

December 18, 2013

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**Re: California Independent System Operator Corporation  
Docket Nos. ER06-615-\_\_\_\_ and ER07-1257-\_\_\_\_  
Revised Market Disruption Report**

Dear Secretary Bose:

The California Independent System Operator Corporation (ISO) hereby submits a revised report covering Market Disruptions reportable events under Section 7.7.15 of its FERC Electric Tariff (ISO Tariff) that occurred from September 16, 2013 to October 15, 2013.<sup>1</sup> The ISO has updated the report to provide information concerning the need to removed bids from a resource for a limited period of time on September 18, to prevent further market disruptions relating to the ISO's deployment of the updated model build deployed on that same date. The ISO is obligated to provide information on bid removal in its market disruption report pursuant to Section 7.7.15.4.

Please contact the undersigned with any questions.

Respectfully submitted,

**By: /s/ Anna McKenna**

Nancy Saracino  
General Counsel  
Roger Collanton  
Deputy General Counsel  
Anna McKenna  
Assistant General Counsel  
California Independent System  
Operator Corporation  
250 Outcropping Way  
Folsom, CA 95630  
Tel: (916) 608-7182  
Fax: (916) 608-7222  
[amckenna@caiso.com](mailto:amckenna@caiso.com)

---

<sup>1</sup> The ISO submits the Market Disruption report pursuant to *California Independent System Operator Corp.*, 126 FERC ¶ 61,211 (2009), and Section 7.7.15.4 of the ISO Tariff.



California ISO  
Shaping a Renewed Future

**Revised  
Market Disruption Report  
September 16, 2013  
to  
October 15, 2013**

December 18, 2013

ISO Market Quality and Renewable Integration

---

California ISO  
250 Outcropping Way  
Folsom, California 95630  
(916) 351-4400

## I. Background

A Market Disruption is an action or event that causes a failure of a CAISO Market, related to system operation issues or System Emergencies.<sup>1</sup> Pursuant to Section 7.7.15 of the ISO Tariff, the California Independent System Operator Corporation (ISO or CAISO) can take one or more of a number of specified actions in the event of a Market Disruption, to prevent a Market Disruption, or to minimize the extent of a Market Disruption. The ISO reports Market Disruption occurrence in any of the following circumstances:

- When any of the ISO market processes fail to publish, including the Integrated Forward Market (“IFM”), Residual Unit Commitment (“RUC”), Hour-Ahead Scheduling Process (“HASP”), Real-Time Unit Commitment (“RTUC”), or Real-Time Dispatch (“RTD”) processes;
- When the ISO manually overrides the closing of the Day-Ahead Market; or
- Any time that the ISO removes Bids from a CAISO Market to prevent a Market Disruption or to minimize the extent of a Market Disruption.

The Market Disruption report contains the following information:

- The frequency and types of actions taken by the ISO pursuant to Section 7.7.15;
- The nature of the Market Disruptions that caused the ISO to take action, or the Market Disruptions that were successfully prevented or minimized by the ISO as a result of taking action, and the ISO’s rationale for taking such actions pursuant to Section 7.7.15;
- Information about the Bids (including Self-Schedules) removed pursuant to Section 7.7.15 (*i.e.*, megawatt quantity, point of interconnection, specification of the Day-Ahead versus Real-Time Bid, and Energy or Ancillary Services Bid); and
- The ISO’s rationale for its removal of Bids (including Self-Schedules) pursuant to Section 7.7.15.<sup>2</sup>

---

<sup>1</sup> These system operation issues or System Emergencies are referred to in Sections 7.6 and 7.7, respectively, of the ISO Tariff. ISO Tariff, Appendix A, definition of Market Disruption. Capitalized terms not otherwise defined herein have the meanings set forth in the ISO Tariff.

<sup>2</sup> *Id.* at P 29 & n.29.

**II. Report on Market Disruptions Occurring from September 16, 2013 through October 15, 2013**

The ISO’s report on Market Disruptions that occurred during the time period from September 16, 2013 through October 15, 2013, is provided in Table 1 and Attachment A below. Attachment A includes an entry for each reportable Market Disruption event and each entry also indicates:

- (1) The date of the Market Disruption;
- (2) The hour and Dispatch Interval when the Market Disruption ended;
- (3) The type of CAISO Market in which the Market Disruption occurred; and
- (4) A description of the nature of the Market Disruption, the nature of any actions taken by the ISO, the rationale for such actions, and the Market Disruption prevented or minimized as a result of taking such actions.

For each of the CAISO Markets, Table 1 lists the number of Market Disruptions and the number of times that the ISO removed Bids (including Self-Schedules) during the time period covered by this report. As shown in Table 1, there were a total of 85 Market Disruptions for the reporting period, all of which occurred in the real-time. Table 1 also indicates that the ISO did not remove any Bids (including Self-Schedules) in any of its markets during the reporting period.

**Table 1: Summary of Market Disruption Report**

Type of CAISO Market	Market Disruption or Reportable Events	Removal of Bids (including Self-Schedules)
<b>Day-Ahead</b>		
IFM	0	0
RUC	0	0
<b>Real-Time</b>		
Real-Time Unit Commitment Interval 1	10	0
Real-Time Unit Commitment Interval 2	5	0
Real-Time Unit Commitment Interval 3	7	0
Real-Time Unit Commitment Interval 4	4	0
Real-Time Dispatch	59	0

Table 1 and Attachment A indicate that there were 5 HASP disruptions and 21 RTUC disruptions during this reporting period.

The frequency of RTD failures in this report was 59. Out of the 59 market disruptions, there were about 19 failures on September 18 and 16 failures on September 19 due to DB66 implementation issues. The RTD failures increased significantly from 29 during the last reporting period to 59. There were about 26

failures during this reporting period due to planned maintenance of software in RTD, HASP and RTUC combined.

On September 18, during the deployment of DB 66, there was an inadvertent misalignment between the Master File and the Full Network Model. This misalignment caused the indexing in the database used by the real-time application to be wrong which, in turn, caused numerous market disruptions as reflected in Attachment A. In order to prevent further market disruptions, the ISO removed bids on behalf of a particular resource in order to successfully run the market without any further disruptions. The resource was made non-participating—no bids on behalf of the resource were utilized in the market-- on binding interval 9/18/2013 from 7:40 AM to 10:30 AM in the Real-Time market. Although the bids were determined to be causing the market disruptions, the underlying reason had nothing to do with the resource or the bids but rather the ISO's deployment of DB 66.

## **ATTACHMENT A**

**California Independent System Operator Corporation  
Market Disruption Report  
November 15, 2013**

**Table 1: Market Disruptions, Nature of Actions Taken by the California ISO, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions**

Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
1	9/16/2013	15	3	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
2	9/16/2013	15	4	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
3	9/17/2013	1	1	RTUC	RTUC failed due to HIS failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
4	9/17/2013	24	9	RTD	RTD results were blocked and previous solution used. Previous solution - Software Error
5	9/17/2013	24	10	RTD	RTD results were blocked and previous solution used. Previous solution - Software Error
6	9/17/2013	24	12	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
7	9/18/2013	1	2	HASP	HASP did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
8	9/18/2013	1	3	RTUC	RTUC failed due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
9	9/18/2013	1	4	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
10	9/18/2013	1	11	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
11	9/18/2013	1	12	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
12	9/18/2013	2	1	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages

Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
13	9/18/2013	2	1	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
14	9/18/2013	2	2	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
15	9/18/2013	2	2	HASP	HASP did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
16	9/18/2013	2	3	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
17	9/18/2013	2	4	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
18	9/18/2013	2	5	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
19	9/18/2013	2	6	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
20	9/18/2013	2	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
21	9/18/2013	5	2	HASP	HASP did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
22	9/18/2013	5	5	RTD	RTD failed due application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
23	9/18/2013	5	6	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Software failure. Unplanned outages
24	9/18/2013	10	11	RTD	RTD failed due application problem. Loss clearing payload and LMP filled from previous good interval.
25	9/18/2013	10	12	RTD	RTD failed due application problem. Loss clearing payload and LMP filled from previous good interval.
26	9/18/2013	11	1	RTD	RTD failed due application problem. Loss clearing payload and LMP filled from previous good interval.
27	9/18/2013	22	7	RTD	RTD results were blocked and previous solution used.
28	9/18/2013	22	8	RTD	RTD results were blocked and previous solution used.
29	9/18/2013	22	9	RTD	RTD results were blocked and previous solution used.



Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
30	9/18/2013	23	1	RTD	RTD results were blocked and previous solution used.
31	9/18/2013	23	10	RTD	RTD results were blocked and previous solution used.
32	9/18/2013	24	3	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval. Planned maintenance of software
33	9/18/2013	24	4	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval. Planned maintenance of software
34	9/19/2013	1	1	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
35	9/19/2013	1	1	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval. Planned maintenance of software
36	9/19/2013	1	2	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
37	9/19/2013	1	2	HASP	HASP did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval. Planned maintenance of software
38	9/19/2013	1	3	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
39	9/19/2013	1	3	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval. Planned maintenance of software
40	9/19/2013	1	4	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
41	9/19/2013	1	5	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
42	9/19/2013	1	6	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
43	9/19/2013	1	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software

Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
44	9/19/2013	1	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
45	9/19/2013	2	4	RTD	RTD failed due application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
46	9/19/2013	2	5	RTD	RTD failed due application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
47	9/19/2013	2	6	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
48	9/19/2013	2	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
49	9/19/2013	2	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
50	9/19/2013	2	9	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
51	9/19/2013	15	3	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
52	9/19/2013	15	4	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
53	9/19/2013	24	4	RTD	RTD results were blocked and previous solution used.
54	9/20/2013	1	1	RTUC	RTUC failed due to HIS failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
55	9/21/2013	1	1	RTUC	RTUC failed due to HIS failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
56	9/22/2013	1	1	RTUC	RTUC failed due to HIS failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
57	9/23/2013	1	1	RTUC	RTUC failed due to HIS failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
58	9/24/2013	1	1	RTUC	RTUC failed due to HIS failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
59	9/24/2013	14	4	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.

Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
					Planned maintenance of software
60	9/24/2013	14	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
61	9/24/2013	14	9	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
62	9/25/2013	1	1	RTUC	RTUC failed due to HIS failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
63	9/25/2013	17	3	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned and mandatory backup site switching
64	9/25/2013	17	3	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
65	9/25/2013	17	4	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
66	9/25/2013	17	4	RTUC	RTUC failed due to HIS failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
67	9/25/2013	18	1	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
68	9/25/2013	18	2	HASP	HASP did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
69	9/25/2013	18	3	RTUC	RTUC failed due to application time-out. Loss clearing payload and LMP filled from previous good interval.
70	9/30/2013	3	5	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
71	9/30/2013	15	4	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
72	10/8/2013	15	3	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval. Planned maintenance of software
73	10/9/2013	11	6	RTD	RTD failed due to application time-out. Loss clearing payload and LMP filled from previous good interval.
74	10/9/2013	11	7	RTD	RTD failed due to application time-out. Loss clearing payload and LMP filled from previous good interval.
75	10/9/2013	11	8	RTD	RTD failed due to application time-out. Loss clearing payload and LMP filled from previous

Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
					good interval.
76	10/10/2013	17	3	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
77	10/10/2013	17	3	RTUC	RTUC did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval. Planned maintenance of software
78	10/10/2013	17	4	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
79	10/10/2013	17	5	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
80	10/10/2013	17	6	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
81	10/10/2013	17	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
82	10/10/2013	17	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
83	10/13/2013	19	1	RTD	RTD results were blocked and previous solution used.
84	10/14/2013	16	5	RTD	RTD failed due application problem. Loss clearing payload and LMP filled from previous good interval.
85	10/14/2013	16	6	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.

Notes:
Integrated Forward Market (IFM): The Day-Ahead Market run in which the ISO conducts the market for purchases and sales of Energy for all hours of the next Trading Day based on submitted supply and demand bids, and performs the procurement of Ancillary Services.
Residual Unit Commitment (RUC): The Day-Ahead Market run in which the ISO conducts unit commitment of additional resources based on submitted availability bids and the forecast of demand for every hour of the next Trading Day.
Real-Time Unit commitment (RTUC) Interval 1: The first of a series of four market runs conducted every Trading Hour in advance of the Operating Hour. In this run the ISO conducts the Market Power Mitigation and Reliability Requirement Determination for submitted Bids, which applies to all of the Real-Time Market processes for the given Trading Hour. In this interval the ISO also conducts the procurement of incremental Ancillary Services from internal resources and dynamic external resources.
Real-Time Unit commitment (RTUC) Interval 2: The second of a series of four market runs conducted every Trading Hour in advance of the Operating Hour during which the ISO conducts the HASP. In the HASP, the ISO conducts the procurement and sale of Energy and Ancillary services from non-dynamic System Resources based on submitted Bids and the CAISO Forecast of CAISO Demand. In this interval the ISO also conducts the advisory procurement of incremental Ancillary Services from internal resources and dynamic external resources from T to T+60 minutes and procurement for the given Trading Hour.
Real-Time Unit commitment (RTUC) Interval 3: The third of a series of four market runs conducted every Trading Hour. During this interval the ISO conducts the commitment of internal Short-Start and Fast Start Units for the Time Horizon of T-30 minutes to T+240 minutes. In this interval the ISO also conducts the procurement of incremental Ancillary Services from internal resources and dynamic external resources for the given Trading Hour.
Real-Time Unit commitment (RTUC) Interval 4: The fourth of a series of four market runs conducted every Trading Hour. This interval is for the Real-time Unit Commitment for the T-105 minutes to T+60 minutes time horizon. In this interval the ISO also conducts 15-minute Ancillary Service Awards for non-Hourly System Resources, internal resources and dynamic external resources for the given Trading Hour.
Real-Time Dispatch (RTD): The five minute interval of any given Operating Hour during which the ISO conducts the market for Energy based on submitted bids and the CAISO Forecast of CAISO Demand.

## CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon the parties listed on the official service list in the captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California this 18<sup>th</sup> day of December 2013.

*Asl Anna Pascuzzo*

Anna Pascuzzo