### Revision History

<table>
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<th>Revision</th>
<th>Date</th>
<th>Description</th>
<th>Author</th>
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<tr>
<td>V1.0</td>
<td>07/22/2011</td>
<td>Initial Draft</td>
<td>Russell Miller</td>
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1. Introduction

The Reliability Demand Response Product (RDRP) is a wholesale demand response product that enables emergency responsive demand response resources to integrate into the California ISO market and operations. The RDRP concept is borne out of a multi-party, cross-industry CPUC approved settlement agreement that resolves a myriad of issues concerning the quantity, use, and the resource adequacy treatment of retail emergency-triggered demand response programs.

As directed by the settlement agreement, the RDRP design ensures compatibility with, and the integration of, existing retail emergency-triggered demand response programs, such as interruptible load programs, direct-load control programs like air-conditioning cycling, and agriculture pumping programs. The RDRP design will allow RDRP resources to offer energy economically in the day-ahead market, and offer any remaining uncommitted capacity thereafter as energy in the real-time through the ISO’s hour-ahead scheduling process. Enabling RDRP resources to participate in the day-ahead market allows the ISO to capture additional value from resources that have the ability to respond economically in the day-ahead timeframe yet can curtail additional load in the real-time when required under a system or local emergency. This feature enables the full available capacity of RDRP resources to participate in the ISO market.

The RDRP is designed to integrate large-single or aggregated demand response resources that may be configured to offer energy economically in the day-ahead market, and, as a minimum requirement, can respond to a reliability event for the delivery of reliability energy in real-time. Such dispatches are expected to be infrequent and with limited notice under certain stressed system conditions as specified in ISO Emergency Operating Procedures.

This document is intended to provide participants additional information during the implementation phase. The contents will be updated as necessary as the implementation moves forward, particularly including the outcome of the ISO’s request for clarification, rehearing, and compliance filings in RM10-17 (FERC Order 745). The information ultimately contained in Tariff, BPMs, Technical Specifications and/or other formal documents supersedes any information contained in this implementation plan.
2. Registration Process

The Reliability Demand Response registration process is based on the existing Proxy Demand Resource registration process. The bullets below identify some of the more significant changes. Please see the following link for further details: https://bpm.caiso.com/bpm/prr/show/PRR000000000459

Agreement Updates

- With the implementation of RDRP, there will be only one Demand Response Provider Agreement – which will cover both PDR and RDRP (see PRR 459, Metering BPM, Section 12)

- For existing PDRs, there is no need to re-execute the agreement, unless the Demand Response Provider also represents PDRs and desires to have a single agreement covering both resource types (see PRR 459, Metering BPM, Section 12)

Registration Attributes

- RDRRs may be registered as either Discrete or Non-Discrete Real-Time Dispatch (see PRR 459, Metering BPM, Section 12)

- Multi-season registration roll-over functionality has been implemented for RDRRs (see PRR 459, Metering BPM, Section 12)

- Limits on RDRR Sizes (see PRR 459, Metering BPM, Section 12. Market Instruments, Section 5)
  - Load Reduction Max/Min
  - Minimum Run Time (One Hour)
  - Maximum Run Time (Four Hours)
  - RDRP resources must be capable of reaching their maximum curtailment capability (PMax) within 40-minutes of an ISO instruction.

- Termination – RDRRs are not allowed to terminate during an active season (see PRR 459, Metering BPM, Section 12)

3. Bidding

New SIBR rules have been implemented with the introduction of RDRP. The following is a high-level description of those rules. Additional information can be found in PRR 455 (see link above from Section 2) and at the following location: http://www.caiso.com/27ab/27ab6e875c2e0.html
Reliability Demand Response Resources are not allowed to submit a Self-Schedule Bid in Real-Time. Any Day-Ahead awards for the resource will automatically become a self-schedule for the applicable Real-Time hour.

Discrete-dispatch resources may only submit a single segment (defined by 2 pairs) Energy Bid Curve in real-time. Reliability Demand Response Resources that have not selected the discrete option can still submit multiple bid segments in real-time.

RDRP-Discrete resources may be no larger than 50 MW.

When submitting energy bids in real-time, Energy offer prices for RDRRs must be between 95%-100% of the maximum Energy Bid price stated in the ISO Tariff.

Reliability Demand Response Resources are not eligible to participate in RUC.

Reliability Demand Response Resources are not allowed to provide Ancillary Services.

4. Metering

The performance methodology is similar to that for PDR, but an alternative baseline methodology will be introduced with the RDRP implementation. The following describes this and other important changes in more detail.

- Using the default baseline, performance of a Reliability Demand Response Resource is generally established through a pre-determined baseline calculation using the last 10 non-event days with a look back window of 45 days and a bidirectional morning adjustment capped at 20%.

- With the implementation of RDRP, a Demand Response Provider representing an RDRR may submit a written application to the ISO for approval of a methodology for deriving Settlement Quality Meter Data, referred to in the Metering BPM as Generation Data, for the RDRR that consists of a statistical sampling of Energy usage data. (ISO Tariff Section 10.1.7)

- No direct telemetry will be required for RDRRs, regardless of resource size.

- Utilization of RDRRs will be monitored by the ISO. A reporting process will be implemented in the Demand Response System (DRS) to track and report on resource performance and utilization of RDRRs.

5. Outage

Outage reporting mechanisms for RDRRs are similar to those for PDRs; however a new cause code has been added to support reporting of utilization of RDRRs for local distribution emergencies.
Scheduling Coordinators must submit an outage when an RDRR is utilized by the utility for local distribution emergencies. This will designate the day as an event day and will prevent it from being used in future performance baseline calculations.

Please see the following link for additional details of the PRR affecting the Outage BPM: https://bpm.caiso.com/bpm/prr/show/PRR0000000000451

6. Settlements

Implementation of the Reliability Demand Response Product will not require a change to the current settlement configuration. However, there is a small documentation change to the BPM Configuration Guide for RUC No Pay, which is addressed in Protocol Revision Request 451.

Please see the following link for additional details on the PRR affecting the Settlements and Billing BPM: https://bpm.caiso.com/bpm/prr/show/PRR0000000000451

7. Technical Specifications

The ISO has published XSDs, WSDLs and associated documentation for SIBR and Master File to the ISO website. These have been discussed in detail at the Technical Users Group; however, they are listed here for reference.

SIBR Technical Documents
- SIBR Business Rules for Bidding v4.5.1
- Release Notes for SIBR Business Rules for Bidding v4.5.1

Master File Technical Documents
- Interface Specification for Master File Data Exchange Services v.2.7
- Master File Generator Artifacts v2.7

DRS Technical Documents
- Technical Interface Specification for DRS Exchange Services v1.0.1
- PDRMeterDataXSD v201111001

Please see the following link for additional information: http://www.caiso.com/27ab/27ab6e875c2e0.html
8. Business Requirements

The ISO has posted an updated external version of the Business Requirements Specification (BRS) document to the website. The BRS describes the additional business-level detail on the functionality that the ISO is building.


9. Tariff

The ISO filed the Reliability Demand Response Tariff on May 20, 2011 in Docket ER11-3616-0000. Per the filing, the ISO has respectfully requested that the Commission make the tariff revisions to the demand response provider agreement effective as of October 1, 2011. Further, the ISO has requested the remainder of the proposed tariff revisions be effective as of April 1, 2012. Granting that October 1, 2011 effective date with respect to the demand response provider agreement will give the ISO and market participants sufficient time to prepare for the planned implementation of the reliability demand response product on April 1, 2012, including time for the investor-owned utilities to conduct their communication, conversion, and registration process prior to the planned operation date, consistent with the understanding that was reached with stakeholders during the policy development process. A Commission order on the entire set of tariff revisions has therefore been respectfully requested by October 1, 2011.

The tariff filing can be found at the following link: http://www.caiso.com/Documents/ERC%20filings%20-%20May2011/AmendmentImplementReliabilityDemandResponseResourceProductinDocketNoER11-3616-000.pdf

10. Testing and Market Simulation

The ISO will perform internal testing and conduct a market simulation for market participants.

Testing

The ISO will test the new and affected systems, processes, and reports affected by the implementation of the Reliability Demand Response Product. To ensure the market simulation testing effort is effective and helpful, the ISO will request that any interested market participants communicate their interest to the ISO. This request will be described in detail in the Market Simulation Plan.

Market Simulation

The ISO will offer simulation of pertinent aspects of the following areas of the RDRP implementation. Additional details will be provided in the Market Simulation plan.
11. BPM Updates

The following matrix highlights the BPMs and BPM sections that have been identified as impacted by the Reliability Demand Response Project. The BPM draft language has been published and is in the protocol revision request process. Please note, the protocol revision request process is on-going and it is possible that additional BPMs (or other sections of previously identified BPMs) have been identified for changes. Please see the following link for the most current information: https://bpm.caiso.com/bpm/prr/list

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<th>Topic</th>
<th>BPM</th>
<th>Section</th>
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<td>No eligibility for Ancillary Service</td>
<td>Market Instruments</td>
<td>Section 3</td>
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<tr>
<td>Day-Ahead and Real-Time Energy Bids</td>
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<td>Market Instruments</td>
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<td>Ramp rate and start-up time</td>
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<td>Exclusion of RDRRs from Market Power Mitigation process</td>
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<td>Section 6</td>
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12. Training

The ISO has scheduled a virtual training web conference for the Reliability Demand Response Product on August 18, 2011. The ISO may consider additional training sessions on future dates based on participant interest.

Training documentation will be posted at the following link when available: http://www.caiso.com/participate/Pages/Training/default.aspx

13. Deployment Activities and Key Milestones

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<td>Business Requirement Specifications Published</td>
<td>March 29, 2011</td>
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<tr>
<td>Draft Tariff Language Posted</td>
<td>March 9, 2011</td>
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<tr>
<td>Tariff Filed with FERC</td>
<td>May 20, 2011</td>
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<tr>
<td>Technical Specifications Published</td>
<td>June 30, 2011</td>
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<td>Draft BPM Protocol Revision Requests Posted</td>
<td>June 30, 2011</td>
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<td>Bid to bill validation</td>
<td>September 19-23</td>
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<tr>
<td>Code Implemented in Production Market Systems</td>
<td>October 1, 2011</td>
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<tr>
<td>Demand Response System</td>
<td>October monthly release</td>
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<tr>
<td>Reliability Demand Response Resources Effective</td>
<td>April 1, 2012</td>
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