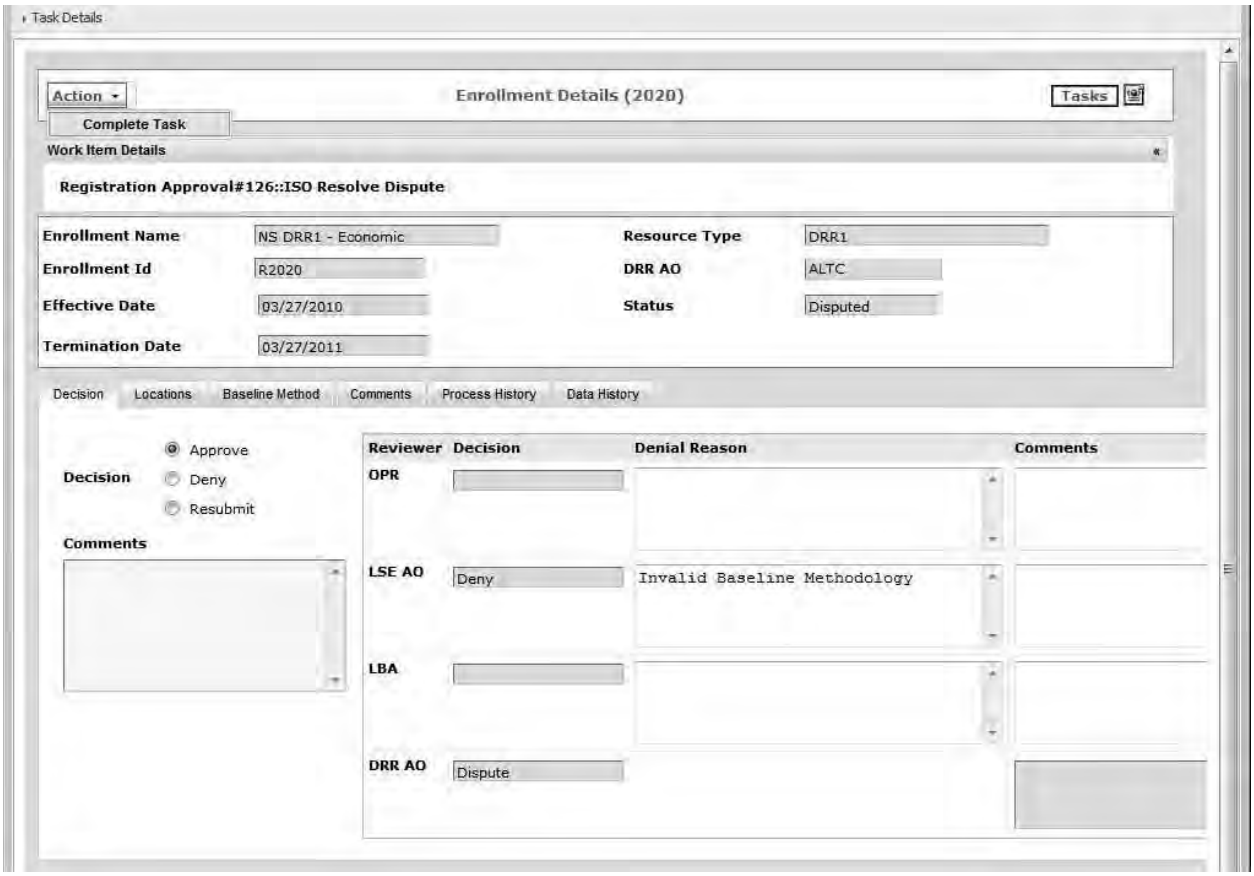


Figure 53: Enrollment – Midwest ISO Reviews Disputed Enrollment

When Midwest ISO retrieves the disputed work item from their task list, they will see who denied it, the reason code(s) and any comments made by the denier, who disputed it and any comments made by the disputer. At this stage Midwest ISO can:

1. Approve the enrollment, which will terminate the workflow process and change the status to “Confirmed”.
2. Deny the enrollment, which will terminate the workflow process and change the status to “Denied”.
3. Make changes and resubmit the enrollment which will route it back to the LBA and LSE AO for review.

4.14 Withdrawing Enrollments

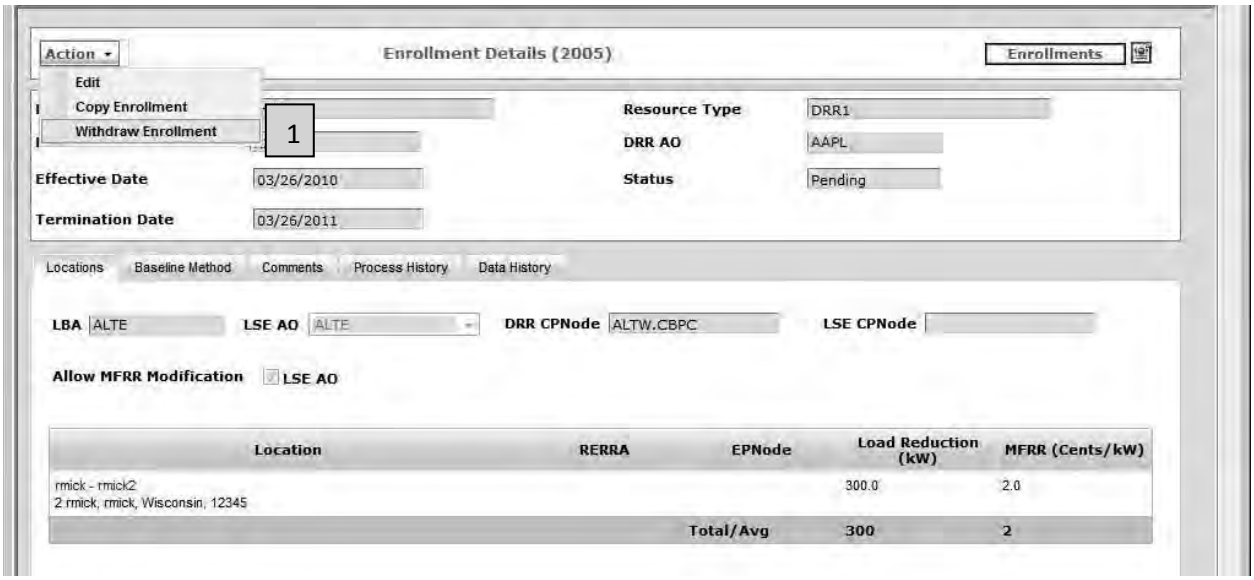


Figure 54: Enrollment - DRR AO Withdraws Pending Enrollment

The DRR AO (or Midwest ISO) can withdraw a "Pending" enrollment at any time by selecting "Actions → Withdraw Enrollment" (1). This will terminate the workflow process, removing all work items from all reviewers' task lists, and change the status to "Withdrawn".

4.15 Changing the Termination date of an enrollment

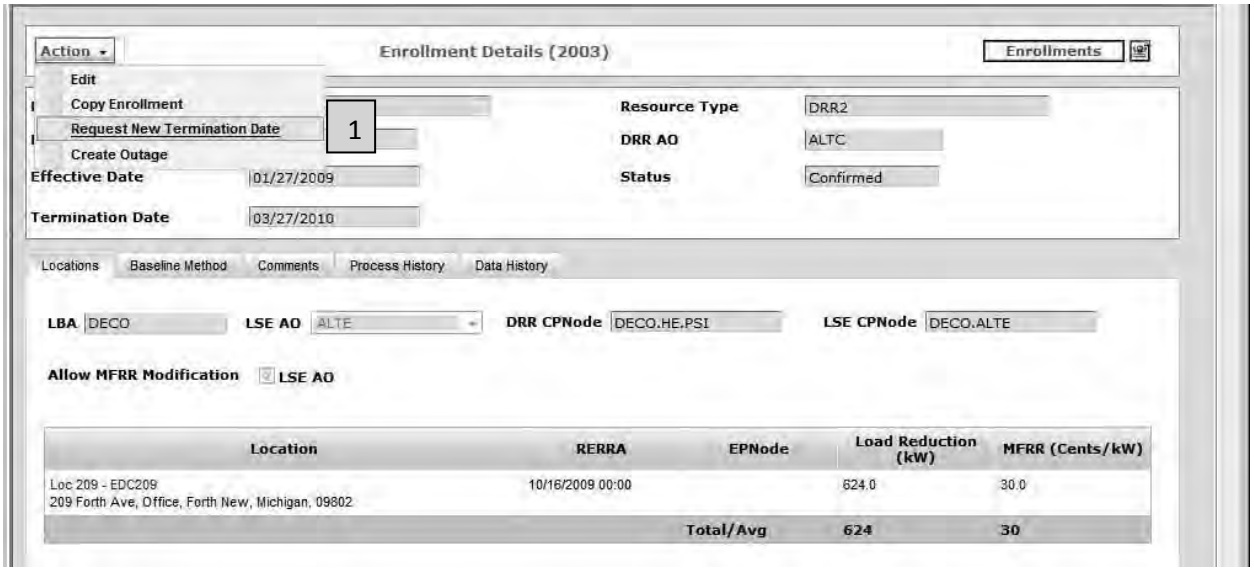


Figure 55: Enrollment - DRR AO Requests New Termination date

The DRR AO can change the termination date of a "Confirmed" enrollment by selecting "Actions → Request New Termination Date" (1). Two options are possible:

1. The DRR AO chooses a termination date that is earlier than the current termination date, in which case the new termination date is applied directly. The new termination date cannot be earlier than two business days in the future.
2. The DRR AO chooses a termination date that is later than the current termination date, in which case the request is routed to the LSE AO and LBA for approval. The workflow and approval durations are the same as for a normal enrollment. Once the request has been approved by the LSE AO and the LBA, the effective date on the enrollment will be updated to the requested date. The status of the enrollment will remain as "Confirmed" throughout this process.

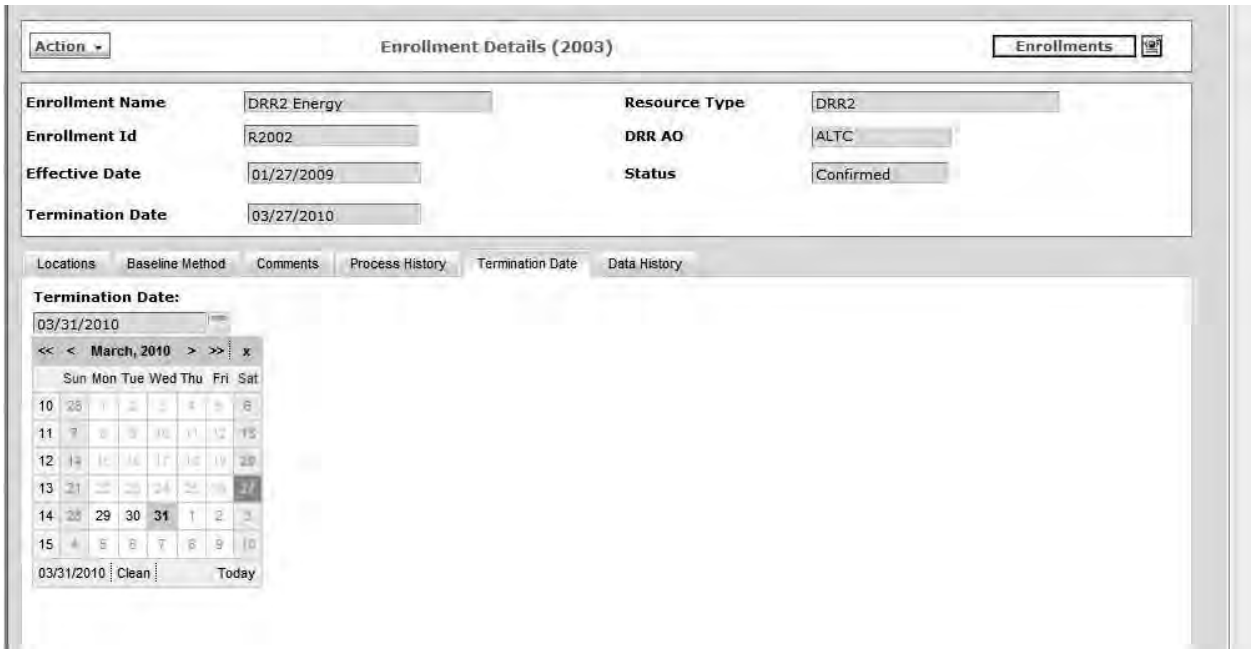


Figure 56: Enrollment - DRR AO Selects New Termination Date

4.16 Outages

Outages are used to exclude days from the CBL look-back period. They are created by the DRR AO (or the ISO) from the Enrollment screen. Outages can only be created for Enrollments that are "Confirmed".

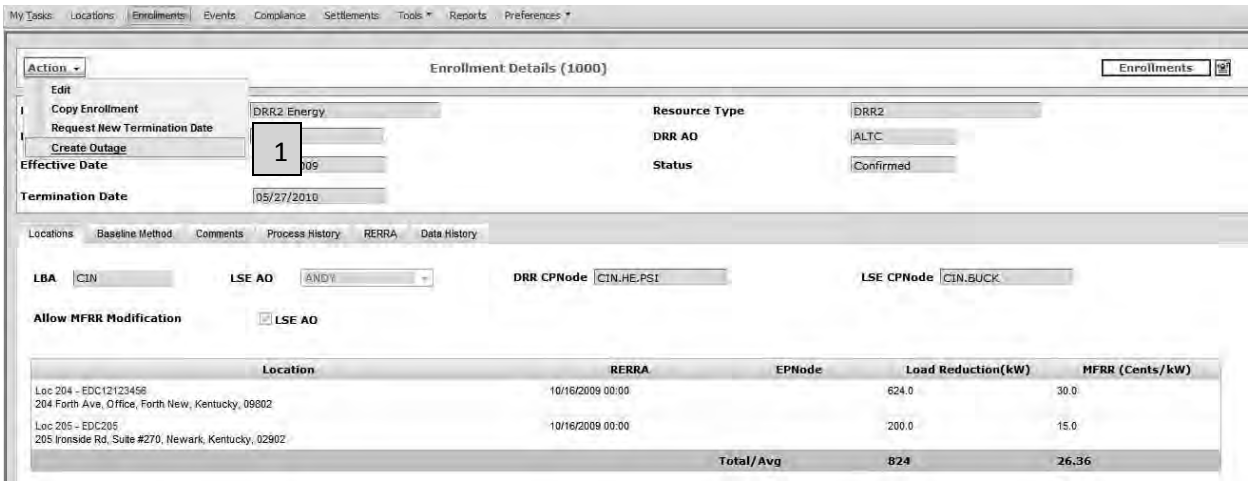


Figure 57: Enrollment – Create Outage

The DRR AO initiates the process by selecting Actions -> Create Outage (1), which will open the Resource Outage Details screen.

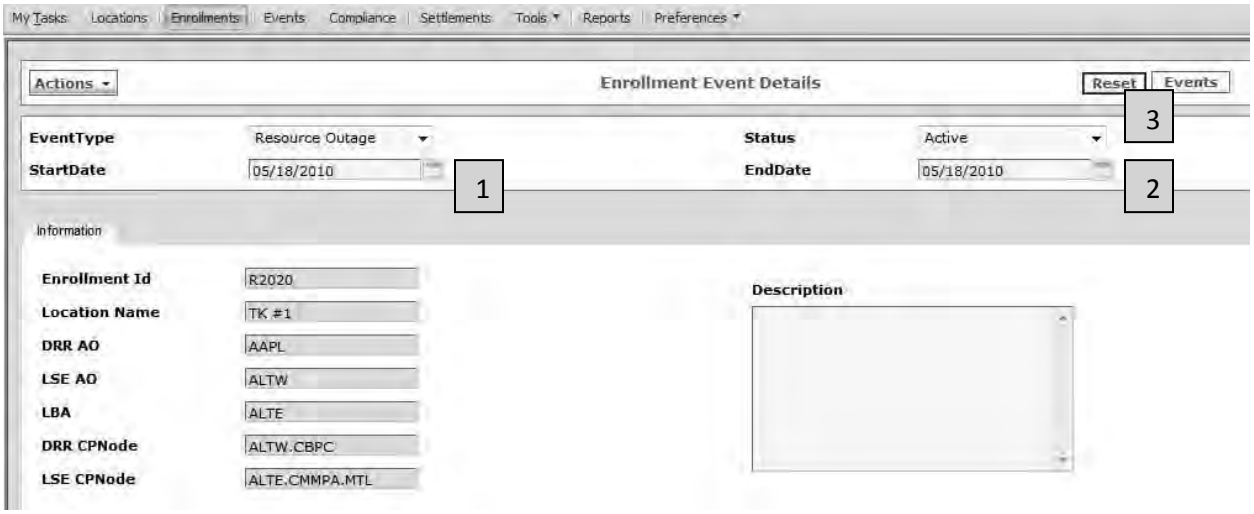


Figure 58: Enrollment – Outage Details

The DRR AO will select the start (1) and end (2) dates and status (3) of the outage followed by Actions -> Save. See the next section on Events for details of how to search for and view Resource Outage events once they have been created.

5 Events

Events are created in several ways:

1. The DRR AO can schedule load reduction activities using Midwest ISO's Market Management System, either in the Day Ahead (DA) or Real Time (RT) markets. Details of awards are bridged into DRT, and MMS notifies the DRR AO about demand response awards that clear.
2. Midwest ISO dispatches a resource via Real Time Dispatch or Synchronized Reserve.
3. The DRR AO creates an Outage for a resource.

Award and Dispatch events are defined at the DRR CPNode level; DRT converts CPNode level events into Settlement and Compliance records for each effective enrollment for a CPNode by means of the "End of Day" (EOD) job. The EOD job runs at the end of the operating day and performs a variety of tasks:

- It decomposes the CPNode event into its constituent enrollments and generates settlement records for each enrollment impacted by the event.
- It decomposes the CPNode event into its constituent enrollments and generates compliance records for each enrollment impacted by the event.
- It changes the status of past due settlement and compliance records to "Expired"

Outage events are defined at the Enrollment level, and are used to exclude outage days from the CBL look-back period.

5.1 Event Status

Status	Description
Settled	Event has been processed by the End of Day job and is ready for meter data submission, CBL calculation and validation.
Error	The Real Time or End of Day jobs encountered an error while processing the event. Events with this status should not occur in normal operation.
New	An event record has been created but processing by the End of Day job has not completed. Events with this status should not occur in normal operation.

5.2 Searching for Events

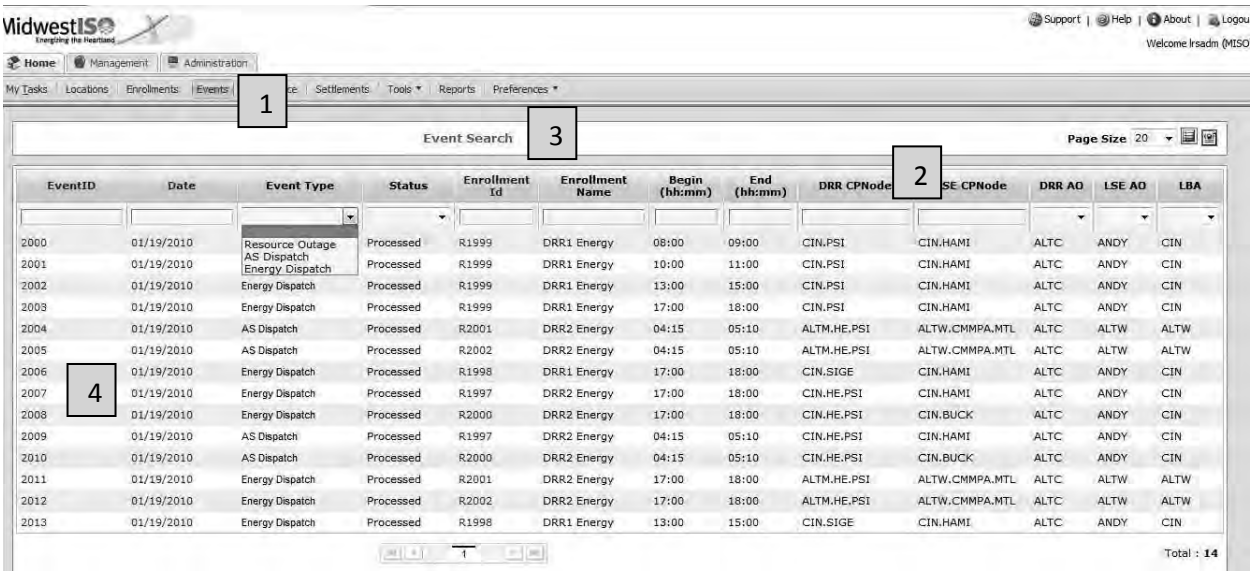


Figure 59: Events - Getting to and Searching for

Select the “Events” menu item (1) to get to the “Event Search” screen. This screen presents a list of events that you are authorized to view. You can filter the list by entering or selecting filter criteria in the fields with a yellow background (2), or sort it by clicking on a sort hyperlink (3). You can view the details of a specific event by clicking on the hyperlink in the “Event ID” or “Date” column (4).

5.3 Event Details

Energy Dispatch and AS Dispatch events are defined at the DRR CPNode level. Compliance and Settlement records are generated by the end of day job for each effective registration belonging to the CPNode.

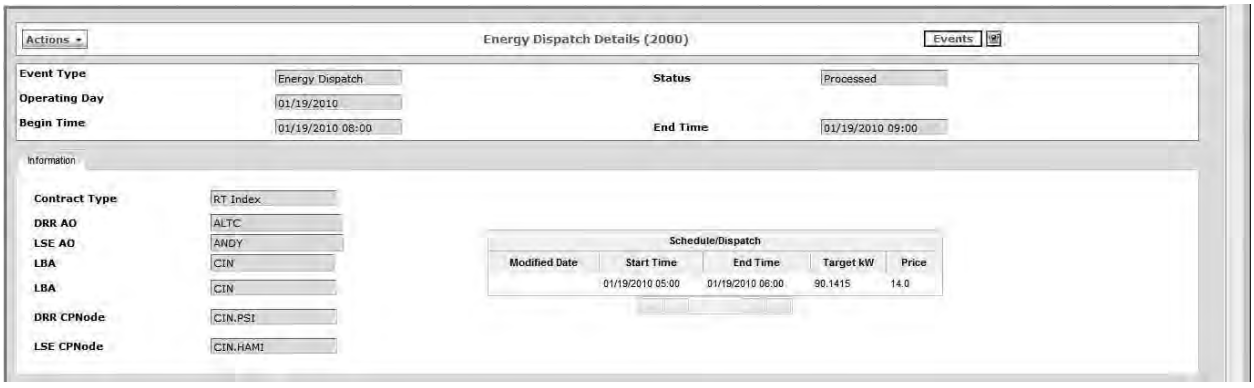


Figure 60: Events – Energy Dispatch

The Energy Dispatch Details screen will show the event date, start and ending times for the event and summary enrollment details. The schedule information from Midwest ISO's Market Management System is displayed in the Schedule/Dispatch section. These events can be found in the Search Event screen by filtering on the "Energy Dispatch" event type.

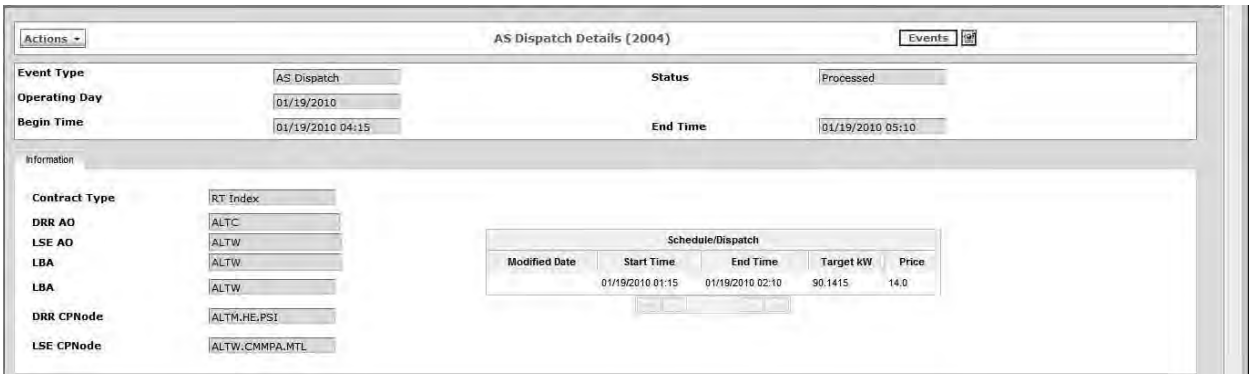


Figure 61: Events - Real Time Dispatch

The AS Dispatch event detail screen will show the event date, start and ending times for the event and summary enrollment details. The dispatch information from Midwest ISO's Market Management System is displayed in the Schedule/Dispatch section in the order they were received, so that re-dispatch history can be seen. These events can be found in the Search Event screen by filtering on the "AS Dispatch" event type.

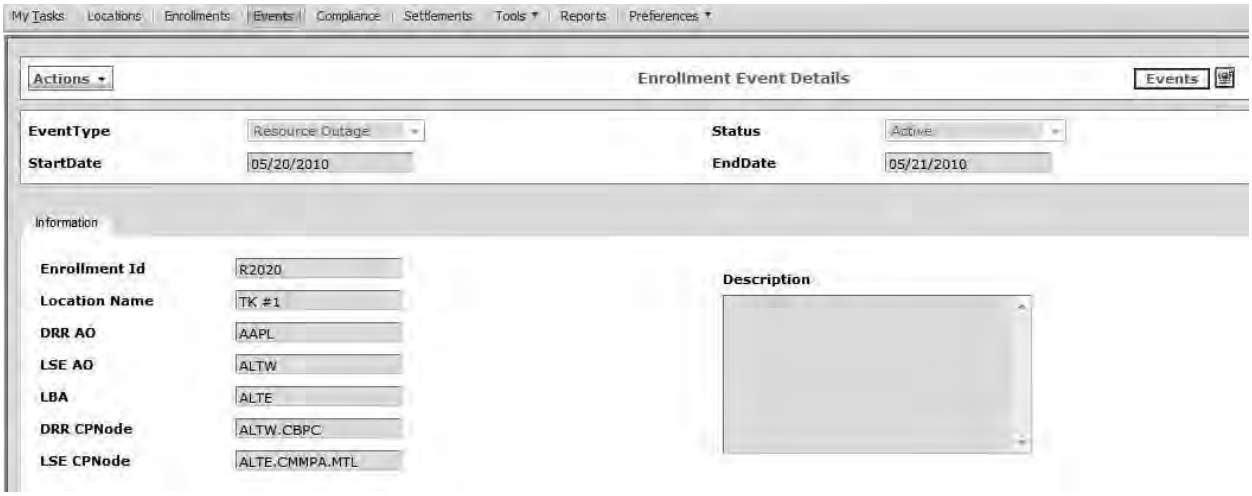


Figure 62: Events - Resource Outage

The Resource Outage event detail screen will show the event date, start and ending times for the event and summary enrollment details. These events can be found in the Search Event screen by filtering on the "Resource Outage" event type.

6 Meter Data and Calculated Baseline Load (CBL)

This section defines the details of the meter data that must be supplied by participants for uploading Settlement and Compliance data into the DRT system.

Two file formats are supported for submission of meter data: Daily and Interval. The daily file must always have 24 HE values. The interval file must have sufficient data for the reduction period, and can be hourly interval, minute interval, or start and stop times. For an enrollment that contains more than one location (aggregate), one set of entries should be provided for each location, unless otherwise specified.

The file to be submitted must be of type .xls, and can have an arbitrary name. The format of each file is described below. All meter data in the file should be in chronological order.

6.1 Daily File format

Column Header Name	Type	Definition	Example
Enrollment	Text, preceded by 'R' or 'r'.	DRT generated id for an enrollment.	R9999
Unique ID	Text.	LBA account number assigned to the location on the enrollment.	12345
Date	Date format m/dd/yyyy.	Date for which load is submitted.	6/01/2009
Type	Text.	Type of meter data.	See meter data submission types below.
UOM	Text.	Units of Measurement for meter data which must always be value = KW. (represents integrated energy consumption over the interval).	KW
HE1 through HE24	Integer	Meter value for each hour.	100,100….. 99

6.2 Interval File

Column Header Name	Type	Definition	Example
Enrollment	Text, preceded by 'R' or 'r'.	DRT generated id for an enrollment.	R9999
Unique ID	Text.	LBA account number assigned to the location on the enrollment.	12345
DateTime	Date Time format mm/dd/yyyy hh:mm:ss	Beginning date time for electricity consumption during the interval.	6/01/2009 13:26:23
Type	Text.	Type of meter data.	See meter data

			submission types below.
UOM	Text.	Units of Measurement for meter data which must always be value = KW. (represents integrated energy consumption over the interval).	KW
Value	Integer	Meter value for the interval.	100

6.3 Meter Data Submission types

This section describes the meter data types that can be submitted for each type of Enrollment program. Various types of meter data are supported:

1. ***HourlyLoad:*** Hourly load data used for economic energy settlements. This information will be used to calculate the CBL and to determine the actual load during an economic event. In case of an aggregate enrollment, the load must be provided for each location of the aggregate.
2. ***Compliance:*** Five Minute interval data used for compliance. This information will be used to calculate the CBL and to determine the actual load during an AS event. In case of an aggregate enrollment, the load must be provided for each location of the aggregate
3. ***HourlyCBL:*** CBL is calculated outside of the DRT system (designated as "Manual" CBL on the enrollment) by the participant. In the case of an aggregate enrollment, the aggregate CBL should be provided as a submission for one of the locations.
4. ***HourlyGen:*** Generation meter data information will be used to determine the quantity of economic load reduction as designated on the enrollment form. In the case of an aggregate enrollment, there must be generation values for each location.
5. ***HourlyDLC:*** Hourly load reduction based on statistical sample approved by ISO, the number of active sites controlled and weather conditions during the event.

6.4 Meter Data Submission types by CBL

This section describes the meter data submission types that must be used for each CBL method:

Baseline Type	Submission Type	Reading Type	Dispatch Type	Settlement or Compliance
Manual	HourlyLoad HourlyCBL	KW	Energy	Settlement
DLC	HourlyDLC	KW	Energy	Settlement
Generation Prior Hours	HourlyGen	KW	Energy	Settlement
10 in 10	HourlyLoad	KW	Energy	Settlement
10 in 10 with SLA	HourlyLoad	KW	Energy	Settlement
10 in 10 with WSA	HourlyLoad	KW	Energy	Settlement
	Compliance	KW	Operating Reserves	Compliance

7 Settlements

The normal sequence for the settlement process is as follows:

1. At the end of the operating day, DRT generates "Submit data" settlement tasks for each effective enrollment.
2. The DRR AO selects each "Submit data" task, uploads meter data, calculates the CBL and submits each task for review.
3. The LSE AO reviews each settlement task and confirms it.
4. Midwest ISO reviews each settlement task and confirms it.
5. DRT sends confirmed settlement details to Midwest ISO's settlement system.

The LSE AO or Midwest ISO may deny the settlement in which case it will be routed back to the DRR AO. The DRR AO can make changes and re-submit or dispute the denial. If the settlement is resubmitted, it will be routed back to the LBA, LSE AO and ISO for review.

If the settlement is disputed it will be routed to Midwest ISO to make a final decision on the status.

Timeline:

1. The time limits for a DRR AO to submit meter data for load curtailment activities are as follows:
    a. ***Dispatched Energy:*** Up to 103 calendar days from the event date. An alert will be generated after 93 calendar days. The settlement will be expired after 103 days.
    b. ***Ancillary Services:*** 5 calendar days from the event date.
2. The LSE AO must review the settlement within 10 business days, after which it will be auto-confirmed. An alert will be generated after 8 business days.
3. If a settlement is denied by the LSE AO or Midwest ISO, the DRR AO can edit and resubmit the existing settlement within 10 business days after which the settlement will be auto denied. The LSE AO has 5 business days to review an existing settlement that has been resubmitted, after which it will be auto-confirmed. There is no limit on the number of times a settlement can be denied and resubmitted.
4. If a settlement is disputed by the DRR AO, the DRR AO must submit a market dispute via the Market Portal.
5. Settlements will not be generated until after the operating day.

Use Case:

The "happy path" sequence for processing settlements is as follows:

1. The End of Day job runs after the end of the operating day and creates settlement records for each event that impacts an effective enrollment.
2. The DRR AO reviews "My Tasks" in DRT to see if there are any Settlement tasks with a work step of "Submit Data".
3. The DRR AO selects a settlement record to process, uploads meter data, calculates CBL, and submits the settlement, which routes it to the LSE AO and Midwest ISO for review.
4. The LSE AO and Midwest ISO check "My Tasks" or Alerts to see if there are any settlements that need to be reviewed.

5. The LSE AO reviews relevant settlement details and approves.
6. Midwest ISO reviews the settlement and approves.
7. DRT sets the settlement status to "Confirmed" and bridges the settlement details to Midwest ISO's settlements and billing system.

Alternate Path 1: LSE AO or Midwest ISO denies Settlement

Repeat steps 1 – 4 of the happy path scenario:

1. The LSE AO or Midwest ISO denies the settlement and supplies relevant denial reasons and a comment. The settlement is routed back to the DRR AO for review.
2. The DRR AO makes corrections to the Settlement, and resubmits it.
3. The Settlement returns to step 4 in the happy path scenario.

Alternate Path 2: DRR AO disputes Settlement

Repeat steps 1 – 4 of the happy path scenario:

1. The LSE AO or Midwest ISO denies the settlement and supplies relevant denial reasons and a comment. The settlement is routed back to the DRR AO for review.
2. The DRR AO disputes the Settlement which is routed to Midwest ISO for review.

The same process is used for making adjustments.

7.1 Settlement Status

Status	Description
Incomplete	The Settlement record has been processed by the End of Day batch processing job and is ready for meter data submission and CBL calculation by the DRR AO.
Pending	Settlement has been submitted by the DRR AO, and is pending confirmation by the LBA, LSE AO and ISO.
Confirmed	Settlement has been confirmed by the LBA, LSE AO and ISO.
Denied	Settlement has been denied by the LBA, LSE AO or ISO.
Disputed	Denied Settlement has been disputed by the DRR AO and referred to ISO for resolution.
Expired	The time period for submission of the settlement has elapsed, and the settlement can no longer be submitted.

7.2 Generate Settlement Tasks

At the end of the operating day a batch job on DRT will create settlement records for each qualifying event.

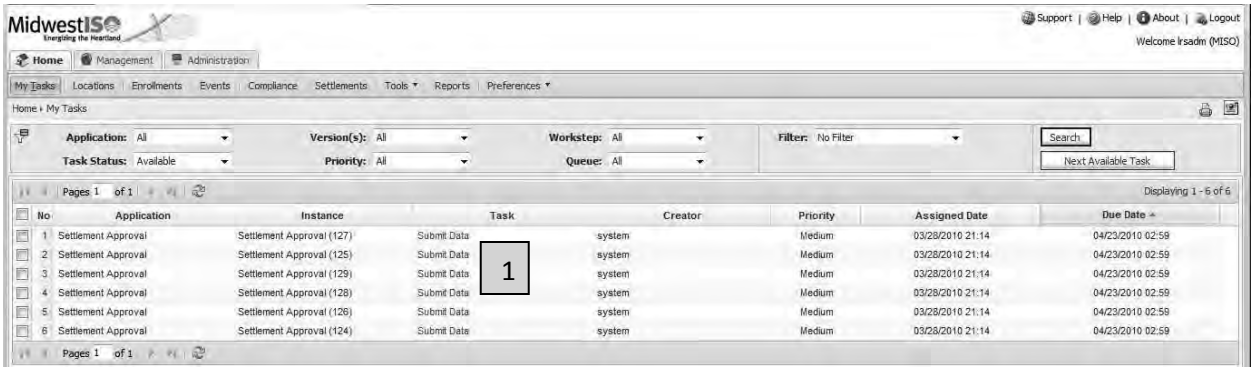


Figure 63: Settlements - Submit Data task

Once the batch job has completed, there will be Settlement Approval “Submit Data” work items (1) in the DRR AO’s task list.

7.3 Searching for Settlements

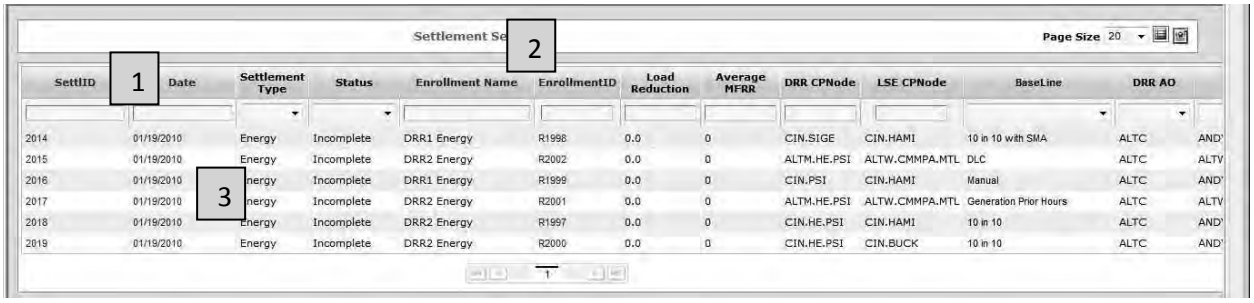


Figure 64: Settlement - Search

Select the “Settlements” menu item to get to the “Settlement Search” screen. This screen presents a list of settlements that the user is authorized to view. You can filter the list by entering or selecting filter criteria in the fields with a yellow background (1), or sort it by clicking on a sort hyperlink (2). You can view the details of a specific settlement by clicking on the hyperlink in the “Date” column (3).

7.4 Submit Meter Data

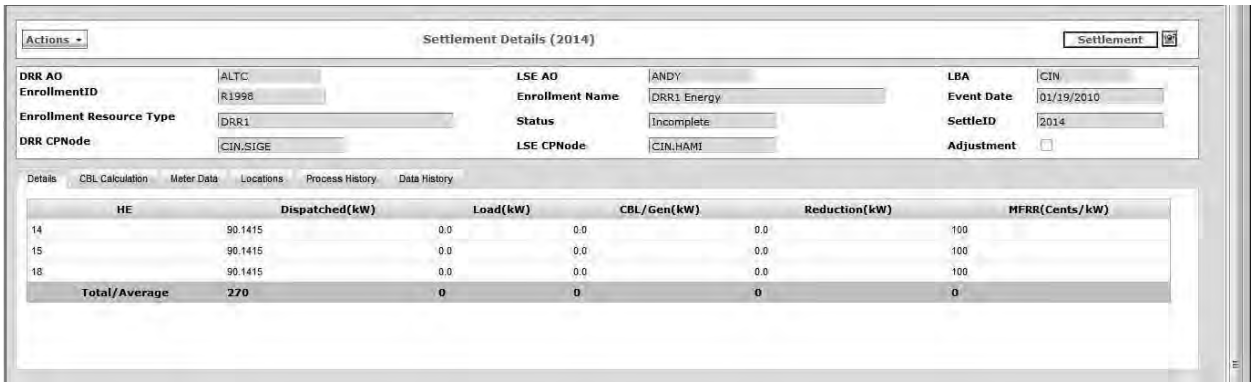


Figure 65: Settlement – Details

When a “Submit Data” link is selected from the task list, the DRR AO will be presented with a summary of the settlement hours and schedules for the enrollment and event day.

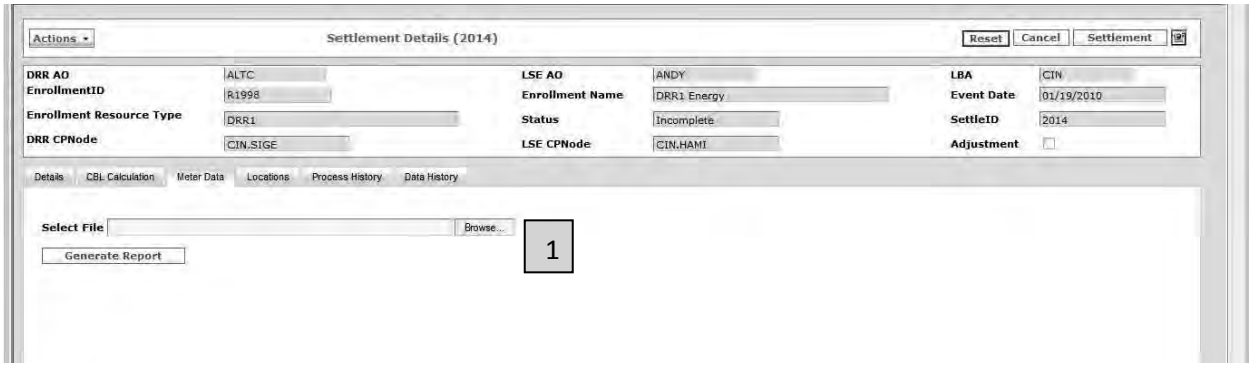


Figure 66: Settlement - Submit Meter Data

In order to complete the enrollment the DRR AO must supply meter data, which is done by selecting the “Meter Data” tab followed by the “Browse” button (1).

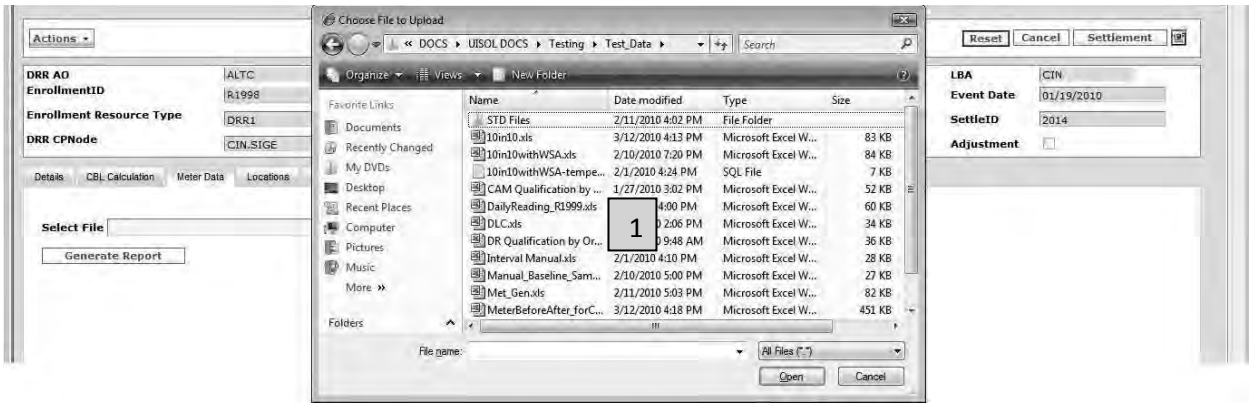


Figure 67: Settlement - Select File to Upload

The DRR AO is presented with a "Choose file to upload" dialog screen (1). The DRR AO should navigate to the location of the previously prepared meter data file (see *Section 6, Meter Data and Customer Baseline Load (CBL)* for details), select the relevant file and click on the "Open" button, which will upload the file to DRT.

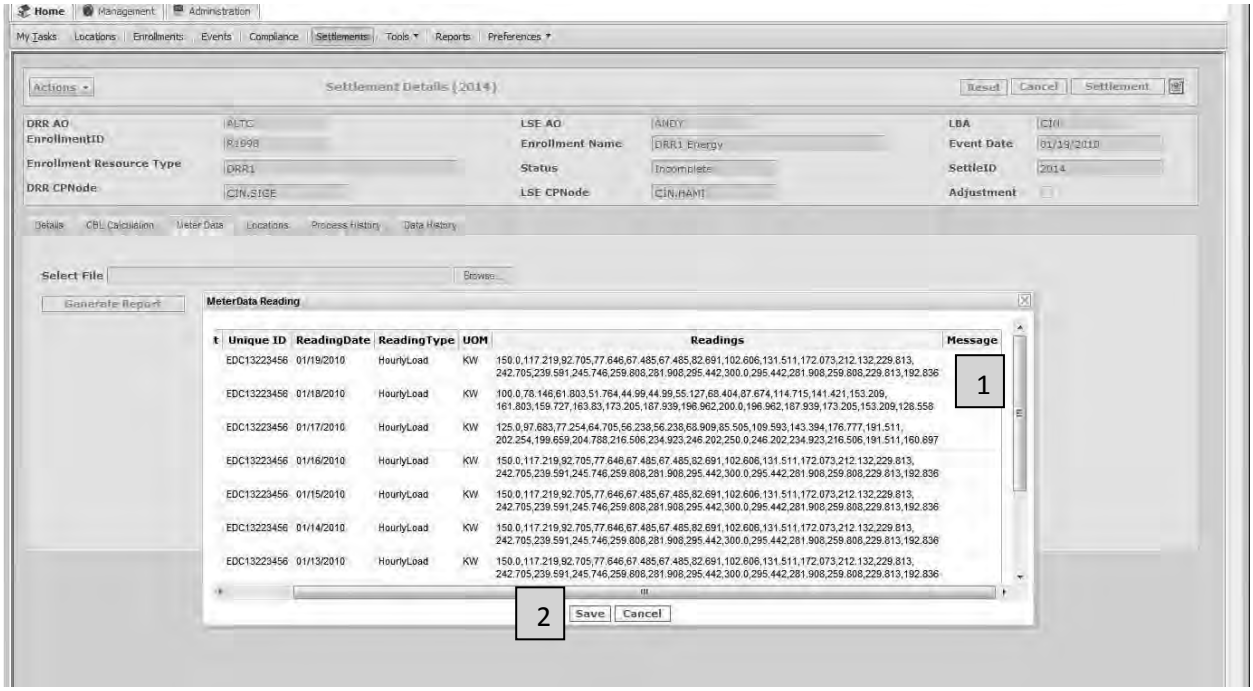


Figure 68: Settlement - Review Submitted Meter Data

Once the file upload has completed the DRR AO will be presented with a "Meter Data Reading" dialog screen showing the uploaded data. If the meter values are valid there will be no messages in the Messages column (1) and there will be a "Save" button (2) at the bottom of the dialog screen.

If the meter values contain errors there will be a message in the Messages column with details of the error, and there will be no "Save" button at the bottom of the dialog screen, so the meter data cannot

be uploaded. The error should be corrected and the meter data uploaded. Note that there may be multiple pages of data, so it may be necessary to scroll through the pages to find the error message.

Figure 69: Settlement - Meter Data Submission Status

Once meter data has been successfully imported into DRT a “Successfully Saved Data” status message(1) will be displayed. If the meter data is required at a future time or another user wishes to see it, it can be downloaded from DRT by selecting the “Generate Report” button (2).

7.5 Calculate CBL

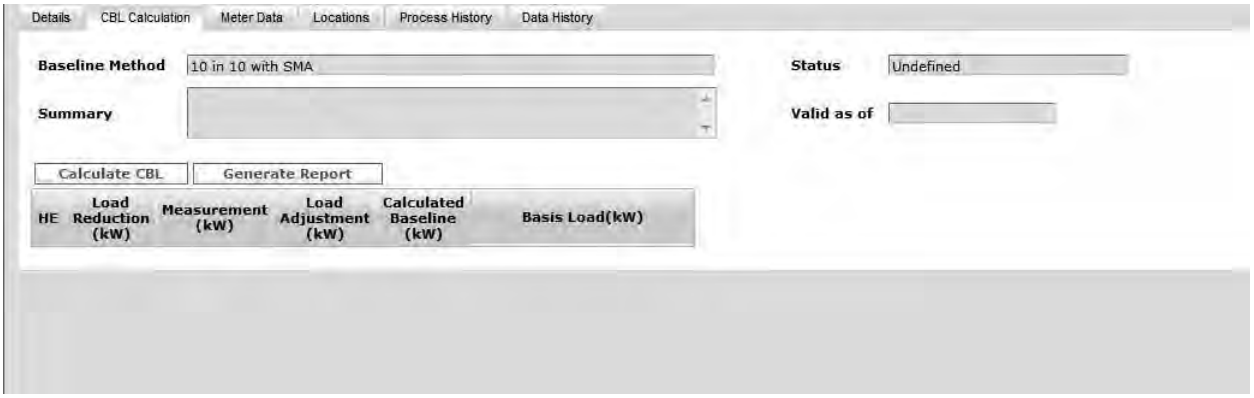


Figure 70: Settlement - Calculate CBL

Once meter data has been uploaded, the CBL for the settlement must be calculated. This is done by selecting the “CBL Calculation” tab, which will have no entries in the CBL summary table if the CBL has not yet been calculated.

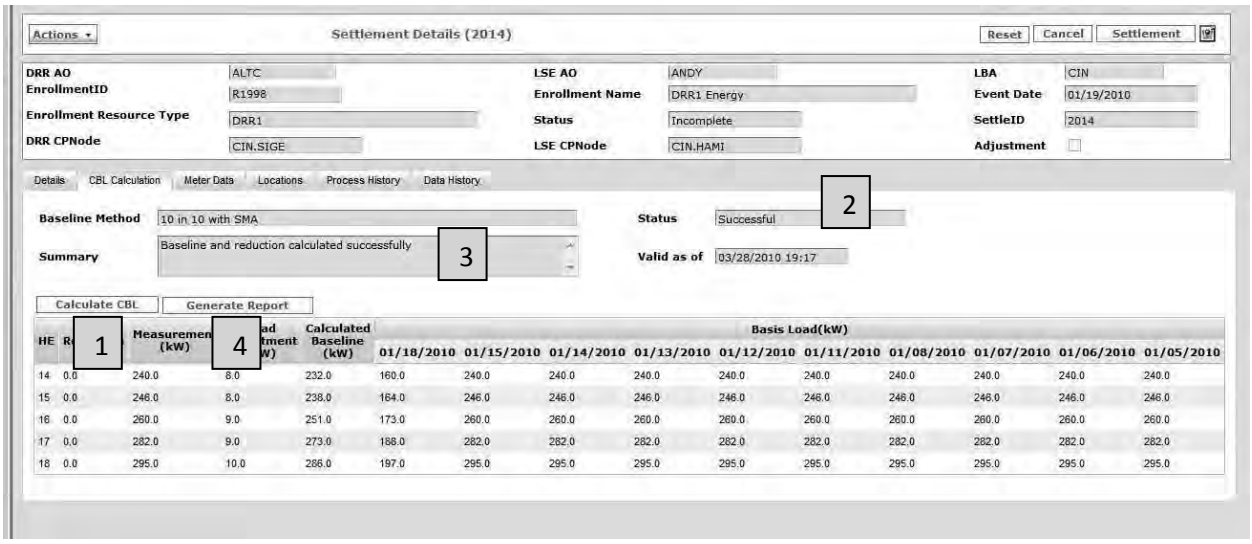


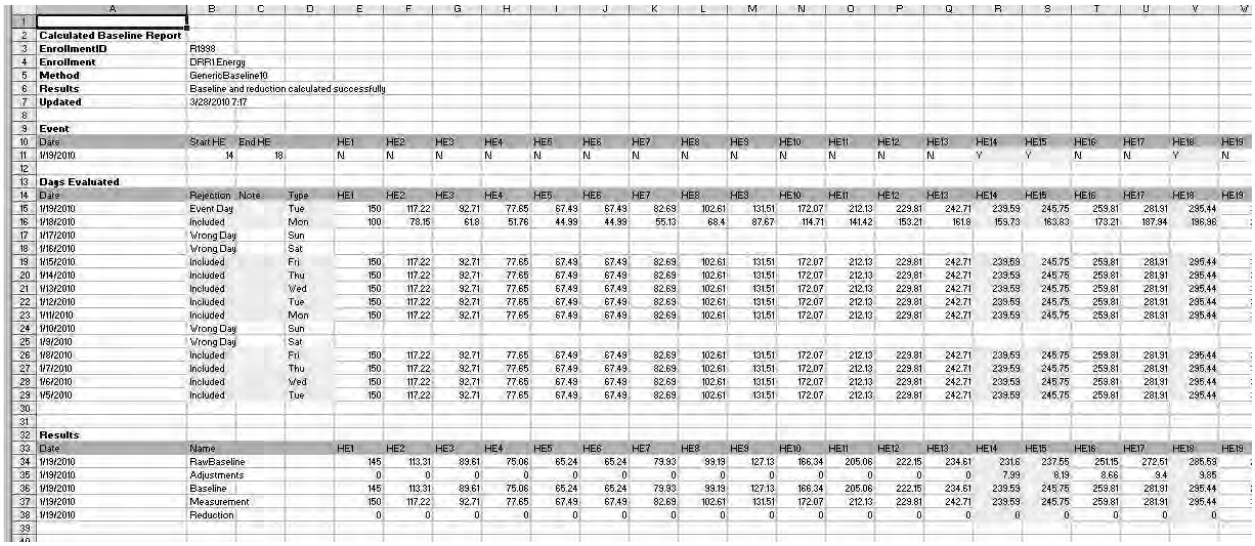
Figure 71: Settlement - Review CBL Summary

The DRR AO can generate the CBL by selecting the “Calculate CBL” button (1). If this is successful the Status will show “Successful”(2) and the Summary will show “Baseline and reduction calculated successfully”(3). If there is a problem the summary will indicate what the problem is (e.g. missing meter data for 6/16/2009). The DRR AO will have to correct the problem and recalculate the CBL.

There are a number of business rules for CBL calculations:

1. Rules for not selecting a day as a basis day
    a. Wrong day type
    b. Resource Outage
2. 10 in 10 baseline methods use three day types: Weekdays (Mon – Fri), Saturday, Sunday
3. NERC holidays are treated as a Sunday.
4. CBL’s with weather sensitive adjustments (WSA) apply an adjustment to the baseline based on the prevailing temperature at the time of the event. Weather data must be available for the event in order for the calculation to be performed.
5. CBL’s with symmetric multiplicative adjustments (SMA) apply an adjustment to the baseline based on the average of the meter data four hours prior to the hour before the event. Verify that the calculation is correct and has been applied to the baseline. Note that SAA cannot be used if the event occurs earlier than 5 am.

If additional meter data is submitted at a future data, the CBL can be recalculated by selecting the “Calculate CBL” button, although this will also be done automatically by the “Performance Calculation” job.



1																							
2	**Calculated Baseline Report**																						
3	**EnrollmentID**	R1998																					
4	**Enrollment**	DRR1 Energy																					
5	**Method**	GenericBaseline10																					
6	**Results**	Baseline and reduction calculated successfully																					
7	**Updated**	3/28/2010 7:17																					
8																							
9	**Event**																						
10	Date	Start HE	End HE		HE1	HE2	HE3	HE4	HE5	HE6	HE7	HE8	HE9	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19
11	1/19/2010	14	18		N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	Y	N
12																							
13	**Days Evaluated**																						
14	Date	Rejection	Note	Type	HE1	HE2	HE3	HE4	HE5	HE6	HE7	HE8	HE9	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19
15	1/19/2010	Event Day		Tue	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
16	1/18/2010	Included		Mon	100	78.15	61.8	51.76	44.99	44.99	55.13	68.4	87.67	114.71	141.42	153.21	161.8	159.73	163.83	173.21	187.94	196.96	
17	1/17/2010	Wrong Day		Sun																			
18	1/16/2010	Wrong Day		Sat																			
19	1/15/2010	Included		Fri	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
20	1/14/2010	Included		Thu	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
21	1/13/2010	Included		Wed	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
22	1/12/2010	Included		Tue	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
23	1/11/2010	Included		Mon	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
24	1/10/2010	Wrong Day		Sun																			
25	1/9/2010	Wrong Day		Sat																			
26	1/8/2010	Included		Fri	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
27	1/7/2010	Included		Thu	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
28	1/6/2010	Included		Wed	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
29	1/5/2010	Included		Tue	150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
30																							
31																							
32	**Results**																						
33	Date	Name			HE1	HE2	HE3	HE4	HE5	HE6	HE7	HE8	HE9	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19
34	1/19/2010	RawBaseline			145	113.31	89.61	75.06	65.24	65.24	79.93	99.19	127.13	166.34	205.06	222.15	234.61	231.6	237.55	251.15	272.51	285.53	
35	1/19/2010	Adjustments			0	0	0	0	0	0	0	0	0	0	0	0	0	7.99	8.19	8.66	9.4	9.85	
36	1/19/2010	Baseline			145	113.31	89.61	75.06	65.24	65.24	79.93	99.19	127.13	166.34	205.06	222.15	234.61	239.59	245.75	259.81	281.91	295.44	
37	1/19/2010	Measurement			150	117.22	92.71	77.65	67.49	67.49	82.69	102.61	131.51	172.07	212.13	229.81	242.71	239.59	245.75	259.81	281.91	295.44	
38	1/19/2010	Reduction			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
39																							

Figure 72: Settlement - Review CBL Detailed Report

A summary of the CBL results is shown on the CBL calculation tab. A detailed report showing how the CBL was calculated can be generated by selecting the "Generate Report" button (4 in Figure 72).

7.6 Submit Settlement

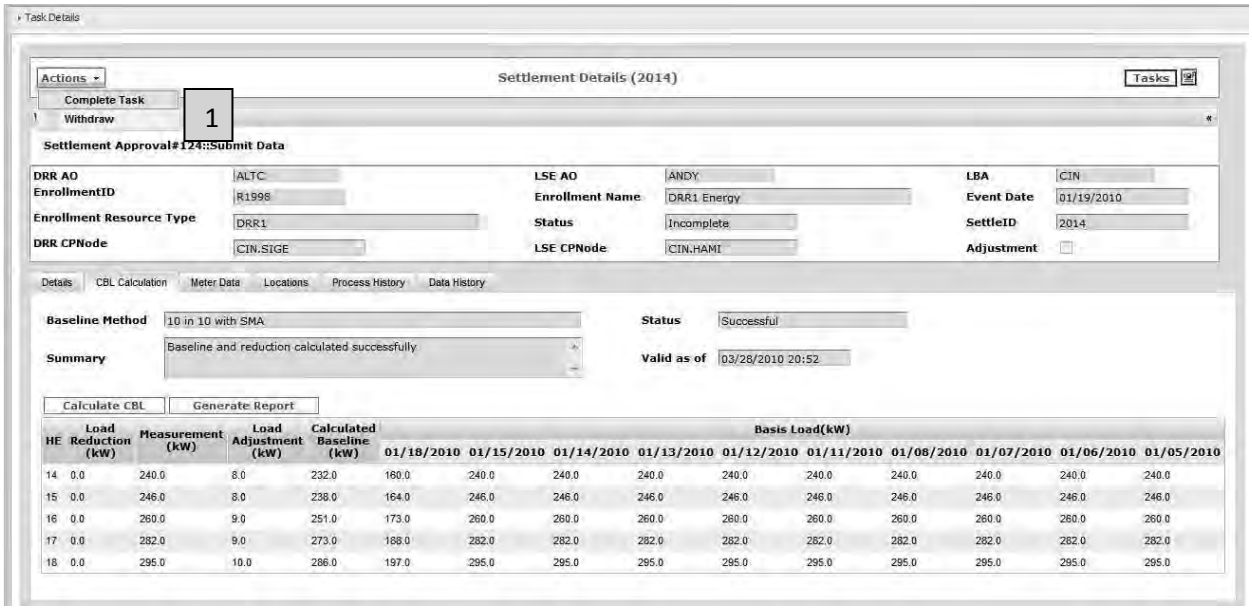


Figure 73: Settlement – DRR AO Submits Settlement

Once the DRR AO has successfully calculated the CBL, the settlement can be submitted for review by the LSE AO and LBA by selecting "Actions → Complete Task" (1). This will change the status of the Settlement to "Pending" and route it to the LBA and Midwest ISO for review. Note that if you go to an

"incomplete" settlement from the settlement search screen you cannot submit the settlement – this must be done by starting from your task list. If you are in a settlement and select "Edit" followed by "Save" – this simply saves your information without submitting it for review to the LBA and LSE AO.

7.7 Reviewing Settlements

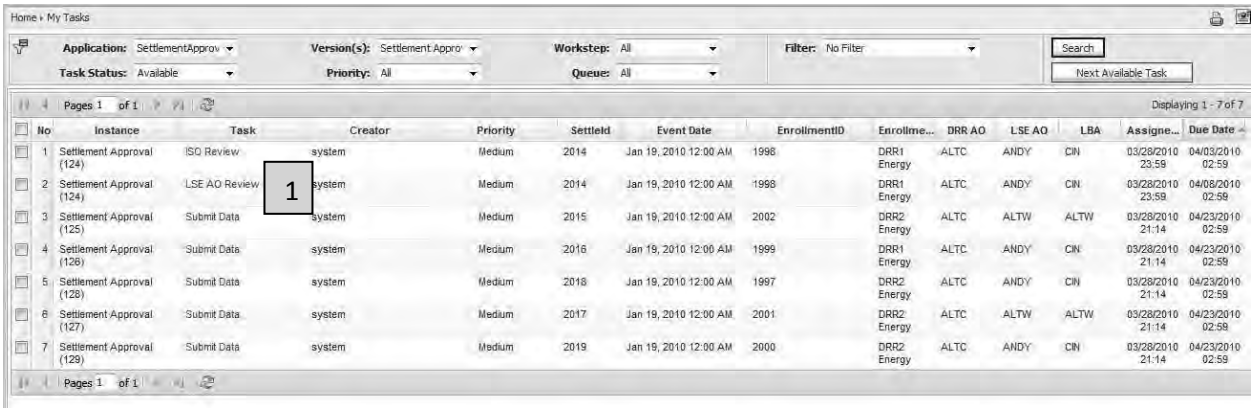


Figure 74: Settlement - LSE AO / LBA Selects Settlement to Review

When the LSE AO for the settlement logs into DRT, they will receive a “Settlement Approval” work item for “LSE AO AO Review”.

The LSE AO must select the relevant hyperlink (1) in the “Task” column which will take them to the review screen.

7.7.1 Confirming Settlements

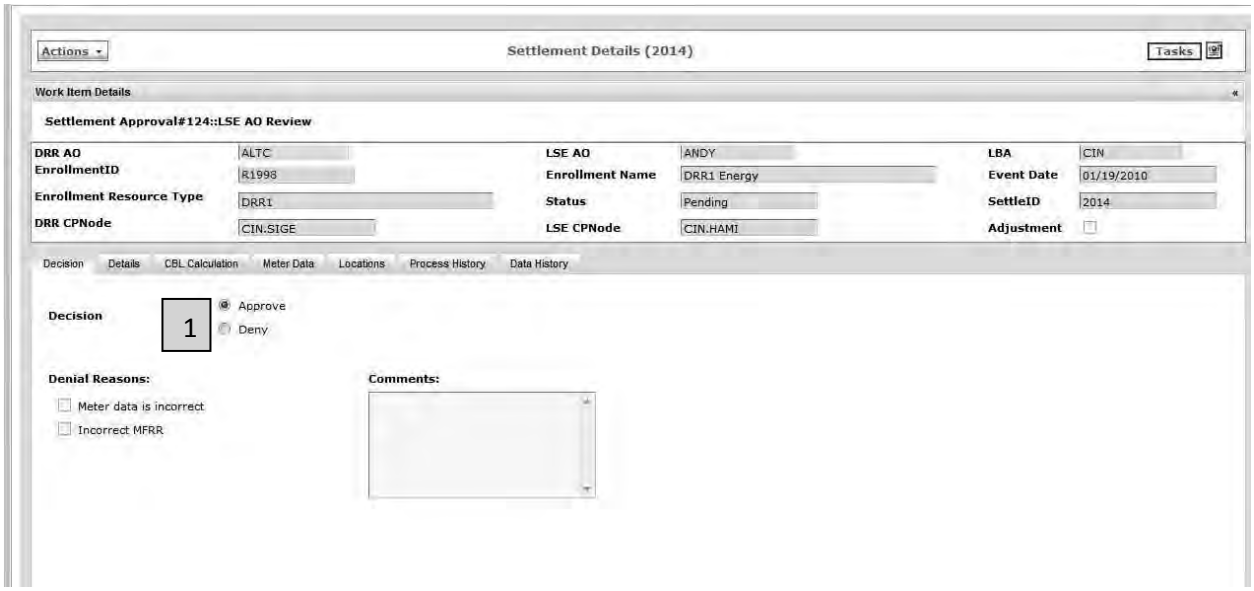


Figure 75: Settlement - LSE AO Confirm Settlement

The LSE AO will be presented with the "View Settlement" screen, but it will have an extra tab labeled "Decision". If the LSE AO wishes to confirm the settlement, they will select the "Approve" radio button, then selecting "Actions → Complete Task". This will remove the work item from the user's task list.

The LSE AO may change the MFRR if they wish.

7.7.2 Denying Settlements

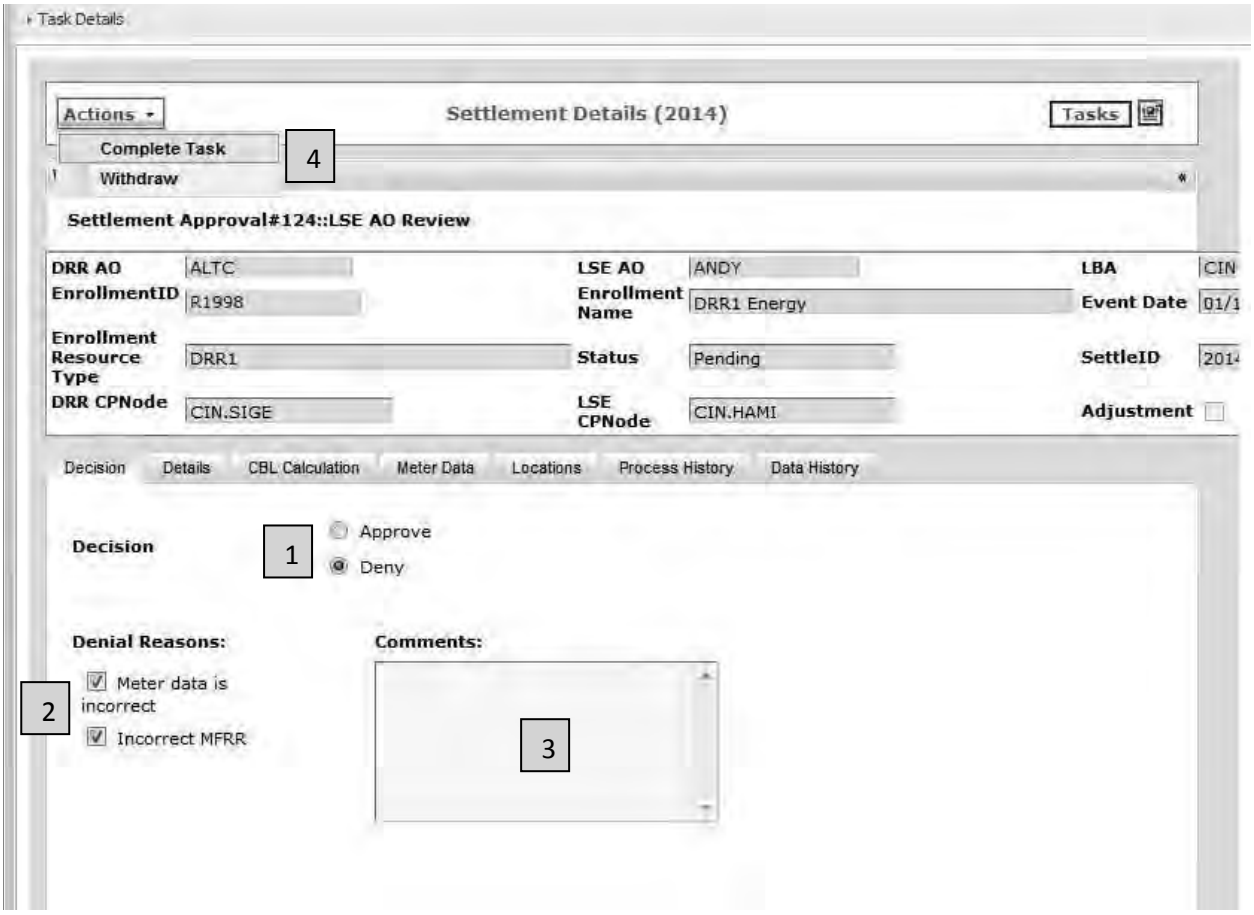


Figure 76: Settlement - LBA / LSE AO Deny Settlement

If the LBA or LSE AO wishes to deny the settlement, they will select the “Deny” radio button(1), select Denial Reasons (2), add a comment (3) and then select “Action → Complete Task” (4). This will remove the work item from the all user’s task lists and route the request back to the DRR AO.

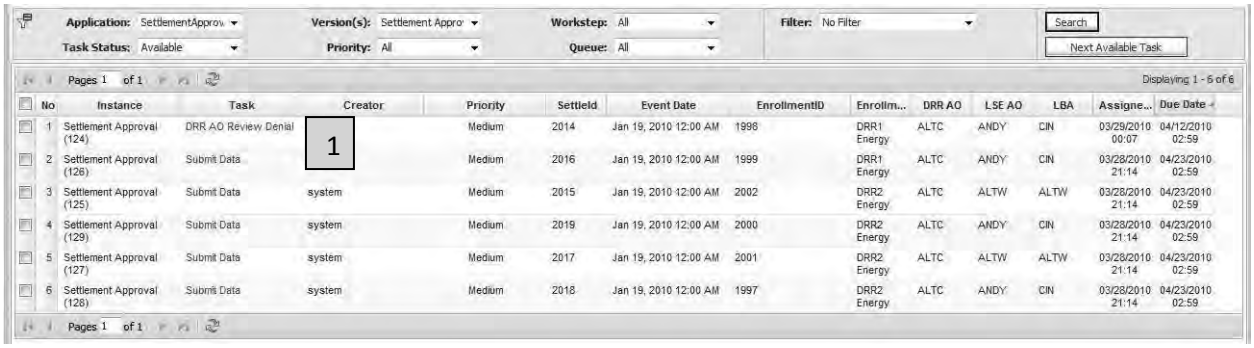


Figure 77: Settlement - DRR AO Selects Denied Settlement

When the DRR AO retrieves the “DRR AO Review Denial” work item from their task list (1), they will see who denied it, the reason code(s) and any comments made by the denier.

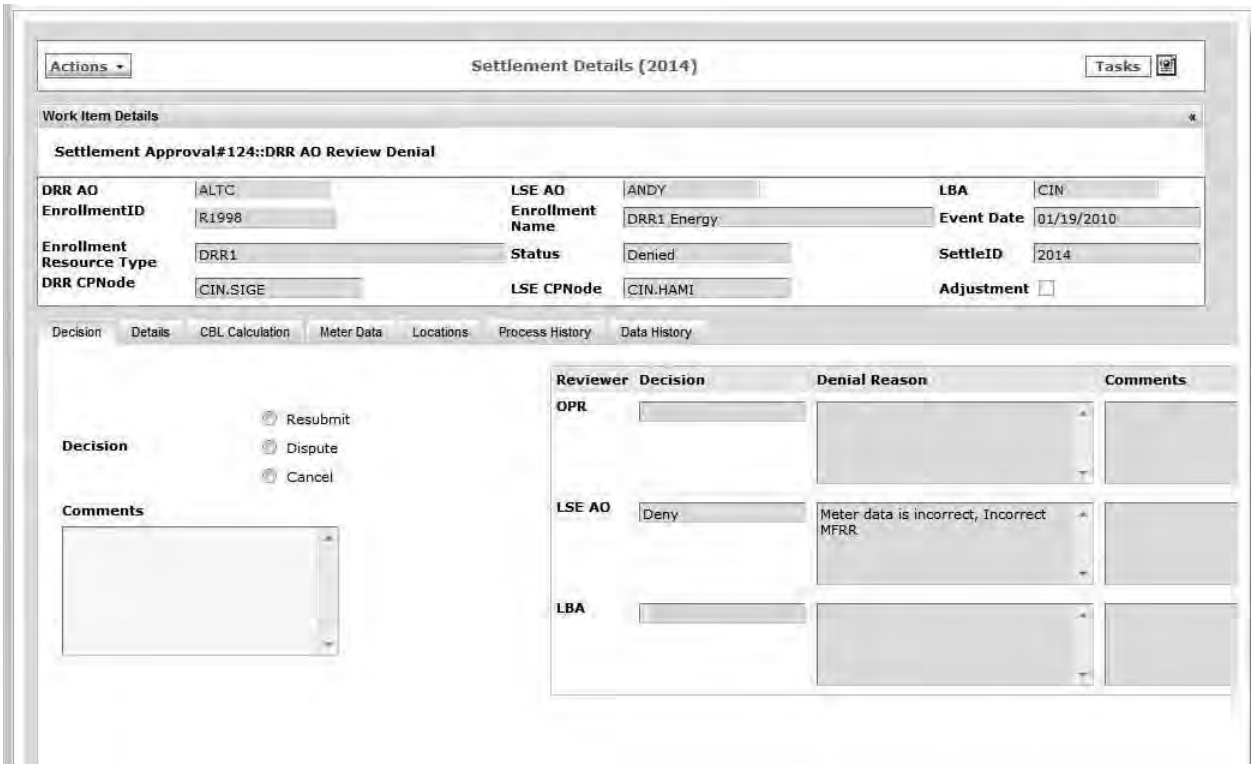


Figure 78: Settlement - DRR AO Reviews Denied Settlement

At this stage the DRR AO can:

1. Make changes to the settlement and resubmit it, in which case it will be routed back to the LSE AO for review.
2. Dispute the denial, in which case it is routed to Midwest ISO to make a decision.
3. Cancel in which case the workflow process will be terminated and the status will remain as “Denied”.

7.7.3 Disputing Settlements

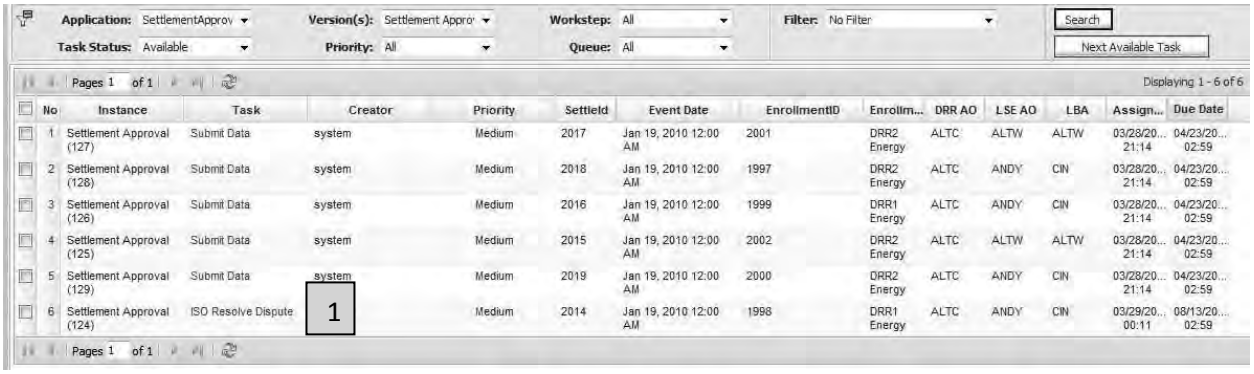


Figure 79: Settlement – Midwest ISO Selects Disputed Settlement

If a settlement is disputed it will appear in ISO's task list as an "ISO Resolve Dispute" work step (1).

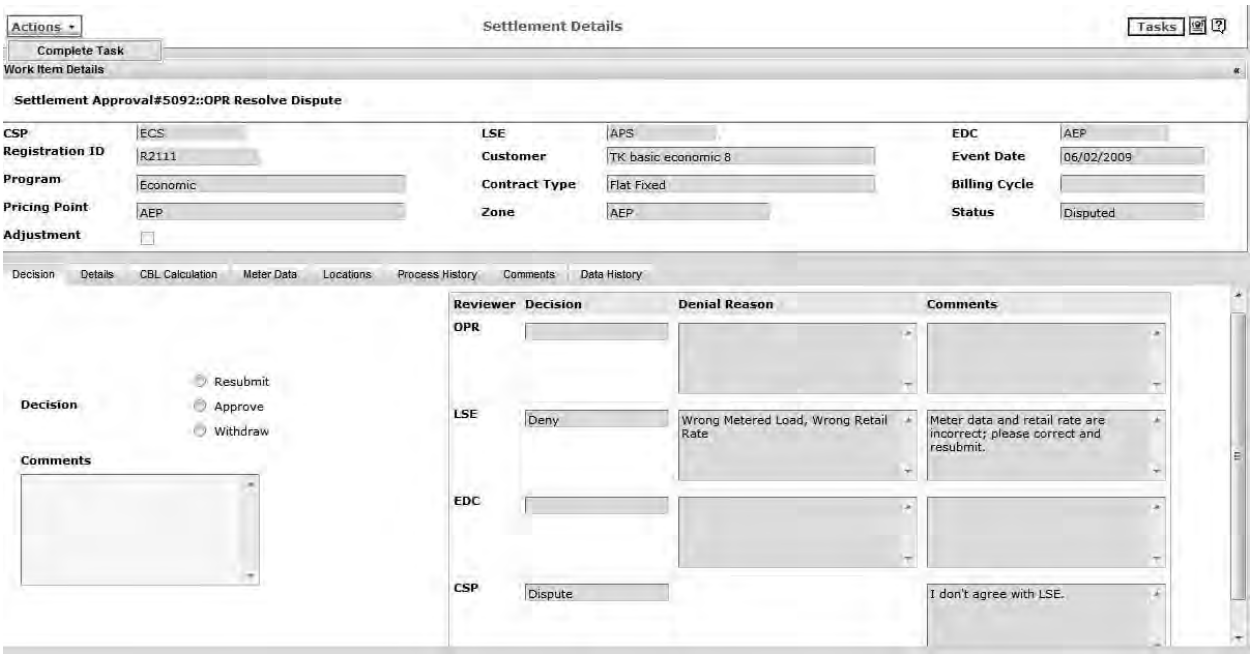


Figure 80: Settlement – Midwest ISO Reviews Disputed Settlement

When Midwest ISO retrieves the disputed work item from their task list, they will see who denied it, the reason code(s) and any comments made by the denier, who disputed it and any comments made by the disputer. At this stage Midwest ISO can:

1. Make changes and resubmit the settlement which will route it back to the LBA and LSE AO for review.

2. Approve the settlement, which will terminate the workflow process and change the status to "Confirmed".
3. Deny the settlement, which will terminate the workflow process and change the status to "Denied".

7.8 Adjusting Settlements

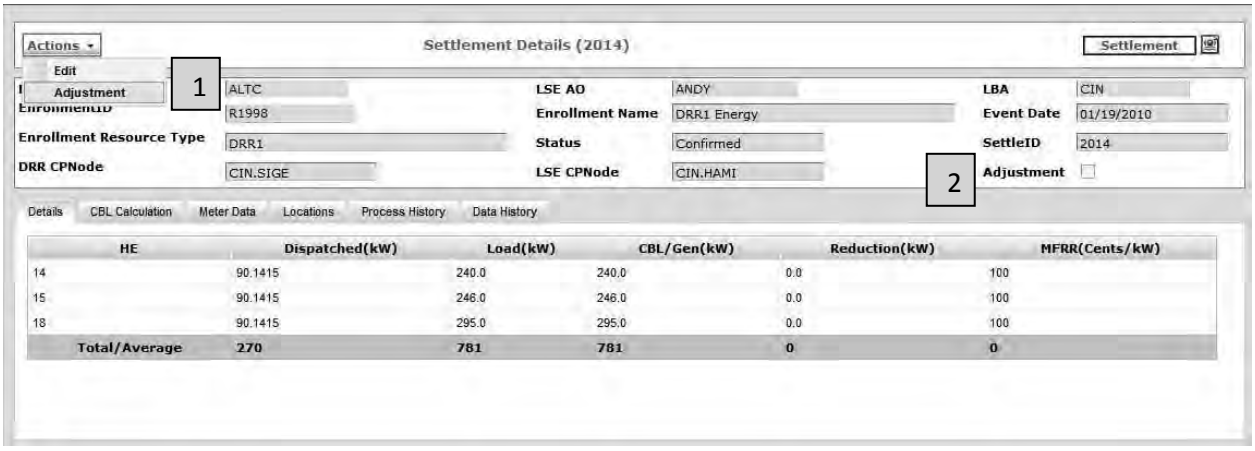


Figure 81: Settlement - DRR AO Adjusts Confirmed Settlement

Once a settlement has been confirmed by all parties and its status changes to "Confirmed" it is sent to Midwest ISO's settlements and billing system (POP). Any further changes to the settlement must be handled through the adjustment process which is initiated by selecting "Actions → Adjustment" (1). The workflow and timelines for adjustments are the same as the normal settlement process.

Once an adjustment has been submitted the "Adjustment" flag will be set (2).

8 Compliance

The time limits for a DRR AO to ***submit*** compliance data for load curtailment activities are as follows:

1. ***Ancillary Services:*** 5 calendar days from the operating day.

8.1 Compliance Status

Status	Description
New	The Compliance record has been processed by the End of Day batch processing job and is awaiting submission of meter data and validation by the DRR AO.
Confirmed	Mater data has been submitted and compliance has been validated by the DRR AO.
Expired	The time period for submission of the Compliance record has elapsed, and it can no longer be submitted.

8.2 Generate Compliance Records

At the end of the operating day a batch job on DRT will create Ancillary Services compliance records for each qualifying event.

8.3 Searching for Compliance Records

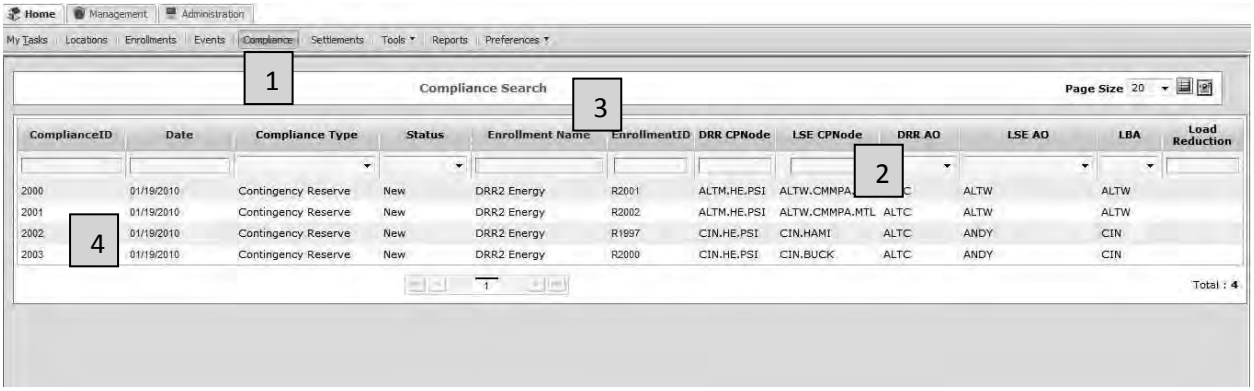


Figure 82: Compliance – Search

Select the “Compliance” menu item (1) to get to the “Compliance Search” screen. This screen presents a list of compliance records that you are authorized to view. You can filter the list by entering or selecting filter criteria in the fields with a yellow background (2), or sort it by clicking on a sort hyperlink (3). You can view the details of a specific compliance record by clicking on the hyperlink in the “Compliance ID” or “Date” columns (4).

8.4 Submit Meter Data

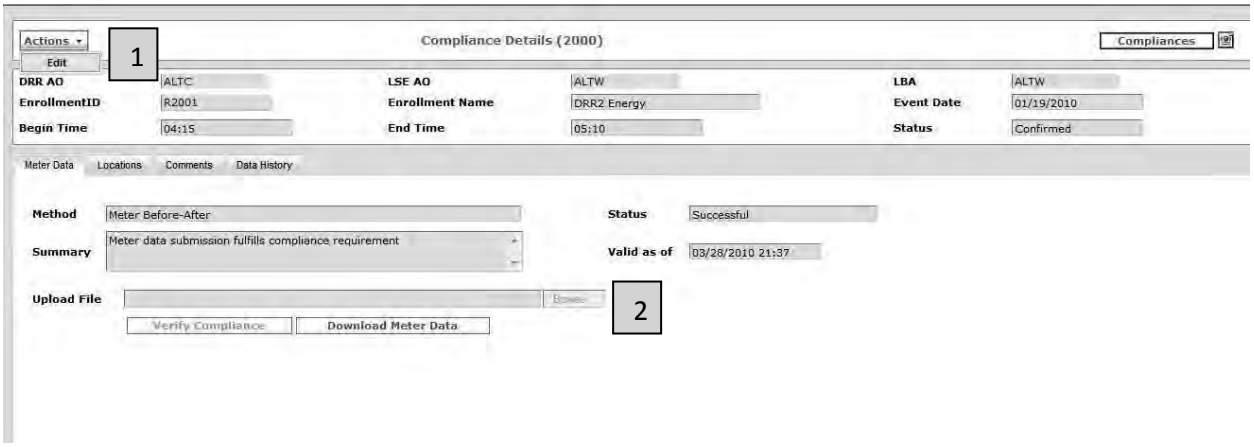


Figure 83: Compliance – Submit Meter Data

When a compliance hyperlink is selected from the compliance search list, the DRR AO will be presented with a screen showing details about the compliance event for the enrollment and event day. In order to submit meter data the DRR AO will select "Actions → Edit" (1) to enter edit mode, followed by the "Browse" button (2) to upload meter data.

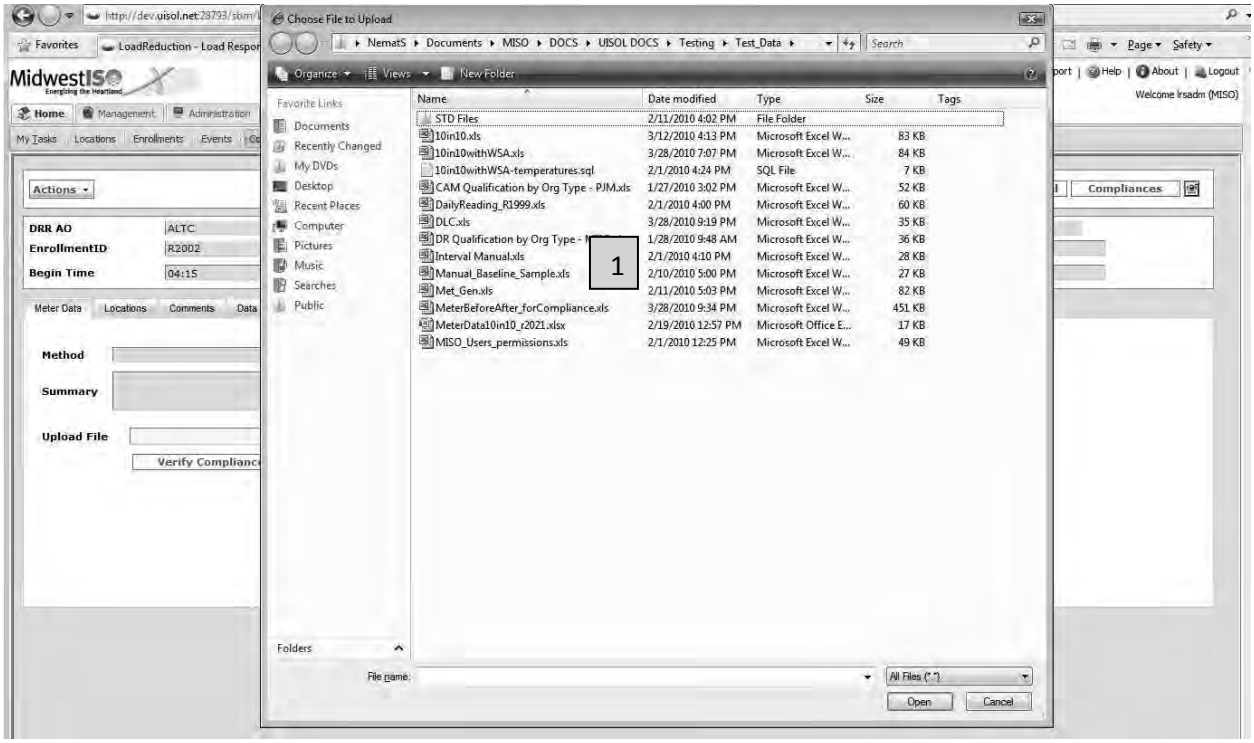


Figure 84: Compliance - Select File to Upload

The DRR AO is presented with a “Choose file to upload” dialog screen (1). The DRR AO should navigate to the location of the previously prepared meter data file (see *Section 6, Meter Data and Customer Baseline Load (CBL)* for details, select the relevant file and click on the “Open” button, which will upload the file to DRT.

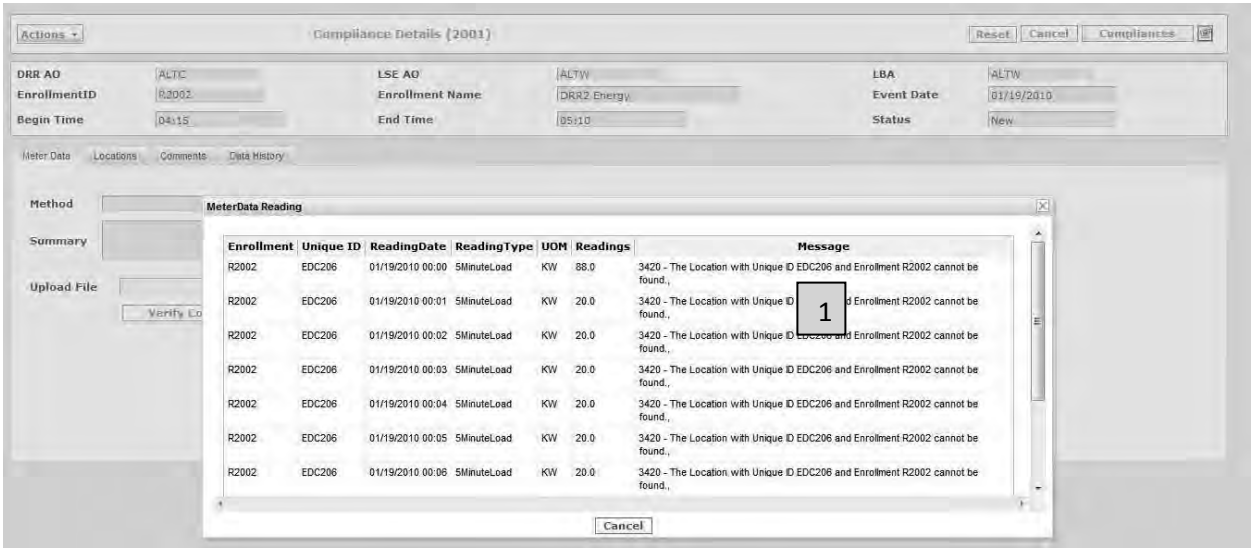


Figure 85: Compliance - Review Submitted Meter Data

Once the file upload has completed the DRR AO will be presented with a “Meter Data Reading” dialog screen showing the uploaded data. If the meter values are valid there will be no messages in the Messages column and there will be a “Save” button at the bottom of the dialog screen.

If the meter values contain errors there will be a message in the Messages column with details of the error (1), and there will be no “Save” button at the bottom of the dialog screen, so the meter data cannot be uploaded. The error should be corrected and the meter data uploaded. Note that there may be multiple pages of data, so it may be necessary to scroll through the pages to find the error message.

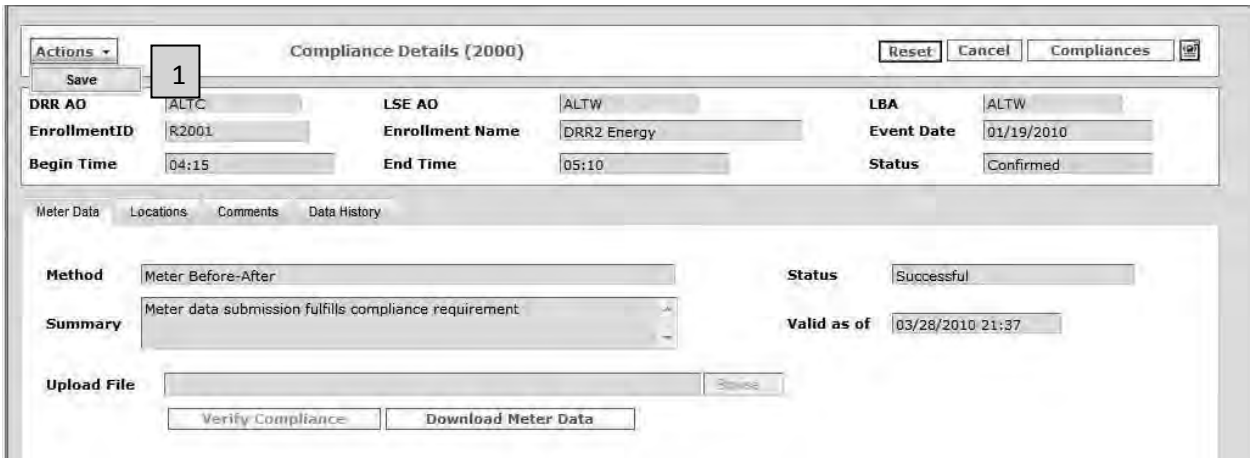


Figure 86: Compliance – Save

Once the meter data has been successfully uploaded and validated, the compliance record can be saved by selecting “Actions -> Save” (1). This will change the status of the compliance to “Confirmed”.

9 Alerts

System Users who can log into DRT and depending on their permissions can perform operations in the system.

Permissions only apply to users who can log in to DRT and who can perform operations on organizations, enrollments and settlements. See *Section 2, Organizations and Users* for details about user permissions.

"User Interests" apply to system users. They define the type of alert / message the user or contact will receive. The notifications and alerts from the DRT are sent to the email address in the digital certificate that the LSA has set up for the user. LSAs should ensure that email addresses are correct to ensure that users are notified of their tasks. The following alert levels are supported:

- None
- All System Events (DRT system users only)

The text for alerts visible in the application and emailed to a user will be the same. An email will always be sent when an alert is created (one to one correspondence between alerts and emails).

9.1 Searching for Alerts

Select “Tools → Alerts” to get to the Alert search page (1).

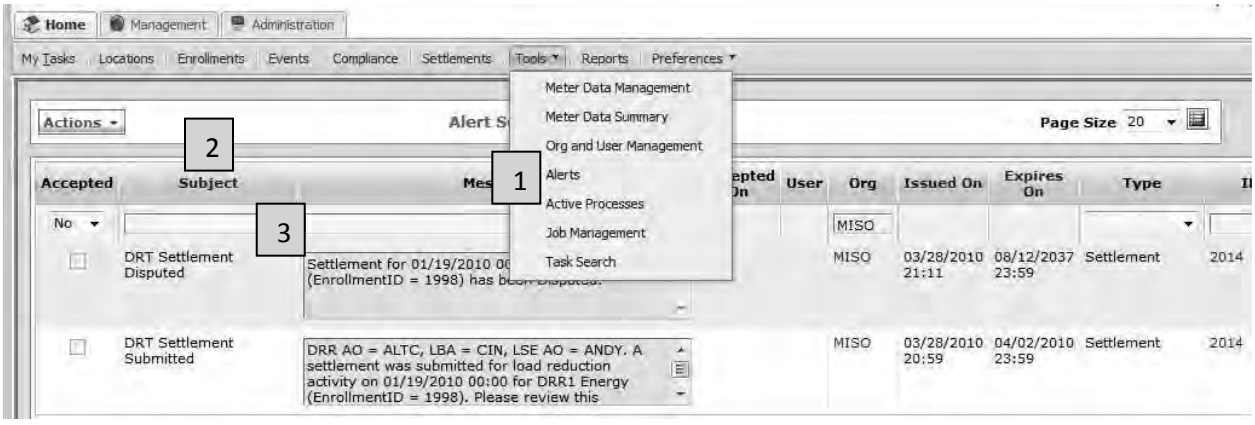


Figure 87: Alerts - Getting to the Search Page

Alerts can sorted by clicking on the “Subject”, “Issued on” and Expires on” hyperlinks (2), and can be filtered by “Subject”, “Message” or “ID” by typing in matching text, or by “Type” by selecting the

relevant status in the drop down (3). You can see which Alerts have not been accepted by selecting “No” from the “Accepted” drop down.

9.2 Acknowledging Alerts

Figure 88: Alerts – Acknowledge

Alerts may be acknowledged by selecting “Action → Acknowledge” (1). This displays a list of alerts that have not yet been acknowledged.

Figure 89: Alerts - Select Alert to Acknowledge

All alerts can be selected for acknowledgement by selecting the “Check All” link (1), or an individual Alert can be selected by selecting the check box next to the alert (2).

Figure 90: Alerts - Saving or Cancelling Changes

Once the alerts to be acknowledged have been selected, the changes can be saved by selecting “Actions → Save” (1). Alternatively the changes can be cancelled by selecting “Actions → Cancel”.