



California Independent  
System Operator Corporation

May 17, 2010

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 March/April report covering Market Disruptions reportable events under Section 7.7.15 of its FERC Electric Tariff (ISO Tariff) that occurred from March 16, 2010 to April 15, 2010.<sup>1</sup>

Please contact the undersigned with any questions.

Respectfully submitted,

**/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  
Your Link to Power

# **Market Disruption Report March 16, 2010 to April 15, 2010**

May 17, 2010

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 CAISO 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 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.

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

## **II. Report on Market Disruptions Occurring from March 16, 2010 through April 15, 2010**

The ISO's report on Market Disruptions that occurred during the time period from March 16, 2010 through April 15, 2010, 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 63 Market Disruptions for the reporting period, all of which occurred in the Hour-Ahead Scheduling Process (HASP) or Real-Time Market (RTM). The number of market disruptions declined by 18 compared with the April 2010 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 and Attachment A indicate that there were 43 total instances of Real-Time Unit Commitment (RTUC) failures, including 2 HASP failures. The count of RTUC failures decreased by 19 and the count of HASP failures decreased by 5 compared with the April 2010 Report. Most of the RTUC failures (including HASP failures) were caused by software application failure, software application not running, software application timing out, Spring Release Patching, or broadcast of results failure. The frequency of Real-Time Dispatch (RTD) failures was relatively stable increasing only by 1 to 20 from 19 such instances reported in the April 2010 Report. Most of the RTD failures were due to databases and applications fall forward and fallback activities or spring software release patching. RTD failures accounted for approximately 32 percent of all of the Market Disruptions during this reporting period.

On March 18, the scheduling infrastructure business rules (SIBR), Integrated Forward Market (IFM) and RTM, ADS databases and applications fell back to Alhambra in HE 15, and nine market disruptions, including three consecutive RTUC failures and six consecutive RTD failures, occurred in HE 15

and HE 16. There were two other RTUC failures on the same day, which were not caused by the fall back activity. On March 22, two consecutive RTUC failures and four consecutive RTD failures occurred in HE 15 due to IFM/RTM, SIBR and Automated Dispatch System (ADS) falling forward to Folsom. There was another market disruption in HE 6 due to a software application failure. During the spring release patching on March 31, seven Market Disruptions occurred, including two RTUC failures and five consecutive RTD failures.

**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 | 3                                      | 0  |
| Real-Time Unit Commitment Interval 2 | 3                                      | 0  |
| Real-Time Unit Commitment Interval 3 | 30                                     | 0  |
| Real-Time Unit Commitment Interval 4 | 7                                      | 0  |
| Real-Time Dispatch                   | 20                                     | 0  |

## **ATTACHMENT A**

**California Independent System Operator Corporation  
Market Disruption Report  
May 17, 2010**

**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     | 3/16/2010 | 6    | 3        | RTUC   | RTUC did not run due to HASP robustness. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. |
| 2     | 3/16/2010 | 22   | 3        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                             |
| 3     | 3/16/2010 | 24   | 3        | RTUC   | RTUC did not run due to HASP robustness. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. |
| 4     | 3/17/2010 | 1    | 1        | RTUC   | Broadcast of RTUC results failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.        |
| 5     | 3/17/2010 | 1    | 2        | RTUC   | Broadcast of RTUC results failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.        |
| 6     | 3/17/2010 | 1    | 3        | RTUC   | Broadcast of RTUC results failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.        |
| 7     | 3/17/2010 | 1    | 4        | RTUC   | Broadcast of RTUC results failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.        |
| 8     | 3/17/2010 | 22   | 3        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                             |
| 9     | 3/18/2010 | 9    | 3        | RTUC   | RTUC timed out. 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  |
|-------|-----------|------|----------|--------|--|
| 10    | 3/18/2010 | 9    | 4        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.   |
| 11    | 3/18/2010 | 15   | 3        | RTUC   | RTUC did not run due to databases and applications falling back to Alhambra. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. |
| 12    | 3/18/2010 | 15   | 4        | RTUC   | RTUC did not run due to databases and applications falling back to Alhambra. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. |
| 13    | 3/18/2010 | 15   | 5        | RTD    | RTD did not run due to databases and applications falling back to Alhambra. Loss clearing payload and LMP filled from last good interval.  |
| 14    | 3/18/2010 | 15   | 6        | RTD    | RTD did not run due to databases and applications falling back to Alhambra. Loss clearing payload and LMP filled from last good interval.  |
| 15    | 3/18/2010 | 15   | 7        | RTD    | RTD did not run due to databases and applications falling back to Alhambra. Loss clearing payload and LMP filled from last good interval.  |
| 16    | 3/18/2010 | 15   | 8        | RTD    | RTD did not run due to databases and applications falling back to Alhambra. Loss clearing payload and LMP filled from last good interval.  |
| 17    | 3/18/2010 | 15   | 9        | RTD    | RTD did not run due to databases and applications falling back to Alhambra. Loss clearing payload and LMP filled from last good interval.  |
| 18    | 3/18/2010 | 15   | 10       | RTD    | RTD did not run due to databases and applications falling back to Alhambra. Loss clearing payload and LMP filled from last good interval.  |
| 19    | 3/18/2010 | 16   | 1        | RTUC   | RTUC did not run due to databases and applications falling back to Alhambra. 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   |
|-------|-----------|------|----------|--------|---|
| 20    | 3/21/2010 | 2    | 2        | HASP   | HASP did not run due to bid transfer failure. 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. |
| 21    | 3/21/2010 | 2    | 3        | RTUC   | Broadcast of RTUC results failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.   |
| 22    | 3/21/2010 | 17   | 4        | RTD    | RTD failed. Loss clearing payload and LMP filled from advisory results.   |
| 23    | 3/21/2010 | 21   | 3        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.  |
| 24    | 3/22/2010 | 6    | 3        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.  |
| 25    | 3/22/2010 | 15   | 3        | RTUC   | RTUC did not run due to databases and applications falling forward to Folsom. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.   |
| 26    | 3/22/2010 | 15   | 4        | RTUC   | RTUC did not run due to databases and applications falling forward to Folsom. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.   |
| 27    | 3/22/2010 | 15   | 5        | RTD    | RTD did not run due to databases and applications falling forward to Folsom. Loss clearing payload and LMP filled from last good interval.  |
| 28    | 3/22/2010 | 15   | 6        | RTD    | RTD did not run due to databases and applications falling forward to Folsom. Loss clearing payload and LMP filled from last good interval.  |
| 29    | 3/22/2010 | 15   | 7        | RTD    | RTD did not run due to databases and applications falling forward to Folsom. Loss clearing payload and LMP filled from last good interval.  |
| 30    | 3/22/2010 | 15   | 8        | RTD    | RTD did not run due to databases and applications falling forward to Folsom. 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   |
|-------|-----------|------|----------|--------|---|
| 31    | 3/23/2010 | 6    | 3        | RTUC   | RTUC failed due to solution infeasibility. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.  |
| 32    | 3/23/2010 | 22   | 3        | RTUC   | RTUC did not run. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.   |
| 33    | 3/23/2010 | 24   | 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. |
| 34    | 3/24/2010 | 22   | 3        | RTUC   | RTUC failed due to solution infeasibility. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.  |
| 35    | 3/25/2010 | 6    | 3        | RTUC   | RTUC failed due to solution infeasibility. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.  |
| 36    | 3/26/2010 | 2    | 3        | RTUC   | RTUC did not run due to HASP robustness. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.  |
| 37    | 3/26/2010 | 2    | 4        | RTUC   | RTUC did not run. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.   |
| 38    | 3/26/2010 | 6    | 3        | RTUC   | RTUC did not run due to HASP robustness. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.  |
| 39    | 3/26/2010 | 22   | 3        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.  |
| 40    | 3/27/2010 | 6    | 3        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.  |
| 41    | 3/27/2010 | 17   | 3        | RTUC   | RTUC timed out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.   |
| 42    | 3/27/2010 | 18   | 3        | RTUC   | RTUC timed out. 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  |
|-------|-----------|------|----------|--------|--|
| 43    | 3/27/2010 | 19   | 4        | RTUC   | RTUC timed out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                                  |
| 44    | 3/27/2010 | 19   | 9        | RTD    | RTD did not run due to databases restart. Loss clearing payload and LMP filled from last good interval.  |
| 45    | 3/27/2010 | 20   | 1        | RTUC   | RTUC did not run due to database restart. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.        |
| 46    | 3/28/2010 | 13   | 5        | RTD    | RTD did not run. Loss clearing payload and LMP filled from last good interval.   |
| 47    | 3/29/2010 | 6    | 3        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                                     |
| 48    | 3/29/2010 | 21   | 3        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                                     |
| 49    | 3/29/2010 | 22   | 3        | RTUC   | RTUC failed. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                                     |
| 50    | 3/29/2010 | 23   | 3        | RTUC   | RTUC did not run. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                                |
| 51    | 3/30/2010 | 1    | 1        | RTD    | RTD did not run due to database promotion. Loss clearing payload and LMP filled from next good interval.   |
| 52    | 3/30/2010 | 2    | 3        | RTUC   | RTUC did not run. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                                |
| 53    | 3/30/2010 | 20   | 3        | RTUC   | RTUC did not run. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                                |
| 54    | 3/30/2010 | 23   | 3        | RTUC   | RTUC timed out. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.                                  |
| 55    | 3/31/2010 | 23   | 3        | RTUC   | RTUC did not run due to Spring Release Patching. 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  |
|---|-----------|------|----------|--------|--|
| 56  | 3/31/2010 | 23   | 4        | RTUC   | RTUC did not run due to Spring Release Patching. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval. |
| 57  | 3/31/2010 | 23   | 5        | RTD    | RTD did not run due to Spring Release Patching. Loss clearing payload and LMP filled from last good interval.  |
| 58  | 3/31/2010 | 23   | 6        | RTD    | RTD did not run due to Spring Release Patching. Loss clearing payload and LMP filled from last good interval.  |
| 59  | 3/31/2010 | 23   | 7        | RTD    | RTD did not run due to Spring Release Patching. Loss clearing payload and LMP filled from last good interval.  |
| 60  | 3/31/2010 | 23   | 8        | RTD    | RTD did not run due to Spring Release Patching. Loss clearing payload and LMP filled from last good interval.  |
| 61  | 3/31/2010 | 23   | 9        | RTD    | RTD did not run due to Spring Release Patching. Loss clearing payload and LMP filled from last good interval.  |
| 62  | 4/1/2010  | 14   | 3        | RTUC   | RTUC did not run due to bids not available. This interval was filled either automatically or interactively. MQS published PNode clearing and resource awards for this interval.      |
| 63  | 4/13/2010 | 16   | 11       | RTD    | RTD did not run due to patch promotion. Loss clearing payload and LMP filled from last good interval.  |
| <b>Notes:</b>   |           |      |          |        |  |
| 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. |           |      |          |        |  |

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| 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 17<sup>th</sup> day of May, 2010.

*/s/ Jane Ostapovich*  
Jane Ostapovich