



California Independent  
System Operator Corporation

May 16, 2011

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-\_\_\_  
Market Disruption Report**

Dear Secretary Bose:

The California Independent System Operator Corporation (ISO) hereby submits its Feb/Mar report covering Market Disruptions reportable events under Section 7.7.15 of its FERC Electric Tariff (ISO Tariff) that occurred from March 16, 2011 to April 15, 2011.<sup>1</sup>

Please contact the undersigned with any questions.

Respectfully submitted,

**By: /s/ Anna McKenna**

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<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

# **Market Disruption Report March 16, 2011 to April 15, 2011**

May 16, 2011

ISO Department of Market Services

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## 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 interprets this to mean that a Market Disruption occurs and the ISO is obligated to report its 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>

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<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 March 16, 2011 through April 15, 2011**

The ISO’s report on Market Disruptions that occurred during the time period from March 16, 2011 through April 15, 2011, 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 74 Market Disruptions for the reporting period, all of which occurred in the Real-Time Market (RTM). The number of Market Disruptions increased as compared with the April 2011 report. 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	2	0
Real-Time Unit Commitment Interval 2	6	0
Real-Time Unit Commitment Interval 3	12	0
Real-Time Unit Commitment Interval 4	1	0
Real-Time Dispatch	53	0

Table 1 and Attachment A indicate that there were 21 instances of RTUC failures, including 6 HASP failures. The count of RTUC failures and HASP

failures increased by 4 compared with the April 2011 Report. Most of the RTUC failures (including the HASP failures) were caused by software application failure, software application not running, and database issue. The frequency of RTD failures increased to 53 from 11 of such instances reported in the April 2011 Report. Most of the RTD failures were due to software application failure, software application timing out, database issue, and broadcast results failure. RTD failures accounted for approximately 72 percent of all of the Market Disruptions during this reporting period.

On March 19, nine RTD failures occurred due to either connection lost contact or time out. At the same day two RTUC failures occurred due to either bids not coming in or time out.

On March 22, seven RTD failures occurred due to either connection lost contact or database concurrency issues. On the same day one HASP failures occurred due to time out.

On March 23, six RTD failures occurred due to database issues. At the same day one HASP failure and four RTUC failures occurred with intervals filled either automatically or interactively.

On March 29, five RTD failures and five RTUC failures occurred due to new DB model deployment.

On April 12, six RTD failures occurred due to broadcast errors. At the same day one RTUC failure and one HASP failure occurred due to broadcast timing out and bids not coming in, respectively.

On February 8, 2011, the ISO suspended the following intertie locations from the list of convergence bidding eligible locations due to real-time physical schedule cuts:

INTERM1G\_7\_N501  
GONDER\_2\_N501  
MONA\_3\_N501  
MARKETPL\_5\_N501  
MEADN\_2\_N501  
MEAD\_5\_N501  
WESTWING\_5\_N501  
FOURCORN\_3\_N501  
MCCULLGX\_5\_N501

The ISO exercised its authority under Section 7.9, 7.7.15 and 31.8 of the ISO tariff. The rules implemented to enforce tariff section 31.8 do not work at the identified suspended locations. The suspension continues until further notice.

## **ATTACHMENT A**

**California Independent System Operator Corporation  
Market Disruption Report  
May 16, 2011**

**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	3/17/2011	12	2	HASP	HASP failed due to paging space issue. ISO issued a notice through the Market Notification System instructing resources to follow Day-Ahead Schedules and Awards for interties. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. Any incremental or decremental Real-Time Energy at the interties beyond the Day-Ahead Schedules that was not dispatched by the ISO is treated as an Operational Adjustment (Tier 2) for Settlement purposes.
2	3/18/2011	18	2	RTD	RTD did not run due to connection lost contact. Loss clearing payload and LMP filled from last good interval.
3	3/18/2011	24	2	RTD	RTD did not run due to connection lost contact. Loss clearing payload and LMP filled from last good interval.
4	3/19/2011	1	3	RTD	RTD time out due to database lock. Loss clearing payload and LMP filled from last good interval.
5	3/19/2011	1	3	RTUC	RTUC did not run due to HASP savecase timeout. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this
6	3/19/2011	1	4	RTD	RTD time out. Loss clearing payload and LMP filled from last good 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
7	3/19/2011	1	5	RTD	RTD time out. Loss clearing payload and LMP filled from last good interval.
8	3/19/2011	1	6	RTD	RTD time out. Loss clearing payload and LMP filled from last good interval.
9	3/19/2011	1	7	RTD	RTD time out. Loss clearing payload and LMP filled from last good interval.
10	3/19/2011	5	2	RTD	RTD did not run due to connection loss. Loss clearing payload and LMP filled from last good interval.
11	3/19/2011	17	2	RTD	RTD did not run due to connection lost contact. Loss clearing payload and LMP filled from last good interval.
12	3/19/2011	19	2	RTD	RTD did not run due to connection lost contact. Loss clearing payload and LMP filled from last good interval.
13	3/19/2011	20	2	RTD	RTD time out. Loss clearing payload and LMP filled from last good interval.
14	3/19/2011	23	3	RTUC	RTUC did not run due to bids not coming in. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this
15	3/21/2011	11	2	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
16	3/21/2011	19	2	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
17	3/22/2011	1	2	RTD	RTD did not run due to connection lost contact. Loss clearing payload and LMP filled from last good interval.
18	3/22/2011	4	2	RTD	RTD did not run due to connection lost contact. Loss clearing payload and LMP filled from last good 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
19	3/22/2011	6	2	RTD	RTD did not run due to connection lost contact. Loss clearing payload and LMP filled from last good interval.
20	3/22/2011	18	1	RTD	RTD failed due to database concurrency issues. Loss clearing payload and LMP filled from last good interval.
21	3/22/2011	18	2	RTD	RTD failed due to database concurrency issues. Loss clearing payload and LMP filled from last good interval.
22	3/22/2011	18	2	HASP	HASP failed due to time out. ISO issued a notice through the Market Notification System instructing resources to follow Day-Ahead Schedules and Awards for interties. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. Any incremental or decremental Real-Time Energy at the interties beyond the Day-Ahead Schedules that was not dispatched by the ISO is treated as an Operational Adjustment (Tier 2) for Settlement purposes.
23	3/22/2011	18	7	RTD	RTD time out. Loss clearing payload and LMP filled from advisory results.
24	3/22/2011	18	11	RTD	RTD time out. Loss clearing payload and LMP filled from advisory results.
25	3/23/2011	4	3	RTUC	RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
26	3/23/2011	5	3	RTUC	RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
27	3/23/2011	6	2	HASP	HASP failed. ISO issued a notice through the Market Notification System instructing resources to follow Day-Ahead Schedules and Awards for interties. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. Any incremental or decremental Real-Time Energy at the interties beyond the Day-Ahead Schedules that was not dispatched by the ISO is treated as an Operational Adjustment (Tier 2) for Settlement purposes.

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
28	3/23/2011	6	3	RTUC	RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
29	3/23/2011	12	3	RTUC	RTUC timed out due to database crash. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
30	3/23/2011	12	4	RTD	RTD did not run due to database crash. Loss clearing payload and LMP filled from last good interval.
31	3/23/2011	12	5	RTD	RTD did not run due to database crash. Loss clearing payload and LMP filled from last good interval.
32	3/23/2011	12	6	RTD	RTD did not run due to database crash. Loss clearing payload and LMP filled from last good interval.
33	3/23/2011	17	1	RTD	RTD timed out due to database concurrency error. Loss clearing payload and LMP filled from last good interval.
34	3/23/2011	17	2	RTD	RTD did not run due to database concurrency error. Loss clearing payload and LMP filled from last good interval.
35	3/23/2011	18	2	RTD	RTD did not run due to database concurrency error. Loss clearing payload and LMP filled from last good interval.
36	3/26/2011	16	2	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
37	3/26/2011	16	2	HASP	HASP failed. ISO issued a notice through the Market Notification System instructing resources to follow Day-Ahead Schedules and Awards for interties. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. Any incremental or decremental Real-Time Energy at the interties beyond the Day-Ahead Schedules that was not dispatched by the ISO is treated as an Operational Adjustment (Tier 2) for Settlement purposes.
38	3/26/2011	16	3	RTD	RTD failed due to broadcast missing. Loss clearing payload and LMP filled from last good 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
39	3/27/2011	11	10	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
40	3/28/2011	20	4	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
41	3/29/2011	9	3	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
42	3/29/2011	9	3	RTUC	RTUC did not run. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this
43	3/29/2011	9	5	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
44	3/29/2011	9	7	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
45	3/29/2011	10	3	RTUC	RTUC did not run. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this
46	3/29/2011	16	3	RTUC	RTUC did not run due to bids not coming in. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this
47	3/29/2011	24	3	RTUC	RTUC did not run due to new DB model deployment. Loss clearing payload and LMP filled from last good interval.
48	3/29/2011	24	4	RTUC	RTUC did not run due to new DB model deployment. Loss clearing payload and LMP filled from last good interval.
49	3/29/2011	24	11	RTD	RTD did not run due to new DB model deployment. Loss clearing payload and LMP filled from last good interval.
50	3/29/2011	24	12	RTD	RTD did not run due to new DB model deployment. Loss clearing payload and LMP filled from last good 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
51	3/30/2011	1	1	RTUC	RTUC did not run due to new DB model deployment. Loss clearing payload and LMP filled from next good interval.
52	4/1/2011	21	2	RTD	RTD failed. Loss clearing payload and LMP filled from last good interval.
53	4/1/2011	24	2	HASP	HASP did not run due to bids not coming in. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this
54	4/2/2011	9	2	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
55	4/2/2011	9	3	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
56	4/2/2011	9	4	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
57	4/2/2011	9	5	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
58	4/2/2011	9	6	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
59	4/2/2011	9	7	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
60	4/2/2011	9	8	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
61	4/2/2011	9	9	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
62	4/2/2011	9	10	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good 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
63	4/5/2011	13	3	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
64	4/5/2011	14	7	RTD	Broadcast of RTD results missing. Loss clearing payload and LMP filled from last good interval.
65	4/6/2011	11	3	RTUC	RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
66	4/12/2011	1	2	RTD	Broadcast of RTD results missing. Loss clearing payload and LMP filled from last good interval.
67	4/12/2011	1	9	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
68	4/12/2011	1	10	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
69	4/12/2011	1	11	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
70	4/12/2011	1	12	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
71	4/12/2011	2	1	RTD	Broadcast of RTD results failed. Loss clearing payload and LMP filled from last good interval.
72	4/12/2011	2	1	RTUC	RTUC failed due to issues with broadcast timing out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
73	4/12/2011	2	2	HASP	HASP failed due to bids not coming in. ISO issued a notice through the Market Notification System instructing resources to follow Day-Ahead Schedules and Awards for interties. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. Any incremental or decremental Real-Time Energy at the interties beyond the Day-Ahead Schedules that was not

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
					dispatched by the ISO is treated as an Operational Adjustment (Tier 2) for Settlement purposes.
74	4/14/2011	16	3	RTUC	RTUC failed due to Bids not coming in. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this 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 16<sup>th</sup> day of May, 2011.

*Susan L. Montana*

Susan L. Montana