Demand Response User Guide

Version 4.5
October 31, 2018

¹ Including updates for 2018 ESDER Phase 2 implementations
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Information in this document is subject to change.
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Introduction

Purpose

CAISO introduced two products that rely on the same technical functionality and infrastructure:

1. Proxy Demand Resource (PDR)
2. Reliability Demand Response Resource (RDRR)

**PDR** bids into the CAISO market as supply and provides services such as energy, non-spin, residual commitment (RUC). In addition, the market dispatches economic day-ahead and real-time.

**RDRR**, on the other hand, bids into the CAISO market as supply and is used for reliability purposes. RDRR only offers energy services and dispatches economic day-ahead and reliability real-time.

In order to participate in Demand Response, CAISO provided market participants with two different types of applications.

1. Demand Response Resource Registration (DRRS)
2. Demand Response System (DRS)

This user guide will provide in-depth information on how to proceed from start to end once the Demand Response Provider Agreement (DRPA) previously known as the Proxy Demand Resource Agreement (PDRA) has been executed and introduce the new process change with the implementation of Energy Storage Distributed Energy Resources (ESDER) Phase 2.
The ESDER Phase 2 initiative introduces three types of baselines:

- **Control Group**

  Control groups must consist of at least 150 distinct End Users that are geographically similar such that they experience the same patterns and grid conditions as the PDRs and RDRRs representing the Treatment group. The Service accounts (locations) representing the Control group and Treatment group will be identified in the DRRS. The Control group will need to go through LSE and UDC review. The difference between the Control group and the Treatment group is that during event days, the Treatment group experienced event dispatch while the Control group did not.

- **Day Matching**

  Day matching baselines estimate what electricity use would have been in the absence of a Demand Response dispatch, using electricity use data on non-event, but similar days.

- **Weather Matching**

  Weather matching baseline estimate what electricity use would have been in the absence of Demand Response dispatch during non-event days with similar weather conditions.

In addition, the DRS application will be retired and the scheduling coordinator will be responsible for calculating the baseline and submit performance and load values to the Market Results Interface-Settlements (MRI-S) application.
Definitions

The following defined terms and acronyms are used throughout this document:

<table>
<thead>
<tr>
<th>Terms</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AARF</td>
<td>Application Access Request Form – method used to provision access to users of the DRS</td>
</tr>
<tr>
<td>Address information</td>
<td>The physical address of the location.</td>
</tr>
<tr>
<td>ADS</td>
<td>Automated Dispatch System</td>
</tr>
<tr>
<td>AIM</td>
<td>Access Identity Management (AIM) application. The application provides registered UAAs with the ability to view application-level access for all of their organization’s users as well as any users from other organizations who have access to their resources (endorsed users).</td>
</tr>
<tr>
<td>AIMS</td>
<td>Access and Identity Management System – application used to provision access to users of the DRRS</td>
</tr>
<tr>
<td>API</td>
<td>Application User Interface. Allows users to upload bulk location data to accommodate the input of the volume of locations participating in the Demand Response Program.</td>
</tr>
<tr>
<td>BUS Pnode</td>
<td>This is the business that the location ties into and is required if requesting a customer Resource ID. Please note that this data is not consumed nor is it required in DRRS.</td>
</tr>
<tr>
<td>CIDI</td>
<td>Customer Inquiry, Dispute and Information</td>
</tr>
<tr>
<td>Custom Resource ID</td>
<td>A unique resource ID requested by the DRP, modeled with their specified nodal locations and associated generation distribution factors (GDF).</td>
</tr>
<tr>
<td>Customer</td>
<td>The name of the customer that user assigned during the registration process.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>CBL</td>
<td>Customer Load Baseline</td>
</tr>
<tr>
<td>Demand Response Energy Measurement</td>
<td>The quantity of Energy equal to the difference between (i) the Customer Baseline for the Proxy Demand Resource or Reliability Demand Response Resource and (ii) either the actual underlying Load or the quantity of Energy calculated pursuant to Section 10.1.7 for the Proxy Demand Resource or Reliability Demand Response Resource for a Demand Response Event.</td>
</tr>
<tr>
<td>DLA Resource</td>
<td>The DLAP in which the Locations of the Registration resides.</td>
</tr>
<tr>
<td>DLAP</td>
<td>Default Load Adjustment Point</td>
</tr>
<tr>
<td>DRP</td>
<td>Demand Response Provider</td>
</tr>
<tr>
<td>DRP SC</td>
<td>Demand Response Provider Scheduling Coordinator who are responsible for submitting bids into the market and meter data to the DRS.</td>
</tr>
<tr>
<td>DRPA</td>
<td>Demand Response Provider Agreement previously called Proxy Demand Resource Agreement (PDRA).</td>
</tr>
<tr>
<td>DRRS</td>
<td>Demand Response Registration System. Allows users to create large volumes of locations and aggregate locations for participation in the ISO’s demand response program.</td>
</tr>
<tr>
<td>DRRS UI</td>
<td>Demand Response Registration System User Interface</td>
</tr>
<tr>
<td>End Date</td>
<td>End date of registration. The end date when the Registration will become inactive.</td>
</tr>
<tr>
<td>Endorsed User</td>
<td>Individual(s) outside of the company that is requesting for application access.</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Existing Resource ID</td>
<td>Resource IDs previously assigned to the DRP account. (Should be selected if resource ID was pre assigned to location)</td>
</tr>
<tr>
<td>LMP</td>
<td>Locational Marginal Price</td>
</tr>
<tr>
<td>Load Reduction</td>
<td>The total Load Reduction capacity per location.</td>
</tr>
<tr>
<td>Location name</td>
<td>Identifies the location/site for the user.</td>
</tr>
<tr>
<td>Locations</td>
<td>Physical location of the demand response entity. This includes the customer data such as the service account number, physical service location, and curtailable load amounts.</td>
</tr>
<tr>
<td>LSE</td>
<td>Load Serving Entity</td>
</tr>
<tr>
<td>MF</td>
<td>Master file database contains the physical characteristics and data used by the CAISO for</td>
</tr>
<tr>
<td>MSA</td>
<td>Meter Service Agreement</td>
</tr>
<tr>
<td>NBT</td>
<td>Net Benefit Test</td>
</tr>
<tr>
<td>New Custom PDR</td>
<td>CAISO will develop a new resource ID for this registration (custom).</td>
</tr>
<tr>
<td>PDR</td>
<td>Proxy Demand Resource</td>
</tr>
<tr>
<td>PEM</td>
<td>Performance Evaluation Methodology or also known as Baseline Methodology.</td>
</tr>
<tr>
<td>Pnode</td>
<td>Pricing Node - A single network Node or subset of network Nodes where a physical injection or withdrawal is modeled and for which a Locational Marginal Price is calculated and used for financial settlements.</td>
</tr>
<tr>
<td>POC</td>
<td>Point of Contact now referred to as UAA.</td>
</tr>
<tr>
<td>Pre-Defined Resource ID</td>
<td>A pre-established resource ID pre-modeled in each SubLAP based on CAISO specifications and available in the MasterFile for DRP to request assignment to a registration.</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>RDRR</td>
<td>Reliability Demand Response Resource</td>
</tr>
<tr>
<td>RegID</td>
<td>The registration ID number assigned to the registration by the Demand Response System; this ID is assigned by the DRS in sequential order.</td>
</tr>
<tr>
<td>Registration</td>
<td>Comprised of a single location or an aggregation of many locations. Submitted by the DRP to the LSE and UDC for review and CAISO for approval. Meter data is also submitted at the registration level for the baseline calculation prior to the market participation.</td>
</tr>
<tr>
<td>Resource ID</td>
<td>A unique ID used for participation in the ISO wholesale markets (scheduling/bidding and settlements). Assigned by the CAISO during the registration process in the Demand Response Registration System. Resource specific information for the ID resides in the ISO Master File.</td>
</tr>
<tr>
<td>RTD</td>
<td>Real-Time Dispatch</td>
</tr>
<tr>
<td>RUC</td>
<td>Residential Unit Commitment</td>
</tr>
<tr>
<td>SAN</td>
<td>Service Account Number. Unique number assigned to a location by the UDC. Dashes or any other special characters are not allowed for the location SAN.</td>
</tr>
<tr>
<td>SQMD</td>
<td>Settlement Quality Meter Data</td>
</tr>
<tr>
<td>Start Date</td>
<td>Start date of the registration (cannot overlap with existing registration for the same location).</td>
</tr>
<tr>
<td>SubLAP</td>
<td>One of the 23 SubLAP locations of CAISO. The SubLAP in which all the locations within the registration reside.</td>
</tr>
<tr>
<td><strong>UAA</strong></td>
<td>User Access Administrator formerly known as the POC.</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td><strong>UDC</strong></td>
<td>Utility Distribution Company. The UDC in which the Locations in the Registration reside and is part of the approval process.</td>
</tr>
<tr>
<td><strong>UDC Account #</strong></td>
<td>This is the account number a DRP receives from a UDC for billing.</td>
</tr>
</tbody>
</table>
The following diagram provides an overview of the sequential activities for the PDR/RDRR market participation.

### Process Overview

<table>
<thead>
<tr>
<th>Activities</th>
<th>Pre-Market Activities</th>
<th>Market</th>
<th>Post-Market Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure Agreements</td>
<td>- Access DRRS - Registration</td>
<td>Day-Ahead Real-Time Markets</td>
<td>Meter Data Calculation</td>
</tr>
<tr>
<td></td>
<td>- Access DRS - Not needed for registrations with a 10/1/2018 and forward effective date</td>
<td>- Registration Process</td>
<td>- For TD Prior to 10/1/2018</td>
</tr>
<tr>
<td></td>
<td>- Access MRI - Data Submittal</td>
<td>- Begin - Provide End Use Load Location Information</td>
<td>- Historic - Day Of Event</td>
</tr>
<tr>
<td></td>
<td>- Access CMRI - Identify TEE</td>
<td>- End - Receive Market Resource ID</td>
<td>- For TD 10/1/2018 and Forward</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Performance Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Baseline Data</td>
</tr>
</tbody>
</table>

### Timeline

- Approx. 30 BD
- 10 BD
- 7 BD Minimum
- 265 BD Maximum
- T+8 BD
- T+48 BD
- T+172 BD
- T+3 BD
- T+12 BD
- T+55 BD
- T+9 Month
Demand Response Provider (DRP)

A Demand Response Provider (DRP) with the ability to aggregate customers capable of reducing their electric demand (load) can participate in the ISO day-ahead, real-time and ancillary services markets as a Proxy Demand Resource (PDR) or Reliability Demand Response Resource (RDRR). The ISO envisions these resources contributing to the low-carbon, flexible capacity needed to maintain real-time system balance and reliability supporting the integration of renewable energy.

Executing a Demand Response Provider Agreement (DRPA)

To initiate a Demand Response Provider agreement, an Information Request Sheet must be completed and returned to regulatorycontracts@caiso.com. Once the Information Request Sheet has been reviewed for completeness, it will be processed by a Contracts Analyst and then a DRPA will be initiated (appendix includes the information request sheet link).

The pro forma DRPA is incorporated in Appendix B of the ISO Tariff. This agreement must be signed by a DRP and the ISO and executed prior to being assigned a Demand Response Provider ID and requesting a PDR or RDRR Resource ID. As with other ISO agreements, the Demand Response Provider Agreement will bind the DRP to the CAISO Tariff. The agreement requires that the DRP use a certified Scheduling Coordinator (Note: The SC must be certified to submit Settlement Quality Meter Data and have a Meter Service Agreement for Scheduling Coordinators with the CAISO) for all required tariff activities with the CAISO. The PDR agreement requires that the DRP have sufficient contractual relationships with the end use customers, LSE, and UDC and meet any Local Regulatory Authorities’ requirement prior to participating in the CAISO Markets. This agreement process will have a ten (10) Business Day turnaround timeframe.
PDR/RDRR Participation

The following process flow and checklist of items provides interested parties a guide to taking the steps necessary in becoming a Demand Response Provider (DRP) in order to obtain necessary ID’s and system access for PDR or RDRR participation.
## Market Participation Demand Response Registration Checklist

<table>
<thead>
<tr>
<th>Information Request Sheet</th>
<th>Submitted</th>
<th>□</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executing a Demand Response Provider Agreement (DRPA)</td>
<td>Received for review</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>Executed – Signed/Returned</td>
<td>□</td>
</tr>
<tr>
<td>Demand Response Provider (DRP ID) assigned by ISO</td>
<td>Received</td>
<td>□</td>
</tr>
<tr>
<td>Scheduling Coordinator Assignment</td>
<td>Obtained</td>
<td>□</td>
</tr>
<tr>
<td>Demand Response System Access (DRRS) – Production and Map Stage (Market Simulation) environments</td>
<td>AIM request submitted (DRRS)</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>DRRS certificate received</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>DRRS access verified</td>
<td>□</td>
</tr>
<tr>
<td>DRRS/PDR/RDRR Training</td>
<td>User guide reviewed</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>Request training (DRRS)</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>Training completed (DRRS)</td>
<td>□</td>
</tr>
<tr>
<td>DRRS Automated Email Notification</td>
<td>Submitted Contacts to be added to the database</td>
<td>□</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>Performance Evaluation Methodology (PEM)/Baseline Methodology Form</td>
<td>Submitted</td>
<td>□</td>
</tr>
</tbody>
</table>
Using a Scheduling Coordinator

The CAISO requires the use of a certified Scheduling Coordinator to be eligible to transact business directly with the CAISO. A DRP could endeavor to become a certified Scheduling Coordinator or use an existing certified Scheduling Coordinator. It is important to note that the certification process for a new Scheduling Coordinator could take up to 120 days.

A list of certified Scheduling Coordinators is maintained on the CAISO website. By using a certified Scheduling Coordinator, all requirements, as outlined in the BPM for Scheduling Coordinator Certification and Termination, will be maintained by the Scheduling Coordinator; therefore, the DRP would not have to satisfy these requirements.

Additionally, the Scheduling Coordinator for a DRP must have the authority to represent Scheduling Coordinator Metered Entities. This requires the Scheduling Coordinator to have executed a Meter Service Agreement for Scheduling Coordinators (MSA SC) with the CAISO. The Scheduling Coordinator for a Scheduling Coordinator Metered Entity is responsible for providing settlement quality meter data (SQMD) for the DRPs it represents.

The Scheduling Coordinator for Scheduling Coordinator Metered Entities must conduct (or engage an independent, qualified entity to conduct) an annual SC Self-Audit. The SC Self-Audit must evaluate the process flow of Meter Data beginning with the Validation, Estimation and Editing (VEE) and following the process through submittal of Actual SQMD to the CAISO. (See BPM for Metering for all applicable Scheduling Coordinator for Scheduling Coordinator Metered Entities requirements).
Obtaining a Demand Response Provider (DRP) ID

Once the Demand Response Provider Agreement (DRPA) has been executed, the following shall occur:

1. DRP shall submit a DRP ID request form to CAISO at pdr@caiso.com. The DRP ID request form can be found at http://www.caiso.com/participate/Pages/Load/Default.aspx.

2. After the DRP ID request form has been reviewed and approved, CAISO shall assign a new DRP ID. If the request is denied, CAISO will contact the requester to request for further information.
Application Access

This user guide will address the Demand Response Registration System (DRRS) application.

DRRS access is required for a DRP to submit locations, registration, and resource management processes in order to establish a PDR/RDRR resource ID for market participation.

DRRS access is required by LSEs and UDCs to manage the review process of locations submitted by the DRP.

Access to DRRS can be obtained through the organization’s User Access Administrator (UAA) via the Access Identity Management (AIM) application.

UAA is the designated User Access Administrator for the organization that is requesting for application access. More information on how to become a UAA can be found at http://www.caiso.com/participate/Pages/UserAccessAdministratorGuide/Default.aspx

AIM UAA is a registered user in AIM and the user has the ability to perform the functions as described in the AIM definition below.

AIM is an application that provides registered UAA with the ability to view application-level access for all of their organization’s users as well as any users from other organizations who have access to their resources (endorsed users). More information can be found at http://www.caiso.com/Documents/AccessandIdentityManagement_AIM_UserGuide.pdf

AARF is an Application Access Request Form used by the UAAs to submit a request for application access for the users. Once a DRP ID, or LSE ID, or UDC ID have been obtained and the UAA form has been established, the User Application Access Request Form (AARF) process is used to gain access to the DRRS.

To request DRRS access the following shall occur:
1. If the request is for a user within the UAA’s organization, the UAA shall submit a request through AIM. No AARF is required. Note: If the UAA is not a registered AIM UAA, the UAA must submit a request to UAARequests@caiso.com to register to become an AIM UAA. The UAA cannot proceed until access to AIM has been obtained.

2. If the request is for a user outside of the UAA organization, an Application Access Request Form (AARF) is required for DRRS access, AIM is the only method to request for DRRS access. However, if the request is for an endorsed user (users outside of the UAA’s organization), an AARF is required. If the UAA is not an AIM user, the UAA must send a request to UAARequests@caiso.com for access.

Example: (only for DRRS access)

Access for users within the UAA’s organization = No AARF required (Goes through AIM)

Access for users outside of the UAA’s organization (endorsed users) = Requires AARF

Submit a request for both the production and market simulation/map stage environments in both applications is recommended.
DRRS Automated Email Notification

The DRP shall send contact information to PDR@caiso.com. An Email Distribution List is preferred. The Contact(s) will receive automated email notifications from DRRS of Location and/or Registration status change and when the defense process has been initiated for an existing location, in an active or inactive status, that need the incumbent DRP’s attention.

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Common Name</th>
<th>ORG_IDS (from AIM)</th>
<th>USER_IDs (from AIM)</th>
<th>Email</th>
<th>Org. Name</th>
<th>DRP ID</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
Performance Evaluation/Baseline Methodology

The DRP/SC must obtain approval from the CAISO before using the new and existing baselines.

- Control Group
- Day Matching 10-in-10
- Day Matching 5-in-10 residential only
- Day Matching Combined
- Weather Matching
- Meter Generator Output
- Meter Generator Output with 10-in-10

To submit a request, the SC/DRP must include a cover page in Word Document. The Baselines are DRP specific; if the DRP has more than one DRP IDs and would like to request for multiple DRP IDs, you may list multiple DRP IDs on the cover page. Print the name(s) of the SC and the DRP. DO NOT SIGN. Include the email address of the Signors. The CAISO will approve and initiate digital signature through DocuSign. The SC and DRP shall digitally sign the Cover Sheet and submit it through DocuSign. The baseline methodology will take up to 10 business days to implement.

The link to the Performance Evaluation Methodologies (PEM) forms and reference materials are listed below:

1. PEM forms and cover page
   a. Cover Page
   b. Performance Methodology Form- Control Group
   c. Performance Methodology Form-Day Matching 10-in-10
   d. Performance Methodology Form-Day Matching 5-in-10 Residential-Only
   e. Performance Methodology Form-Day Matching Combined
   f. Performance Methodology Form-Meter Generator Output
   g. Performance Methodology Form-Meter Generator Output With 10-in-10
   h. Performance Methodology Form-Weather Matching
Load Serving Entities (LSE) and Utility Distribution Companies (UDC)

End use customer load served by a LSE and provided distribution services by a UDC may be represented in the wholesale market by a third party DRP. Therefore, the CAISO systematically facilitates a registration process during which these entities are informed of a DRP’s identification of their end-use customers, referenced by a unique service account number, and intent to use their load response capabilities as a PDR or RDRR. The LSE and UDC are identified when the locations are created by DRPs during the registration process, therefore, an LSE ID and UDC ID must be available. In addition, for the LSE and UDC to exercise their review capability, they must obtain a unique ID.

It is important for DRP’s to work with the LSEs and UDCs for all the end-use customers they represent to ensure that they have obtained their ID’s from the CAISO prior to commencing with the PDR/RDRR registration process.
Obtaining a Load Serving Entity (LSE) ID or Utility Distribution Company (UDC) ID

1. LSE or UDC shall submit a request form to CAISO at pdr@caiso.com. These request form(s) can be found at http://www.caiso.com/participate/Pages/Load/Default.aspx.
2. After the request form has been reviewed and approved, CAISO shall assign a new LSE ID or UDC ID. If the request is denied, CAISO will contact the requester to request for further information.

The CAISO maintains a list of DRP, LSE and UDC IDs that have been issued. This list is located at http://www.caiso.com/Documents/ListofDemandResponseParticipants.pdf.
Demand Response Registration System (DRRS) Description

The Demand Response Registration System (DRRS) is the application developed to enable wholesale market participation by end-use customers, referred to as locations, under the PDR and RDRR participation models. The system facilitates the registration process which identifies the end-use customers providing load curtailment in response to a CAISO PDR/RDRR dispatch instruction. The system performs a series of process controls including data validation, duplication check and review process by LSEs and UDCs, to ensure the uniquely identified end-use customer is being registered appropriately and not participating in overlapping registrations or retail programs.

The DRRS provides a robust User Interface (UI) and Application Program Interface (API) to facilitate a streamlined registration process for all DRRS user roles. This includes an API for uploading bulk location data to accommodate the input of volumes of locations participating, in aggregate, as PDR/RDERRs.

Additional DRRS APIs are provided for the creation, modification, review and termination of locations and their registrations.
User Roles
There are three types of user roles for this application.

<table>
<thead>
<tr>
<th>User Role</th>
<th>Entity</th>
<th>Read Access Only</th>
<th>Read Write Access</th>
<th>Brief Description of the entity (DRP, LSE, UDC, ISO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>APP_DRRS_DRP_EXT</td>
<td>DRP</td>
<td></td>
<td>X</td>
<td>DRP can create, modify and end-date locations and create, modify and terminate registrations.</td>
</tr>
<tr>
<td>APP_DRRS_UDC_EXT</td>
<td>UDC</td>
<td>X</td>
<td></td>
<td>UDC can review and submit comment(s) on location info and view registrations containing those locations</td>
</tr>
<tr>
<td>APP_DRRS_LSE_EXT</td>
<td>LSE</td>
<td>X</td>
<td></td>
<td>LSE can review and submit comment(s) on location info and view registrations containing those locations</td>
</tr>
</tbody>
</table>

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Functionality Overview

In DRRS, there are two functionality tabs: (1) Locations, (2) Registrations

1. **Location** tab – Allows the DRP to Create, Copy, Delete, Defend, Withdraw, Edit, End Date and Register locations. The UDC and LSE can **Review** locations and registrations in which associated locations are assigned.

2. **Registration** tab – Allows the DRP to Create, Edit, Copy, Terminate, and Delete registrations. The UDC and LSE can view Registrations and location(s) associated to the registration.

**Locations**
- Require effective dates (Start Date and End Date) which provides flexibility in creating and processing registrations. (see example in figure 1 below)
- Start Date and End Dates cannot be prior dates.
- Can be created individually UI or in bulk using web service API.
- Cannot be added or removed from a Confirmed registration.
- Once submitted, can be end-dated but not deleted.
- Provides DRP control in their use in creating registrations
- Allows for locations to move in and out of registrations without additional UDC or LSE review.
Registrations

Figure 1

Location effective date

Effective date change (allowed with no review)

Extending end date (requires re-review)
• Effective dates are validated against location effective dates.

• Multiple registrations can be created within location effective dates (see example in figure 2 below)
• Can be created using web service API or UI.
• Can be created when reviewed locations are available.
  o Includes location validations that may result in processing errors (i.e. location being used in another registration during effective dates)
• May be affected by edits made to location attributes.
• Once confirmed, can be terminated but not deleted.
• Effective dates determine associated Resource effective dates
• One Registration to one Resource relationship (1:1) maintained

Figure 2
Application Layout

*Role-based tab views*

In DRRS, there are three (3) different role-based tab views. The views that are accessible to the users will be determined by the number of roles provisioned on the digital CMA certificate.

1. **DRP View** – This tab will be visible to users that log in with the DRP role. Users can have multiple views if the users have multiple roles.
2. **UDC View** – This tab will be visible to users that log in with the UDC role.
3. **LSE View** – This tab will be visible to users that log in with the LSE role.

To access the Location or Registration functionality, users can place their cursor over the applicable tab(s) (DRP VIEW, UDC VIEW or LSE VIEW). The Locations and Registration screens are accessible under the corresponding views.
DRP VIEW, UDC VIEW or LSE VIEW selection shows all the locations/assigned to that entities ID or filtered view showing a subset of that entities locations.

Example: LSE VIEW Locations
Additionally, DRP VIEW, UDC VIEW or LSE VIEW will show all registrations comprised of locations assigned to that entities ID or filtered view showing a subset of locations

Example: LSE VIEW Registrations
Column Headers

In the **Locations** tab, users can choose what columns they would like visible at any time. These options include; Loc Id, Loc Name, SAN, DRP ID, UDC ID, LSE ID, SUBLAP, PNODE, Start Date, End Date, Status, Updated By and Updated Date.

In the **Registrations** tab, users can choose what columns they would like visible at any time. These options include; Reg Id, Reg Name, DRP ID, UDC ID, LSE ID, SUBLAP, DRP SC, Resource Id, Resource Type, Program, Baseline Method, Start Date, End Date, Status, Updated By and Updated Date.
**Search Parameters**

Locations: Allows users to search using any of the available following criteria: (1) LOC ID, (2) LOC Name (3) SAN, (4) DRP (5) UDC, (6) LSE, (7) SUBLAP.
Registrations: Allows users to search using the following criteria: (1) Reg ID, (2) Reg Name (3) DRP ID (4) UDC ID, (5) LSE ID, (6) SUBLAP.
Sorting and Filtering Locations and Registrations

Sorting from ascending to descending by clicking on any of the column headers.

Multiple column headers can be sorted either ascending or descending.
Users can also use the inline filtering option. The inline filter works as a toggle. Click the icon to filter data based on the content of a particular column. Press Enter after inputting the filter criteria. Please note that wildcard symbols can be used in this column, but are not necessary.
Actions

In DRRS, the action buttons are role-based. Actions provided are determined by the role provisioned for the user.

**DRP Actions**

Locations: Create, Copy, Delete, Defend, Withdraw, Edit, End Date, Register

Registrations: Create, Edit, Copy, Terminate, Delete
Under the **DRP** action, the **Create** button is used when a location is being created for the first time. When DRP selects the **Create** button, the “Create New Location” view will appear as shown in the figure below. All required fields will be designated with an asterisk.
DRP Copy provides the user the ability to copy a previously created location. The user must first select the location to be copied then the Copy button. The copied location information will be presented and all fields will be editable. This action is provided for cases where the user is creating multiple locations with the same key fields, reducing the effort in having to create each independently.
**DRP DELETE** action is usable when a location has been previously created. **DELETE** is only actionable for certain location statuses.

![DRP DELETE Action Image]

**DRP Defend** is actionable by a DRP that has been notified by another DRP, referred to as the prospective DRP, that the defense process has been initiated for an existing location, in an active or inactive status, of theirs.

To defend a location, the DRP for the existing location, referred to as the incumbent DRP, must first select the location then the **Defend** button.
The incumbent DRP will then have an opportunity to respond to the comments submitted by the prospective DRP. In the defend locations screen, the incumbent DRP has the ability to either accept or reject the Defend request.

- If “Valid Location” is checked, the incumbent DRP is indicating that the location is valid and will not release that location based on comments received from prospective DRP.
- If the “Valid Location” is not checked, the incumbent DRP is stating that the request received is accepted and action will be taken by them to release the location to the prospective DRP.
DRP Withdraw action is usable when a location has been previously created and submitted for review but not completed the review process. To withdraw a location, the user must first select the location then the Withdraw button. The DRP will be required to provide contact information prior to submitting the location to the defend process.
DRP Edit action is usable when a location has been previously created. To edit a location, the user must first select the location then the Edit button. The location information will be presented to the user with available fields that are editable. Editable fields will be dependent on the locations status.
DRP End Date action is actionable only under certain location statuses. NOTE: ending a location may impact the effective dates of a registration. To End Date a location, the user must first select the location then the End Date button. The DRP will be required to confirm that they want to End Date the location prior to it being processed. Using the End Date action does not allow the DRP to select an end date but the end date will correspond with the date that the action was taken. The DRP must use the Edit action to End Date a location for a different date.
UDC and LSE Actions

Locations: Review

Registrations: View Location
Location and Registration Status Lifecycle

<table>
<thead>
<tr>
<th>DRRS Status</th>
<th>Location</th>
<th>Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. New</td>
<td>1. New</td>
</tr>
<tr>
<td></td>
<td>2. Processing</td>
<td>2. Pending</td>
</tr>
<tr>
<td></td>
<td>3. Pending</td>
<td>3. Confirmed</td>
</tr>
<tr>
<td></td>
<td>4. Inactive</td>
<td>4. Terminated</td>
</tr>
<tr>
<td></td>
<td>5. Active</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Withdrawn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. End-Dated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Duplicate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Disputed</td>
<td></td>
</tr>
</tbody>
</table>

**Location**
- **New**: Location will be set to this status when it is created and saved but not yet submitted for review.
- **Processing**: Location will be set to this status while being validated when it is submitted for review.
<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pending</td>
<td>Location will be set to this status when it is submitted for review and validation has successfully completed. This status indicated that the review process has been initiated for the location.</td>
</tr>
<tr>
<td>Inactive</td>
<td>Location will be set to this status when it has successfully completed the review process but is not part of a registration that is in a “pending” or “confirmed” status.</td>
</tr>
<tr>
<td>Active</td>
<td>Location will be set to this status when it is part of a registration that is in a “pending” or “confirmed” status.</td>
</tr>
<tr>
<td>Withdrawn</td>
<td>Location will be set to this status when it is Withdrawn while in the pending, duplicate or disputed statuses.</td>
</tr>
<tr>
<td>Duplicate</td>
<td>Location will be set to this status when, during the submittal validation, the location SAN for the same UDC is found to be used by another DRP.</td>
</tr>
<tr>
<td>Disputed</td>
<td>Location will be set to this status when it has NOT successfully completed the LSE/UDC review process. Review process has resulted in invalidation findings.</td>
</tr>
<tr>
<td>End Dated</td>
<td>Location will be set to this status when the effective end date of the location is prior to the current date. End dated locations are logically equivalent to deleted records.</td>
</tr>
<tr>
<td>Registration</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>New</td>
<td>Registration will be set to this status when it has been created but NOT yet submitted.</td>
</tr>
<tr>
<td>Pending</td>
<td>Registration will be set to this status when it has been submitted and validation is in progress.</td>
</tr>
<tr>
<td>Confirmed</td>
<td>Registration will be set to this status when it has been submitted and validation has successfully completed.</td>
</tr>
<tr>
<td>Terminated</td>
<td>Registration will be set to this status when the effective end date of the registration is prior to the current date. End dated registrations are logically equivalent to deleted records.</td>
</tr>
<tr>
<td>Status</td>
<td>Registration Status Description</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>New</td>
<td>Created but NOT yet submitted.</td>
</tr>
<tr>
<td>Pending</td>
<td>Submitted and validation is in progress</td>
</tr>
<tr>
<td>Confirmed</td>
<td>Submitted and validation has successfully completed</td>
</tr>
<tr>
<td>Terminated</td>
<td>Effective end date of the registration is prior to the current date. End dated registrations are logically equivalent to deleted records.</td>
</tr>
</tbody>
</table>
Location Status Lifecycle Process Flow

2 Draft as of 8/1/2016, updates in process.
Registration Status Lifecycle Process Flow

DPRS Registration Data – Registration Status Lifecycle

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3 Draft as of 9/24/2018, updates in process.
Creating and Registering Locations and Resource:

For the DRP/SC, the DRRS facilitates three registration process components: manage locations, manage registrations, and manage resources. After the DRP receives approvals for Baseline methodologies, the process begins with creating the location(s) information into the DRRS, the LSE/UDC reviews and approves the location(s), DRP/SC creates registrations from one or many reviewed locations, registration is in “Confirmed” status, and the DRP submits Generator Resource Data Template (GRDT) to be added to Master File.

For the UDC and the LSE, the DRRS facilitates a review process as part of the DRP’s management of locations. Once the DRP submits a location for review, the DRRS will perform data validation including a duplication check for that location. If the data is valid then the UDC and LSE is notified that there is a location ready for review. The UDC and LSE have ten (10) business days to complete their review and either submit with or without findings. If the ten (10) business days elapses without a UDC or LSE acting on the review notification, the DRRS will auto approve the location.
Create a Location

The registration process builds from location to registration to resource management. The DRRS provides Location management which includes the creation of locations by the DRP, a duplication check by the DRRS and an LSE and UDC review of the location to validate its use by the DRP for the established effective dates. The DRRS provides a robust UI and API's for the DRP(s), LSE(s) and UDC(s) use in performing their location management tasks. System generated email notifications are also generated as alerts to activities occurring that may require their attention.

**DRRS User Interface (UI) Location Management**

To **Create** a new location, DRP(s) will click on the **Create** button under their Locations View.
Next, enter the location information. The required fields are indicated by the asterisk (*) signs. Fill out all required fields and any optional fields as needed.

Name
DRP chosen name of the designated location.

SAN
Service Account Number unique identifier of the location often assigned by the UDC.

Start Date
The Start Date cannot be a prior date or overlap with an existing Active location with same SAN and UDC assignment.

End Date
The End Date cannot be a prior date or overlap with an existing Active location with same SAN and UDC assignment.

DRP
Designated Demand Response Provider.

UDC
Designated Utility Distribution Company

LSE
Designated Load Serving Entity
SubLAP
The SubLAP in which all the locations within the registration reside. SubLAP are determined by the Start/End Dates.

PNODE
The Pnode at which the location load is modeled at. Required field if planning to use the location in a Registration selecting a Custom Resource ID.

Address, City State, Zip, Type
The address of the location and type of location (e.g. commercial, residential) for DRP identification purposes.

Options within Create New Location include:
- **Cancel** - cancels the creation of a location.
- **Save** - creates a new location and location ID for it.
- **Submit** - creates a new location and location ID for it and submits it to the UDC/LSE review process. Submits a previously Saved and Edited location to the UDC/LSE review process.

Once the new location information has been saved or submitted, a new **Location ID (LOC ID)** will be generated.

When saved, the locations **Status** will be displayed as **New**.
When submitted, the locations **Status** will be displayed as *pending*.

<table>
<thead>
<tr>
<th>Start Date</th>
<th>End Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/15/2016</td>
<td>01/15/2017</td>
<td>Pending</td>
</tr>
</tbody>
</table>
Edit

New Location

To **Edit** a **New** location, DRP(s) must first select a location with a **Status** of **New** then click on the **Edit** button under their Locations View.
In the Edit location view, any changes can be made to the location without it having to be end dated. In this example, the LSEID is changed and the location is updated by selecting the Update option.

A message indicates that the Update was successful.
The Update is reflected for that Location without a Loc ID change. This type of modification is not available once a location has been submitted for review.

Refer to Appendix B for Editable fields by Location status.

Pending Location

A Pending Location has successfully completed the submittal validation and is in the LSE and UDC review. A location in the Pending status cannot be edited and if an attempt is made to Edit a Pending location an error message will be received. The Pending locations only allows for end dating of the location. The DRP must select the End Date and confirm that the selected location is to be End Dated.
Inactive Location

An **Inactive** Location has successfully completed the LSE and UDC review process, but is not part of a registration that is in Pending or Confirmed status. Editing to **Inactive** locations is limited to the location name, start date, end date and address fields. All other fields will be unavailable for modification and update.
Active Location

An **Active** Location is part of a registration that is in Pending or Confirmed status. Editing of **Active** locations is limited to the location name and address fields. All other fields will be unavailable for modification and update.
End Dated Location

No changes are permitted for an End-Dated Location. Submissions to Edit an End-Date Location will be rejected. End-dated locations are logically equivalent to deleted records.
Copy

The **Copy** feature allows the DRP to create a new location by copying an existing location and making changes to the copied field information. Locations in any status may be copied. To **Copy** a location, the location is first selected then the **Copy** button chosen under the Locations View.

The Copy option takes the user to the Create New Locations window and provides the same Options:

- **Cancel** - Cancels the creation of a new location.
- **Save** - Creates a new location with changes and location ID for it.
- **Submit** - Creates a new location with changes and location ID for it and submits it to the LSE and UDC review process.
### Create New Location

**Name**: Pending_test_Reject_SANchange  
**SAN**: PTR12345  
**Start Date**: 06/01/2018  
**End Date**: 09/06/2018  
**Address 1**: South Elm  
**City**: San Jose  
**State**: California  
**Zip**: 95101  
**Address Type**:  
---

**Cancel**  
**Save**  
**Submit**
Delete

The **Delete** feature allows the DRP to delete a new location. Locations can only be deleted when they are in the New status. To **Delete** a location, the new location is first selected then the **Delete** button chosen under the Locations View.

Once **Delete** is selected, the Location to be deleted will be identified and a confirmation to delete is required by selecting the **Continue** button.

A deleted Location and its created Location ID will no longer exist in the Locations View.
Duplication Check

When a location is submitted for review, a duplication check is performed against other locations in the system. If the DRPID is the same as the submitting DRP, the system will reject the location and provide an error message. If the DRPID is different, the location will be created with a Duplicate status.

Note: error message received when location is submitted and there is a duplicate location pending review. Location cannot be submitted and cannot enter the defend process until the duplicate location is in the active or inactive status.
Defend

The **Defend** feature allows the DRP to defend a location that has been found to be a duplicate of another location in the inactive or active status having the same SAN, UDC and overlapping effective dates with another DRP (Incumbent). The location will be identified as a duplicate once it is submitted for registration. The prospective DRP must include a contact name, number and comment if they chose to enter the defend process by selecting the **Continue** button. Locations submitted into the defense process will set to a duplicate status.

The system will notify the Incumbent DRP that their location needs to be defended for use by request of another DRP. This location requires defense by the incumbent DRP. To defend, the incumbent DRP must comment on their defense of
the location and provide their DRP ID, contact name and phone number within 10 business days of the notification (defense period).

A list of the 3 possible Cases of the Defend Process is in Appendix A in this document.

If the Incumbent DRP defends the location during the defense period the Prospective DRP must contact them to resolve the duplicate use conflict outside of the ISO registration process.

Example of email notification sent to the Incumbent DRP to defend location ownership.

---

From: no-reply@caliso.com [mailto:no-reply@caliso.com]
Sent: Friday, August 05, 2016 4:00 PM
To: DAPI contact primary
Cc: DAPI contact secondary
Subject: Location Defend initiated

The following location has triggered the location defend process
Location Id: 542521
Location Name: Pending_Test_Reject
SAN: PIR12345
DRP: 
UDC:
LSE:
SUBLAS:
START DATE: 2016-09-01 00:00:00.0
END DATE: 2016-09-30 00:00:00.0
STATUS: Disputed
REVIEWER NAME: DRP2
REVIEWER PHONE: 916-999-9999
COMMENT: This SAN is now under contract with DRP2, please end date this location effective 8/8/2016 or contact for additional info.
Withdraw

The Withdraw feature allows the DRP to withdraw a location from the validation and UDC or LSE review processes. Locations can only be withdrawn when they are in the processing or pending statuses. To Withdraw a location, the location is first selected then the Withdraw button chosen under the Locations View.

Once Withdraw is selected, the Location to be withdrawn will be identified and a confirmation to withdraw is required by selecting the Continue button.
End Date

The **End Date** feature allows the DRP to end date a location. Locations can only be end dated when they are in the inactive or active statuses. To **End Date** a location, the location is first selected then the **End Date** button chosen under the Locations View.

Once **End Date** is selected, the Location to be end dated will be identified and a confirmation to end date is required by selecting the **Continue** button.
Location Review

LSE Review

After logging into the DRRS, the LSE is provided a view option for Locations and Registrations. Selecting the Location view will provide a list of locations that they have been assigned as the LSE. The Location view includes all the locational information provided by the DRP to create the location. In addition the following is provided in this view:

**Location ID**
A unique ID assigned by the DRRS for all new locations when they are saved or submitted.

**Status**
The Current status of the location.

**Review Start**
The date on which the location was submitted for review. This date begins the ten business day (10) review period for the LSE to review and respond before the DRRS auto approves the location.

**Review End**
The date on which the review period end or date on which the review was completed.

**LSE Review**
A “Y” indicates that a valid location review has been completed.

**Reviewer Name**
The name of the reviewer provided as part of validation.

**Reviewer Contact**
Phone number of the reviewer provided as part of validation.

---

4 See Location Management > Create section for all location information provided by the DRP. 5 See Location Management > Create section for all location information provided by the DRP. 6 Link directly to document at time of User Guide publication http://www.caiso.com/Documents/DemandResponseLocationRegistrationEnhancement-TechnicalSpecificationsv4REDLINED.pdf. If link is no longer working, search for document at CAISO.com.
Locations requiring review will be in the **Pending** status.
Locations reviewed without findings will be in the **Active** or **Inactive** status.
Locations reviewed with findings from either the LSE or UDC will be in the **Disputed** status.
The LSE selects the Locations (one or multiple) to be reviewed and chooses the **Review** button to enter the review confirmation process screen.

Note: The system only accepts 25 Locations/rows at a time when approving.
When selecting more than one location, all locations listed are reviewed by the LSE together. Response by the LSE will affect all locations listed, selection of individual locations is not available in the “locations to be reviewed” view.

The location(s) is confirmed as being valid by selecting the **Valid Location** box. The location confirmation is disputed by leaving the box un-selected indicating that the location(s) have not passed the review.
The LSE must include a Reviewer Name and Phone # and, if the location is not valid, a Review Comment when choosing to Continue. Comment should include the reason as to why the LSE has determined this to be an invalid location. Examples include, but are not limited to the following:

- Incorrect location information (e.g. incorrect SubLAP)
- Wrong LSE or UDC designation
- No commercial agreement
- Regulatory non-conformance
- Location identified as participating in another program

Note: The Comments box is limited to 255 characters.

The LSE may end their validation of the location(s) by choosing to Cancel.
UDC Review

After logging into the DRRS, the UDC is provided a view option for Locations and Registrations.

Selecting the Location view will provide a list of locations that they have been assigned as the UDC. The Location view includes all the locational information provided by the DRP to create the location.  In addition the following is provided in this view:

| Location ID | A unique ID assigned by the DRRS for all new locations when they are saved or submitted. |
| Status      | The Current status of the location. |
| Review Start| The date on which the location was submitted for review. This date begins the ten business day (10) review period for the UDC to review and respond before the DRRS auto approves the location. |
| Review End  | The date on which the review period end or date on which the review was completed. |
| LSE Review  | A “Y” indicates that a valid location review has been completed. |
| Reviewer Name| The name of the reviewer provided as part of validation. |
| Reviewer Contact | Phone number of the reviewer provided as part of validation. |

Locations requiring review will be in the **Pending** status.

---

5 See Location Management > Create section for all location information provided by the DRP. Link directly to document at time of User Guide publication http://www.caiso.com/Document/DemandResponseLocationRegistrationEnhancement-TechnicalSpecificationsv4REDLINED.pdf. If link is no longer working, search for document at CAISO.com.
Locations reviewed without findings will be in the **Active** or **Inactive** status.

Locations reviewed with findings from either the LSE or UDC will be in the **Disputed** status.

The UDC selects the Locations (one or multiple) to be reviewed and chooses the **Review** button to enter the review confirmation process screen.

Note: The system only accepts 25 Locations/rows at a time when approving.
When selecting more than one location, all locations listed are reviewed by the UDC together. Response by the UDC will affect all locations listed, selection of individual locations is not available in the “locations to be reviewed” view.

The location(s) is confirmed as being valid by selecting the Valid Location box. The location confirmation is disputed by leaving the box un-selected indicating that the location(s) have not passed the review.
The UDC must include a Reviewer Name and Phone # and, if the location is not valid, a Review Comment when choosing to [Continue]. Comment should include the reason as to why the UDC has determined this to be an invalid location. Examples include, but are not limited to the following:

- Incorrect location information (e.g. incorrect SubLAP)
- Wrong LSE or UDC designation
- No commercial agreement
- Regulatory non-conformance
- Location identified as participating in another program

Note: The Comments box is limited to 255 characters.

The UDC may end their validation of the location(s) by choosing to [Cancel].
Invalid Review Disputed Location

A Disputed Location was unsuccessful in obtaining a valid review by one of the reviewing entities (LSE/UDC). The DRP must now determine from provided comments why they were unable to pass validation of the location submitted for review. When a location has not passed the LSE/UDC review it will be set to the status of Disputed and the reviewer contact information and comments can be viewed by the DRP in their Locations view when the location is highlighted.
To correct errors identified, the DRP must create a new location. The disputed Location is not editable but may be copied and updated with the corrected information. When saved or submitted, a new location with new Location ID will be created. The new location created must then be submitted for review and will be in **Pending** status until the review is complete.
If the DRP believe the location is valid with information provided and does not agree with the LSE or UDC findings, they must work with the entity that provided the comments to resolve the reason it was not found to be a valid location. The process for resolving the disputed location issues is managed outside of the ISO. The DRP is provided information through the review process needed to make direct contact with LSE or UDC to initiate resolution.

**LSE/UDC Review notification**

Example of email notification to the LSE and UDC when a location has been submitted for review.

```
From: no-reply@calso.com [mailto:no-reply@calso.com]
Sent: Friday, August 05, 2016 4:00 PM
To: LSE or UDC Primary Contact
Cc: LSE or UDC Secondary Contact
Subject: Location Submitted

The following location has been submitted for the review process.
Location Id: 542712000001
Location Name: TEST_API_RD_19
SAN: Test API RD 19
DRP: 
UDC: 
LSE: 
SUBLAP: 
START DATE: 2018-01-01 00:00:00.0
END DATE: 2018-01-05 00:00:00.0
STATUS: Pending
```
Application Programming Interface (API) Location Management

The DRRS provides APIs for the performance of all location management processing. Market Participants can perform the following using the DRRS web services:

- Retrieve DRRS Locations
- Save request for creating draft/new DRRS Locations
- Delete request for deleting the draft/new DRRS Locations
- Submit request for creating/end-dating DRRS Locations
- Review request for reviewing DRRS Locations (for LSE/UDC/LSE&UDC review)
- Modify request for modifying DRRS Locations
- Initiate Defend request for defending for a DRRS Location
- Review Defend request for reviewing the DRRS Location that is under defend process (for DRP review)
- Retrieve status for the creation or modification requests

Technical ISO Interface Specifications with more detailed information are available on the CAISO website at CAISO.com for the Demand Response Registration System.  

---

Creating a Registration

After the LSE and UDC have reviewed and approved the Location(s), the DRP can then create a registration. The Register feature allows the DRP to register a location or multiple locations. Locations can only be registered when they are in the inactive, and active statuses.

There are 2 approaches to register a location or multiple locations.
Approach 1:
- Under the DRP View select Locations
- Select the required locations
- Click on the Register button
- On the Registration screen, input the data and save/submit.
DEMAND RESPONSE USER GUIDE

Effective Date: 10/31/2018

Version No.: 4.5

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The following is a description of the fields requested for input to create a Registration:

- **Name**  DRP chosen name of the Registration. May contain alphanumeric and special characters, up to a max of 255
- **Start Date**  The Start Date cannot be a prior date. Only Locations with start dates before and end dates after will be generated as Available Locations for selection
- **End Date**  The End Date cannot be a prior date or overlap with an existing Active location with same SAN and UDC assignment
- **DRP**  Demand Response Provider ID
- **UDC**  Utility Distribution Company ID
- **LSE**  Load Serving Entity ID
- **Baseline Method**  The Baseline Method that will be used to determine the performance of the Resource. This requires approval by the CAISO. Only the approved Performance Evaluation Method (baseline) will be available from the drop down.
- **SubLAP**  The SubLAP in which all the locations within the registration reside
- **DLAP**  The Default LAP of the LSE for locations within the registration. This will be auto generated based on selections provided in other required fields

---

7 The system validates effective dates input for the Registration against Location effective dates to determine available Locations that can be registered.

8 The system uses DRP, UDC, LSE and SubLAP information provided to ensure Locations presented as available have the same designations.
• **DRP SCID**  The ID of the acting Scheduling Coordinator for the Registrations market Resource.

• **Program**  Proxy DR or Reliability DR

• **Resource Type**  Predefined or Custom.
  - Available Locations will be filtered based on the Resource Type selection. When selecting Custom, only Locations with PNODE information can be selected for the Registration.
  - **Custom Resource ID**
    - If the DRP believes that the pre-defined Resource ID is not sufficient for its needs, the DRP selects or requests a custom Resource ID be assigned when the Registration is created. The information provided in the DRRS during the Registrations creation, including PNodes and their applicable Distribution Factors, is to develop the Custom Resource ID.
For an example (applicable for a PDR or RDRR): A DRP requests a custom Resource ID for 4 end use Loads that have the same LSE and are located in the same Sub-LAP. Based on historic Load of these 4 end use customers, 80% of the Load is connected to Bus 1 and 20% of the Load is connected to Bus 2.

Here is how it will look:

<table>
<thead>
<tr>
<th>Customer</th>
<th>LSE</th>
<th>Sub-LAP</th>
<th>Location</th>
<th>Registration</th>
<th>GDF</th>
<th>Custom DR Resource ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>PGF1</td>
<td>Bus 1</td>
<td>Reg 01</td>
<td>0.8</td>
<td>PRMNTE_6_PDRC01</td>
</tr>
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</tr>
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<td>Bus 2</td>
<td>Reg 01</td>
<td>0.2</td>
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**Requesting a Custom Resource ID with Dynamic GDF**

- If approved by the CAISO, a DRP may submit GDFs as part of its Bid for a given PDR or RDRR. In order to be eligible to submit GDFs as part of a Bid, the DRP must request and receive approval from the CAISO to dynamically Bid GDFs. To request a custom GDF, please contact the PDR coordinator at pdr@caiso.com with the following information: Location of bus, and total MW. The custom GDF can be deployed based on the Master File deployment.
• **Resource**
  - When Resource Type = Pre Defined
    - The drop-down list will show available resources that can be selected based on Registration information provided including Resource IDs previously assigned to the DRP and unassigned Pre Defined resource IDs for the identified SubLAP.
  - When Resource Type = Custom
    - The drop-down list will be blank. Once the Registration is submitted, notify the PDR Coordinator. The PDR coordinator will update the resource id in DRRS and provide it to the DRP. The Resource ID will not be visible until it is assigned to that Registration in the DRRS by the PDR coordinator.

• **Show/Refresh Available Location**

The system will generate a list of available Locations, to select from, based on the information provided when creating a Registration.

  - To select more than 25 location, in the **Available Locations**, change the number of **Rows** from 25 to 200. This will allow you to move more than 25 rows to the available locations.

  - Move available locations to **Selected Locations**.
Available Locations can be selected individually or in total to create the Registration.

Drop down list includes: current DRP resource IDs or available pre-defined resource IDs for selected SubLAP. This will be blank if Custom is selected.
Distribution Factors for Custom Resource

If the Resource Type selected is Custom, the system generated list of available Locations, to select from, will only include locations that have been assigned a PNode. When creating this Registration, the DRP must assign distribution factors for PNodes identified. PNodes will be populated in the Distribution Factor window based on the Locations selected to be registered. The Edit button in this window provides the DRP with the opportunity to assign a Distribution Factor to each of the PNodes. The Distribution Factor must indicate the percent of load reduction that will be occur at each PNode represented as a two decimal precision level. Distribution Factors across all PNodes provided must total 1.00. The SC shall provide the Pnode and Distribution Factors used to create the custom Resource ID and the Registration in the DRRS to RDT@caiso.com when submitting the GRDT form.
Save and Submit.

If the Baseline Method is a Control Group, a minimum of 150 Control Group Locations and at least 1 Treatment Group must be selected. See the Business Requirements Specifications for more details on the requirements for Baselines.

Note: DRRS limits 200 locations per registration unless this is loaded using the API.
Once the Registration information is complete, Locations have been selected and Distribution Factors updated (for custom resource id), the options to proceed include:

- **Cancel** - cancels the creation of the Registration
- **Save** - creates a new Registration and Registration ID for it.
- **Submit** - creates a new Registration and Registration ID for it and submits for registration.

Once the new Registration information has been created and saved or submitted, a new **Registration ID (Reg ID)** will be generated.

When saved, the locations **Status** will be displayed as **New**.
When submitted, the locations **Status** will be displayed as **Confirmed**.
• Approach 2:
  o Under the DRP View, select Registrations then click on the Create button.
o Input registration data.
The following is a description of the fields requested to create a Registration:

- **Name**  DRP chosen name of the Registration. May contain alphanumeric and special characters, up to a max of 255

- **Start Date**  The Start Date cannot be a prior date. Only Locations with start dates before and end dates after will be generated as Available Locations for selection

- **End Date**  The End Date cannot be a prior date or overlap with an existing Active location with same SAN and UDC assignment

- **DRP**  Demand Response Provider ID

- **UDC**  Utility Distribution Company ID

- **LSE**  Load Serving Entity ID

- **Baseline Method**  The Baseline Method that will be used to determine the performance of the Resource. This require approval by CAISO. Only the approved Performance Evaluation or Baseline Method will be available from the drop down.

- **SubLAP**  The SubLAP in which all the locations within the registration reside

- **DLAP**  The Default LAP of the LSE for locations within the registration. This will be auto generated based on selections provided in other required fields

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9 The system validates effective dates input for the Registration against Location effective dates to determine available Locations that can be registered.

10 The system uses DRP, UDC, LSE and SubLAP information provided to ensure Locations presented as available have the same designations.
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• **Resource Type**  Predefined or Custom.
  o Available Locations will be filtered based on the Resource Type selection. When selecting Custom, only Locations with PNODE information can be selected for the Registration.

  o **Custom Resource ID**
    ▪ If the DRP believes that the pre-defined Resource ID is not sufficient for its needs, the DRP selects or requests a custom Resource ID be assigned when the Registration is created. The information provided in the DRRS during the Registrations creation, including PNodes and their applicable Distribution Factors, is to develop the Custom Resource ID. This information is automatically provided from the DRRS to the applicable business unit that will then match this Registration information with the submitted Generator Resource Data Template.
For an example (applicable for a PDR or RDRR): A DRP requests a custom Resource ID for 4 end use Loads that have the same LSE and are located in the same Sub-LAP. Based on historic Load of these 4 end use customers, 80% of the Load is connected to Bus 1 and 20% of the Load is connected to Bus 2.

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- If approved by the CAISO, a DRP may submit GDFs as part of its Bid for a given PDR or RDRR. In order to be eligible to submit GDFs as part of a Bid, the DRP must request and receive approval from the CAISO to dynamically Bid GDFs. To request a custom GDF, please contact the PDR coordinator at pdr@caiso.com with the following information: Location of bus, and total MW. The custom GDF can be deployed based on the Master File deployment.
• **Resource**
  
  o **When Resource Type = Pre Defined**
    ² The drop-down list will show available resources that can be selected based on Registration information provided including Resource IDs previously assigned to the DRP and unassigned Pre Defined resource IDs for the identified SubLAP
  
  o **When Resource Type = Custom**
    ² The drop-down list will be blank. Once the Registration is submitted, DRP/SC shall notify the PDR Coordinator. The PDR coordinator will then update the DRRS and provide the resource id to the DRP. The Resource ID will not be visible until it is assigned to that Registration in the DRRS by the PDR coordinator.

• **Show/Refresh Available Location**

  The system will generate a list of available Locations, to select from, based on the information provided when creating a Registration.

  o To select more than 25 location, in the **Available Locations**, change the number of **Rows** from 25 to 200. This will allow you to move more than 25 rows to the available locations.
Move available locations to **Selected Locations**.

- **Available Locations** can be selected individually or in total to Create the Registration.

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Distribution Factors for Custom Resource

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- Save and Submit.
• If the Baseline Method is a Control Group, a minimum of 150 Control Group Locations and at least 1 Treatment Group must be selected. See the Business Requirements Specifications for more details on the requirements for Baselines.

Note: DRRS will not accept more than 200 locations per registration unless this is loaded using the API.
Generation Data Template Submission and Processing

Resource management requires interfacing with the Masterfile and Resource Modeling processes. Resource modeling sets up and maintains resource characteristics and scheduling coordinator assignments used in the market and systems to reliably operate the grid. Once the Registration is in the confirmed status, the DRP must follow this process and timelines associated with it to establish a PDR/RDRR in the Masterfile or to make updates to an existing PDR/RDRR attributes. The Masterfile maintains all resource attributes used in the markets and is the system of record for resource participation.

The Generator Resource Data Template (GRDT) is used to submit requests to add or change specific operating parameters that reside in the Master File. All GRDTs shall be sent to the RDT@caiso.com. For updates to existing data, scheduling coordinators must make any changes on the RDT downloaded from the Master File user interface or application programming interface. Scheduling Coordinators then submit updated templates using the user interface UPLOAD function or the programming interface SUBMIT services.

Custom Resource ID

After the SC has successfully create a registration in DRRS for the “Custom” Resource type, the SC shall submit the GRDT to RDT@caiso.com. The SC must provide the Registration ID in the “Comment” column, the Resource ID (blank) and the SC/DRP can determine any name for the Resource Name (RES_NAME). If Resource ID = Resource Name, leave the Resource Name blank.

The CAISO will notify the SC with the Resource ID and the effective date in Master File.

---

Registration Levels

The CAISO will provide the ability to allow changes to the underlying end use Load customers without having to issue a new Resource ID to the DRP. Registration levels were created to allow flexibility for the DRP to revise its end use customers associated with a PDR or RDRR, without having to request a new Resource ID. The registration level will also allow easier application of the baseline, as will be explained below. The key aspect of the registration level is that the meter data for both the baseline and the event day will need to be submitted to the CAISO at the registration level of the Resource ID.

The Demand Response Registration System allows the DRP to create registrations. These registrations must maintain the same standards as the overarching PDR or RDRR with underlying Load represented by the same LSE and located in the same Sub-LAP. Each registration must represent participation in the same market(s), and for a RDRR the registration must have the same real-time dispatch option (marginal or discrete) and seasonal term designation.

Since Registrations can be effective dated, changes to underlying locations can be staged to maintain sequential confirmed Registrations for a given Resource ID minimizing risk of participation gaps for the PDR/RDRR. This allows for ongoing changes to occur at the registration level with limited impact to the effective date of the PDR or RDRR in the Master File when Registrations are changing based on underlying Location effective date changes. It is the DRPs responsibility to ensure that changes are made to the Master File to accurately represent their PDR/RDRR market participation capabilities including the resources PMax, DLAP, and or effective end date.

The CAISO will take automated measures to identify and correct cases where there is an effective PDR/RDRR Resource ID in the Masterfile without a valid DLAP or a corresponding effective Registration in the DRRS. This correction may include:

- End-dating of the identified Resource ID
- Updating the DLAP for the corresponding Resource ID

Any Master File update may take 10 business days to implement.
The Masterfile maintains the discrete dispatch selection for RDRR resources. The discrete dispatch status may be selected once during a Reliability Demand Response Services season (winter/summer). A season is a 6 month period (summer and winter). Once selected, the status shall be maintained throughout the season. The discrete dispatch flag may be selected once within a season such that after the initial season selection, selection updates can be made ONCE in subsequent seasons.

- Summer season runs from June through September
- Winter season runs from October through May

Additionally, for RDRR Masterfile set up the following requirements apply:

- Each RDRR must have a minimum of 500 kW of load reduction.
- Each RDRR may choose a Discrete Real-Time Dispatch Option once each season. Non-selection defaults RDRR to the Marginal Real-Time Dispatch Option which must remain until the end of the season.
- The maximum load curtailment for a resource that selects the Discrete Real-Time Dispatch Option shall be no larger than 50 MW. There is no maximum for RDRR selecting the Marginal Real-Time Dispatch Option.
- Each RDRR must reach its maximum load curtailment within forty (40) minutes after it receives a Dispatch Instruction, and must be capable of providing Demand Response Services for at least four (4) consecutive hours per Demand Response Event.
- Each RDRR must have a minimum run time of no more than one (1) hour.
Telemetry

Telemetry is a requirement of market participation for a PDR with a rated capacity (Pmax) greater than or equal to 10 MW. It is also required for a PDR that requests certification to provide non-spinning and spinning reserve at any rated capacity (Pmax). To make a request, the DRP/SC shall submit information to initiate the Resource Modeling process through the Resource Interconnection Management System (RIMS) application. In RIMS, select the Request Type = “NRI Project Details Form” and complete the form as instructed on the “NRI Quick Start Guide” for RIG Reconfiguration.

Telemetry request shall follow the Full Network Model schedule.

The following additional information may be requested for a PDR that requires telemetry.

<table>
<thead>
<tr>
<th>Telemetry and/or Custom Resource ID</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Details submitted to <a href="mailto:PDR@caiso.com">PDR@caiso.com</a> upon receiving it from DRP</td>
<td>Yes, applicable for PDR telemetry</td>
</tr>
<tr>
<td>IFC Electrical Drawings Document Title: SLD (See Guide Above)</td>
<td>Yes, applicable for PDR telemetry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Telemetry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Block Diagram Document Title: CommBlock (See Guide Above)</td>
<td>Yes, Applicable for PDR telemetry request</td>
</tr>
<tr>
<td>AT&amp;T IP or ISP static address Document Title: RIGDetails (See Guide Above)</td>
<td>Yes, Applicable for PDR telemetry request</td>
</tr>
<tr>
<td>Resource owner approval of the RIG Database spreadsheet of required telemetry points** Document Title: InitialRIGDB</td>
<td>Yes, Applicable for PDR telemetry request for PDR</td>
</tr>
<tr>
<td>Control Room Info - 24/7 contact information Document Title: 24HourContact</td>
<td>Required</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Device Certificate Request Form for RIGs</td>
<td>Yes, Applicable for PDR telemetry request</td>
</tr>
<tr>
<td>Email notification from resource owner stating site has witnessed and approved of the RIG pretesting.</td>
<td>Yes, Applicable for PDR telemetry request Note: Demand Response Provider notification as resource owner</td>
</tr>
<tr>
<td>Email notification to schedule CAISO end-to-end test</td>
<td>Yes, Applicable for PDR telemetry request</td>
</tr>
<tr>
<td>CPS Subscriber Agreement for Remote Intelligent Gateways</td>
<td>Yes, PDR telemetry Note: one agreement will be applicable for multiple resources</td>
</tr>
<tr>
<td>Network Connectivity Security Requirements and Agreement Document Title: ECN Agreement (See Guide Above)</td>
<td>Yes, PDR telemetry Note: one agreement will be applicable for multiple resources</td>
</tr>
<tr>
<td>Telemetry testing completed</td>
<td>Yes, Applicable for PDR telemetry</td>
</tr>
</tbody>
</table>
Registration Management

The registration process builds from Performance/Baseline Methodology to location to registration to resource management. Registration management includes the development of registration(s) by the DRP that identify the locations participating, in aggregate, as a PDR or RDRR for an effective period of time. Location information established, including its effective dates, control availability for their use by the DRP in creating registrations. The DRRS provides a robust UI and API's for the DRP(s) use in performing their Registration development and management tasks. System generated email notifications are also generated as alerts to activities occurring that may require their attention.

DRRS User Interface (UI) Registration Management

The DRP may use either the Location view or Registration view to register one or multiple locations. The Registration view provides the DRP a list of all the Registrations created and saved or submitted with their Status. When highlighted, the view will list all Locations included in that Registration. When using the UI, DRRS limits to 200 locations per registration unless this is loaded using the API.
Edit

To **Edit** a registration from the registration view, the DRP must first select the Registration to be edited then click on the **Edit** button under their Registrations View.

A Registrations Status will affect how it can be edited.
Once the Registration is edited, the options to proceed include:

- **Cancel** - Cancels Edit of the Registration.
- **Update** - Updates the Registration maintaining its Registration ID.
Copy

The **Copy** feature allows the DRP to create a new registration by copying an existing registration and making changes to the copied field information. Registrations in any status may be copied. To **Copy** a registration, the registration is first selected then the **Copy** button chosen under the Registrations View.

Note: If using this functionality for extending out a registration on a registration that is approaching end-date, verify the information including the Resource ID is the same and locations are not used in another registration prior to submitting.

The Copy option takes the user to the Registration window and provides the same Options as Create registration:
- **Cancel** - cancels the creation of a new registration.
- **Save** - creates a new registration with changes and registration ID for it.
Terminate

The **Terminate** feature allows the DRP to end-date a Registration. Registrations can only be end-dated when they are in the Confirmed status. To **Terminate**, the Registration is first selected then the **Terminate** button chosen under the Registration View.

Once **Terminate** is selected, the Registration to be end-dated will be identified and a confirmation to delete is required by selecting the **Continue** button.

A Registration is in a Terminate status when its effective end date is prior to the current date. Terminated Registrations are logically equivalent to deleted records. A Terminated Registration can be Copied but not Edited.
Delete

The Delete feature allows the DRP to delete a new Registration that are in draft (NEW) status. To Delete a Registration, the new Registration is first selected then the Delete button chosen under the Registrations View.
Once **Delete** is selected, the Registration to be deleted will be identified and a confirmation to delete is required by selecting the **Continue** button.

A deleted Registration and its created Registration ID will no longer exist in the Registrations View.
DRRS User Interface (UI) Resource Management

View of confirmed Registration in DRRS with Resource ID selected:

Resource ID for the Registration selected or edited in DRRS.
Application Programming Interface (API) Registration and Resource Management

The DRRS provides APIs for the performance of all Registration management processing. Market Participants can retrieve or submit the following Registration data via the DRRS web services:

- Retrieve status for the creation or modification requests
- Retrieve DRRS Registrations
- Save request for creating new DRRS Registrations
- Delete request for deleting the /new DRRS Registrations
- Submit request for creating/terminating (end-date) DRRS Registrations
- Modify request for modifying (edit) DRRS Registrations

Technical ISO Interface Specifications with more detailed information are available on the CAISO website at CAISO.com for the Demand Response Registration System.\(^\text{12}\)

\(^{12}\) Link directly to document at time of User Guide publication http://www.caiso.com/Documents/DemandResponseLocationRegistrationEnhancement-TechnicalSpecificationsv4REDLINED.pdf. If link is no longer working, search for document at CAISO.com.
Market Results Interface-Settlements (MRI-S)

With the implementation of Energy Storage and distributed energy resources (ESDER) phase 2 initiative on November 1, 2018, the DRS application will be retired and the scheduling coordinator shall calculate the baseline and submit performance and load values to MRI-S.


Demand Response Energy Measurements (DR Energy Measurements)

The Scheduling Coordinator will submit Settlement Quality Meter Data for the resulting demand Response Energy Measurements (DREM) using the approved Performance/Baseline Evaluation Methodologies into the Market Results Interface-Settlements System (MRI-S). Per Business Practice Manual (BPM) for Metering section 12.7, “DREM represents performance of the resources in response to a schedule or dispatch and will be used for the market settlement calculation”. In addition, Proxy Demand Response providing Ancillary Services must submit actual load data for the interval preceding, during, and following the trading intervals for which they were awarded ancillary services. The SQMD must be submitted at a 5-minute granularity.

The SC must submit the Customer Baseline Load (CBL), as applicable and the underlying load data used in the baseline calculation for all baseline methods.

The SC shall submit 90 days of historical data leading to the day of the event.
The DRP/SC shall determine a Demand Response event interval as beginning with a first interval of non-zero Total Expected Energy (TEE) and when the TEE returns to zero. These events can be viewed in the Customer Market Results Interface (CMRI).

DREM for PDRs and RDRRs will only be settled in intervals where their TEE is greater than zero. In cases where DREM is less than zero within a 5-minute interval, that measurement will be submitted as zero. If DREM values submitted for Settlement Intervals with no TEE, the Settlements System will not use the data.

The new Performance/Baseline measurement types will be used to submit information to the CAISO. The chart below outlines the data requirements for each Performance Evaluation Methodology (PEM).

### Baseline Methods and Measurement Type mapping:

<table>
<thead>
<tr>
<th>Measurement Type</th>
<th>Data Granularity</th>
<th>Baseline Method</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>LOAD</td>
<td>5 minute</td>
<td>• Control Group</td>
<td>AS Resource only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Day Matching 5/10 (Residential Only)</td>
<td>This is the actual load for Ancillary Services award and is included in the data that is submitted as MBMA for the same DR event. Both LOAD and MBMA data sets are required for no pay calculations, even though the LOAD data is included in the MBMA data set.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Day Matching 10/10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Day Matching Combined</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Weather Matching</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Meter Generation Output with 10 in 10</td>
<td></td>
</tr>
<tr>
<td>GEN</td>
<td>5 minute</td>
<td>• Control Group</td>
<td>Demand Response Energy Measurement (DREM) or Performance data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Day Matching 5/10 (Residential Only)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Day Matching 10/10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Day Matching Combined</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Weather Matching</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Meter Generation Output</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Meter Generation Output with 10 in 10</td>
<td></td>
</tr>
</tbody>
</table>
| MBMA   | 5 minute | • Control Group  
• Day Matching 5/10 (Residential Only)  
• Day Matching 10/10  
• Day Matching Combined  
• Weather Matching  
• Meter Generation Output with 10 in 10 | AS Resource Only  
This is the actual load data for the interval preceding, during, and following the trading intervals for which they were awarded ancillary services. |
| CBL    | Hourly   | • Control Group  
• Day Matching 5/10 (Residential Only)  
• Day Matching 10/10  
• Day Matching Combined  
• Weather Matching  
• Meter Generation Output with 10 in 10 | For monitoring only.  
Underlying load data used in the baseline calculation for all baseline methods. 90 days of historical data leading to the day of the event is required. |
| TMNT   | Hourly   | • Control Group  | For monitoring Only  
Data submitted only for Control Group baseline method and represents the actual load data for those locations that is included in the treatment group. |

**Meter Data Submission**

SQMD must be submitted for those trade dates when the resource has received an award for Spinning or Non-Spinning Reserves, Energy, or has otherwise been dispatched in Real Time. Meter Data submission must follow the timelines set forth in CAISO Tariff Section 10 and the CAISO published settlement calendar. The User must submit all meter data in **XML** format. The XML format details are listed on the “MRI-S – Technical Specifications – Meter Data”. See Business Practice Manual (BPM) for Metering section 12.7.1 for information on submitting meter data.
Outage Management System (OMS) Submission

In regards to PDR/RDRR resources, OMS outages can be submitted for the following:

- a PDR/RDRR resource for short term outages,
- to remove them from the market due to exceptionally low load, or
- is unable to provide AS

A scheduling coordinator can also submit long term outages for 6 months or greater if they want to temporarily remove a PDR/RDRR resource from the market without the need to update or reregister the resource later.

PDR/RDRR resources are allowed to have outages but will be limited to the following:

- update to a resources ramp rates, or
- modifying the capacity to 0

PDR/RDRR resources are an all or nothing resource, which limits how much a resource can be derated. They are also prevented from submitting a rerated of their PMin.

OMS is used to enforce these business rules. The system allows PDR/RDRR resource to submit only PMax derates or Ramp Rate derates. Any other data entered in OMS through either the UI or API for a PDR Resource ID shall return an error message. It also has a validation to restrict PMax derates entries for PDR/RDRR Resource IDs to be only 0 MWs. A PMax derate is used to indicate a day should not be used in the baseline calculation. Since a day is either valid or invalid, no partial derates are permitted. Any PMax value other than 0 MWs entered in OMS through either the UI or API for a PDR/RDRR Resource ID shall return an error message. Cause codes are no longer required.
In order to keep a resource ID active and reduce the need to make updates to the CAISO Master File, the DRP using their scheduling coordinator can submit extended outages to derate their resource to 0 MW when they do not wish to participate in the market.
### Helpful Links

<table>
<thead>
<tr>
<th>Document</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application access request forms and application installation instructions</td>
<td><a href="http://www.caiso.com/Documents/Application%20access%20request%20forms%20and%20application%20installation%20instructions">http://www.caiso.com/Documents/Application%20access%20request%20forms%20and%20application%20installation%20instructions</a></td>
</tr>
<tr>
<td>Demand Response Location Registration (DRRS) Training</td>
<td><a href="http://www.caiso.com/Documents/EnablingDemandResponse_DemandResponseLocationRegistration.pdf">http://www.caiso.com/Documents/EnablingDemandResponse_DemandResponseLocationRegistration.pdf</a></td>
</tr>
<tr>
<td>Direct Telemetry BPM</td>
<td><a href="http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Direct">http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Direct</a> Telemetry</td>
</tr>
</tbody>
</table>
## External User Application Access request Form

## Information Request Sheet to initiate a Demand Response Provider agreement with the ISO

## ISO Connected Entity Service Guide

## List of certified SC’s

## List of Demand Response Participants

## Load and Demand Response Page
- [http://www.caiso.com/participate/Pages/Load/Default.aspx](http://www.caiso.com/participate/Pages/Load/Default.aspx)

## Load Serving Entity Request (LSE ID) Form
- [http://www.caiso.com/Documents/LoadServingEntityIDRequestForm.doc](http://www.caiso.com/Documents/LoadServingEntityIDRequestForm.doc)
<table>
<thead>
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<th>Resource</th>
<th>URL</th>
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<tbody>
<tr>
<td>Meter Service Agreement ISO Metered Entities Information Request Sheet</td>
<td><a href="http://www.caiso.com/Documents/MeterServiceAgreement_ISOMeteredEntitiesInformationRequestSheet.doc">http://www.caiso.com/Documents/MeterServiceAgreement_ISOMeteredEntitiesInformationRequestSheet.doc</a></td>
</tr>
<tr>
<td>Meter Service Agreement Scheduling Coordinators Information Request Sheet</td>
<td><a href="http://www.caiso.com/Documents/MeterServiceAgreement_SchedulingCoordinatorsInformationRequestSheet.doc">http://www.caiso.com/Documents/MeterServiceAgreement_SchedulingCoordinatorsInformationRequestSheet.doc</a></td>
</tr>
<tr>
<td>Metering BPM</td>
<td><a href="http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Metering">http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Metering</a></td>
</tr>
<tr>
<td>Point of Contact (POC) form</td>
<td><a href="http://www.caiso.com/Documents/Point%20of%20contact%20establishment%20and%20requirements">http://www.caiso.com/Documents/Point%20of%20contact%20establishment%20and%20requirements</a></td>
</tr>
<tr>
<td>Requirements for becoming and Scheduling Coordinator</td>
<td><a href="http://www.caiso.com/participate/Pages/SchedulingCoordinator/Default.aspx">http://www.caiso.com/participate/Pages/SchedulingCoordinator/Default.aspx</a></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Requirements for becoming and SC</td>
<td><a href="http://www.caiso.com/participate/Pages/SchedulingCoordinator/Default.aspx">http://www.caiso.com/participate/Pages/SchedulingCoordinator/Default.aspx</a></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DRRS Enhancement - Demand Response Registration system customer partnership group meeting artifacts including presentation material</td>
<td><a href="http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=AE0100B2-98B1-4343-98A3-8690014C03B">http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=AE0100B2-98B1-4343-98A3-8690014C03B</a></td>
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Revision History

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<tr>
<th>Date</th>
<th>Version</th>
<th>Updated By</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/23/15</td>
<td>3.7</td>
<td>Monica</td>
<td>Added “The ALOC functionality will fully replace the concept of pseudo locations. Existing Pseudo locations would be converted to both a location and an ALOC in DRRS“ to the “Information Required When Applying for a Resource ID” section.</td>
</tr>
<tr>
<td>03/24/15</td>
<td>3.7</td>
<td>Monica</td>
<td>Added info on BUS Pnode</td>
</tr>
</tbody>
</table>
| 03/25/15   | 3.7     | Monica     | Added the following info to the LSE and UDC Commenting on a Registration sections  

Note: The Comments box is limited to 255 characters. If the LSE review generates comments larger than 255 characters.  
When a comment is provided by the LSE indicating that there is a “review with findings” within the registration information, the CAISO will deny the registration. The DRP is required to resolve any issues related to the "findings" with the appropriate party. During that time, additional detail may be exchanged by parties to resolve all issues determined in the review process.  
CAISO’s responsibility is to look for general comments as to why there is an issue with the registration and therefore does not require listing of multiple SANs that may be in conflict with availability to participate. The 255 character limitation should be sufficient to provide the CAISO with enough information to deny the
registration and request issue resolution be made between the parties outside of the registration process. If the CAISO determines that there is error in the registration detail that needs to be corrected by the DRP, the registration will be denied as a means to alert the DRP of corrective actions that are being requested by the CAISO.

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Author</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>06/04/15</td>
<td>3.8</td>
<td>Monica M.</td>
<td>Updated the sections pertaining to requesting for a DRP/LSE/UDC ID and OMS.</td>
</tr>
<tr>
<td>06/05/15</td>
<td>3.9</td>
<td>Monica M.</td>
<td>Added clarifying language for terminating location(s)/ALOC(s).</td>
</tr>
<tr>
<td>11/05/15</td>
<td>3.9</td>
<td>Monica M.</td>
<td>Incorporated the Jill’s Demand Response Resource Participation Guide into the current Demand Response User Guide document and removed the original document off the external site.</td>
</tr>
<tr>
<td>04/12/16</td>
<td>3.10</td>
<td>Monica M.</td>
<td>Added clarifying language for Reliability Demand Response Services Term. Summer term runs from June through September – Winter term runs from October through May.</td>
</tr>
<tr>
<td>4/19/16</td>
<td>3.11</td>
<td>Monica M.</td>
<td>Updated link on page 129 regarding the XML test materials. <a href="http://www.caiso.com/Pages/documentsbygroup.aspx?GroupId=6A0B3CBD-4EE0-4BCD-B44F-CBB9E711D31F">http://www.caiso.com/Pages/documentsbygroup.aspx?GroupId=6A0B3CBD-4EE0-4BCD-B44F-CBB9E711D31F</a></td>
</tr>
<tr>
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<td>Version</td>
<td>Author</td>
<td>Notes</td>
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<td>------------</td>
<td>---------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>10/01/16</td>
<td>4.0</td>
<td>Jill Powers</td>
<td>Updated User Guide to include information related to the Enabling Demand Response Phase II for the PDR/RDRR Registration functionality transfer from DRS to DRRS. Updates to include new baseline and statistical sampling methodologies approved as part of Energy Storage and Distributed Energy Resource Initiative.</td>
</tr>
<tr>
<td>12/06/16</td>
<td>4.1</td>
<td>Monica M.</td>
<td>Updated the section on “Generation Resource Data Template Submission and Processing”. Going forward, all GRDTs shall be submitted to <a href="mailto:RDT@caiso.com">RDT@caiso.com</a> and no longer to <a href="mailto:pdr@caiso.com">pdr@caiso.com</a>.</td>
</tr>
<tr>
<td>12/13/16</td>
<td>4.2</td>
<td>Monica M.</td>
<td>Updated the Market Participation chart under Customer Baseline Methodology.</td>
</tr>
<tr>
<td>5/5/2017</td>
<td>4.3</td>
<td>Tim B.</td>
<td>Completed unfinished sentence on last bullet of page 170 and changed page 84 to remove RDRR from statement regarding necessity of telemetry.</td>
</tr>
<tr>
<td>10/26/2018</td>
<td>4.4</td>
<td>Pia S.</td>
<td>Updated User Guide to include information related to the Energy Storage and Distributed Energy Phase II for the PDR/RDRR process and application.</td>
</tr>
</tbody>
</table>
Appendix A – 3 Possible Cases of the Defend Process

1. If Incumbent DRP **accepts** the Prospective DRP claim to the customer.
   1) The Location for the SAN will be in "Duplicate" status.
   2) The Incumbent DRP end dates the Location for the SAN.
   3) The current Location status changes from “Duplicate” to “Pending” for the prospective DRP
   4) The Prospective DRP will receive an email notification from DRRS.*
   5) The Prospective DRP creates a registration after the Location has been approved by the LSE and UDC.

2. Incumbent DRP **rejects** the Prospective DRP claim to the customer.
   1) The Location for the SAN will remain in the "Duplicate" status as the Incumbent DRP still owns the Location in an "Active" or "Inactive" status. The Prospective DRP can end date or delete the Location or leave it as-is.
   2) The Prospective DRP must contact the Incumbent to resolve the duplicate use conflict outside of the ISO registration process. The Location will remain in the “Duplicate” status until such time that it is edited by the Prospective DRP
   3) The Prospective DRP will receive an email notification from DRRS.*

3. Incumbent DRP takes **no action** within the 10 business days window.
   1) The system will automatically end-date the Locations and Registration for the incumbent DRP.
   2) The current Location status changes from “Duplicate” to “Pending” for the prospective DRP.

   Refer to Case 1.

* The email notification from DRRS will be sent out the following day, and to only to those that are currently registered in the database. See DRRS Automated Email Notification section, page 20.
Appendix B – Editable field(s) by Locations Status

Locations Status

<table>
<thead>
<tr>
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</thead>
<tbody>
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<td>Fields</td>
<td>Validation Rules</td>
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<tr>
<td>Start Date</td>
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<td>Yes</td>
</tr>
<tr>
<td>End Date</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Address (1 and/or 2)</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>City</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>State</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Zip</td>
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<td>Yes</td>
</tr>
<tr>
<td>LOC ID</td>
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<td>Yes</td>
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<tr>
<td>SAN</td>
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<td>Yes</td>
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<tr>
<td>DRP</td>
<td></td>
<td>Yes</td>
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<td>UDC</td>
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<td>Yes</td>
</tr>
<tr>
<td>SUBLAP</td>
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<td>Yes</td>
</tr>
<tr>
<td>PNODE</td>
<td></td>
<td>Yes</td>
</tr>
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</table>
### Pending

Cannot be edited. The Pending Location(s) only allows for end dating.

### Duplicate

Cannot be edited. The Duplicate Location(s) only allows for end dating.

### Inactive

<table>
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<th>Fields</th>
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<tbody>
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<td>THEN Yes ELSE No</td>
</tr>
<tr>
<td>End Date</td>
<td>IF Update &lt; Existing/Recorded</td>
<td>THEN Yes ELSE No</td>
</tr>
<tr>
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<tr>
<td>City</td>
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<tr>
<td>SAN</td>
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</table>

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### Active Fields

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<tbody>
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<td>No</td>
</tr>
<tr>
<td>End Date</td>
<td>IF Update &lt; Existing/Recorded THEN Yes ELSE No</td>
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</tr>
<tr>
<td>Address</td>
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