



California ISO
Your Link to Power

Market Disruption Report August 16 to September 15, 2009

October 15, 2009

ISO 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.¹ Pursuant to Section 7.7.15 of the CAISO Tariff, the ISO 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 Pre-Dispatch (“RTPD”), 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 7.7.15.²

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

² *Id.* at P 29 & n.29.

II. Report on Market Disruptions Occurring from August 16 through September 15, 2009

The ISO's report on Market Disruptions that occurred during the time period from August 16 through September 15, 2009, 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 44 Market Disruptions for the reporting period, which was slightly higher than the 40 Market Disruptions listed in the September 2009 Report. Table 1 also indicates that no reportable events occurred in the Day-Ahead Market (IFM or RUC) and that the ISO did not remove any Bids (including Self-Schedules) during the reporting period.

As shown in Table 1 and Attachment A, there were 26 total instances of RTPD failures, including 9 HASP failures. The RTPD failures (including HASP failures) accounted for 49 percent of all of the Market Disruptions during this reporting period. The count of RTPD failures increased by ten while the count of HASP failures increased by three compared with the September 2009 Report. Most of the RTPD failures (including HASP failures) were due to data issue or software variance. The ISO has implemented a procedure to reduce the HASP failures pending delivery of the software fix from the vendor.

During this reporting period, the number of RTD failures decreased slightly to 18 from the 24 such instances listed in the September 2009 Report. A total of 10 out of the 18 RTD failures occurred on September 2nd, which accounted for approximately 56 percent of total RTD failures from August 16 through September 15, 2009. On average there was less than one RTD failure per day. Most of the RTD failures were due to software variance, bid processing issue, or the software application timing out.

On September 2nd, due to a database issue driven by a hardware failure, the RTD application failed for eight continuous intervals starting from hour 3 interval 7 till hour 4 interval 2. This issue also caused three RTPD failures on that day which included a HASP failure. This issue was subsequently resolved.

Table 1: Summary of Market Disruption Report

Type of CAISO Market	Market Disruption or Reportable Events	Removal of Bids (including Self-Schedules)
Day-Ahead		
IFM	0	0
RUC	0	0
Real-Time		
Real-Time Pre-Dispatch Interval 1	7	0
Real-Time Pre-Dispatch Interval 2	9	0
Real-Time Pre-Dispatch Interval 3	7	0
Real-Time Pre-Dispatch Interval 4	3	0
Real-Time Dispatch	18	0

ATTACHMENT A

**California Independent System Operator Corporation
Market Disruption Report
October 15, 2009**

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	8/18/2009	16	1	RTPD	RTPD timed out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
2	8/19/2009	11	3	RTPD	RTPD timed out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
3	8/19/2009	15	2	HASP	Broadcast of HASP results 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.
4	8/19/2009	16	2	HASP	Broadcast of HASP results 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.
5	8/19/2009	16	3	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
6	8/19/2009	19	4	RTD	RTD did not run because the updated inputs process timed out. Loss clearing payload and LMP filled from last good interval.
7	8/20/2009	1	1	RTPD	RTPD timed out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
8	8/20/2009	12	1	RTPD	RTPD timed out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
9	8/20/2009	16	1	RTPD	RTPD timed out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
10	8/22/2009	12	2	RTD	RTD failed. Loss clearing payload and LMP filled from last good interval.
11	8/22/2009	12	4	RTPD	RTPD failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
12	8/25/2009	11	3	RTPD	RTPD timed out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
13	8/25/2009	18	2	HASP	Broadcast of HASP results failed. Market Disruption was limited to one interval. 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.
14	8/25/2009	18	3	RTPD	RTPD did not run. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
15	8/25/2009	18	4	RTPD	RTPD did not run. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
16	8/25/2009	19	3	RTPD	RTPD did not run. 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
17	8/25/2009	20	3	RTPD	RTPD failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
18	8/26/2009	23	2	HASP	HASP timed out. Market Disruption was limited to one interval. 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.
19	8/27/2009	15	7	RTD	RTD timed out. Loss clearing payload and LMP filled from last good interval.
20	8/28/2009	12	3	RTD	RTD timed out. Loss clearing payload and LMP filled from last good interval.
21	8/28/2009	13	2	HASP	HASP timed 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.
22	8/28/2009	14	2	HASP	HASP timed 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	9/1/2009	11	1	RTPD	Broadcast of RTPD results failed. 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
24	9/2/2009	1	2	HASP	HASP timed out due to database slowness. Market Disruption was limited to one interval. 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.
25	9/2/2009	1	3	RTPD	RTPD failed due to database slowness. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
26	9/2/2009	3	4	RTPD	RTPD failed because database was not available. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
27	9/2/2009	3	7	RTD	RTD timed out because the database was not available. Loss clearing payload and LMP filled from last good interval.
28	9/2/2009	3	8	RTD	RTD did not run because the database was not available. Loss clearing payload and LMP filled from last good interval.
29	9/2/2009	3	9	RTD	RTD did not run because the database was not available. Loss clearing payload and LMP filled from last good interval.
30	9/2/2009	3	10	RTD	RTD did not run because the database was not available. Loss clearing payload and LMP filled from last good interval.
31	9/2/2009	3	11	RTD	RTD did not run because the database was not available. Loss clearing payload and LMP filled from last good interval.
32	9/2/2009	3	12	RTD	RTD failed because the database was not available. Loss clearing payload and LMP filled from last good interval.
33	9/2/2009	4	1	RTD	RTD failed because the database was not available. 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
34	9/2/2009	4	1	RTPD	RTPD failed because database was not available. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
35	9/2/2009	4	2	RTD	RTD failed because the database was not available. Loss clearing payload and LMP filled from last good interval.
36	9/2/2009	4	2	HASP	HASP failed because the database was not available. Market Disruption was limited to one interval. 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.
37	9/2/2009	10	3	RTPD	RTPD failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
38	9/2/2009	11	4	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
39	9/2/2009	11	5	RTD	RTD did not run. Loss clearing payload and LMP filled from last good interval.
40	9/4/2009	13	6	RTD	RTD failed because the operational flags were reset in the contingency run for interval 5 hour ending 13. Loss clearing payload and LMP filled from last good interval.
41	9/4/2009	13	7	RTD	RTD failed because the operational flags were reset in the contingency run for interval 5 hour ending 13. Loss clearing payload and LMP filled from last good interval.
42	9/8/2009	4	2	HASP	HASP did not runt due to lack of bids data in two tables. Market Disruption was limited to one interval. 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
43	9/10/2009	1	1	RTD	RTD did not run due to longer than expected model promotion script. Loss clearing payload and LMP filled from last good interval.
44	9/10/2009	1	1	RTPD	Broadcast of RTPD results failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.
45	9/10/2009	1	2	RTD	RTD did not run due to longer than expected model promotion script. Loss clearing payload and LMP filled from last 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 Pre-Dispatch (RTPD) 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 Pre-Dispatch (RTPD) 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 Pre-Dispatch (RTPD) 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 Pre-Dispatch (RTPD) 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.					