September 15, 2015

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 (CAISO) hereby submits its July/August report covering Market Disruption reportable events under Section 7.7.15 of its FERC Electric Tariff (ISO Tariff) that occurred from July 16, 2015 to August 15, 2015.[1]

Please contact the undersigned with any questions.

Respectfully submitted,

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[1] 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.

Market Disruption Report
July 16, 2015 to August 15, 2015

September 15, 2015

CAISO Market Quality and Renewable Integration

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 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), the Real-Time Market, which includes the Hour-Ahead Scheduling Process (HASP), Fifteen Minute Market (FMM), and the Real-Time Dispatch (RTD) processes;

- When the ISO manually overrides the closing of the Day-Ahead Market; or

- Any time 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]

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[1]   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.

[2]   *Id.* at P 29 & n.29.

II. Report on Market Disruptions Occurring from July 16, 2015 through August 15, 2015

The ISO's report on Market Disruptions that occurred during the time period from July 16, 2015 through August 15, 2015, 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 CAISO removed Bids (including Self-Schedules) during the time period covered by this report. As shown in Table 1, there were a total of 59 Market Disruptions for the reporting period. Table 1 also indicates that the CAISO 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)
Day-Ahead		
IFM	0	0
RUC	0	0
Real-Time		
Fifteen Minute Market Interval 1	1	0
Fifteen Minute Market Interval 2	2	0
Fifteen Minute Market Interval 3	1	0
Fifteen Minute Market Interval 4	7	0
Real-Time Dispatch	47	0

Table 1 above shows the market disruptions in the real time market in order to incorporate the FMM binding intervals.

A majority of the RTD and FMM instances were caused due to a software patch that caused application problems. The frequency of RTD failures increased from 23 to 47 failures in comparison to the August 2015 Report. RTD failures accounted for approximately 80 percent of all of the Market Disruptions during this reporting period.

The following date was when the most failures occurred. On July 23, there were 2 FMM, and 7 RTD failures due to broadcast failure. On July 30, there were 8 RTD disruptions due to broadcast problem. On August 13, there were 3 FMM, 2 HASP and 8 RTD intervals that were run in manual due to patch deployment.

ATTACHMENT A

	California Independent System Operator Corporation Market Disruption Report September 15, 2015

Table 3: 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	7/19/2015	15	6	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
2	7/19/2015	15	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
3	7/19/2015	15	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
4	7/22/2015	24	1	DSTUC	DSTUC did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
5	7/22/2015	24	3	FMM	FMM 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.
6	7/22/2015	24	4	FMM	FMM 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.
7	7/22/2015	24	11	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous 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
8	7/22/2015	24	12	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
9	7/23/2015	1	1	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
10	7/23/2015	1	2	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
11	7/23/2015	1	3	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
12	7/23/2015	16	4	FMM	FMM 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.
13	7/23/2015	16	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
14	7/23/2015	16	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
15	7/23/2015	18	4	FMM	FMM 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	7/23/2015	18	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
17	7/23/2015	18	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous 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
18	7/25/2015	19	6	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
19	7/25/2015	19	7	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
20	7/26/2015	4	10	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
21	7/26/2015	4	11	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
22	7/26/2015	4	12	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
23	7/29/2015	18	5	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
24	7/29/2015	18	6	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
25	7/29/2015	18	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
26	7/29/2015	18	8	RTD	RTD results were blocked and previous solution used.
27	7/30/2015	12	12	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous 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
28	7/30/2015	13	1	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
29	7/30/2015	13	2	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
30	7/30/2015	13	3	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
31	7/30/2015	14	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
32	7/30/2015	14	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
33	7/30/2015	14	9	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
34	7/30/2015	14	10	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
35	7/31/2015	9	6	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
36	7/31/2015	9	7	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
37	7/31/2015	9	8	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous 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
38	7/31/2015	14	1	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
39	7/31/2015	14	2	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
40	7/31/2015	14	3	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
41	7/31/2015	15	4	FMM	FMM 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.
42	7/31/2015	15	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
43	7/31/2015	15	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
44	8/6/2015	15	4	FMM	FMM 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.
45	8/6/2015	15	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
46	8/6/2015	15	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
47	8/13/2015	16	4	FMM	FMM did not run due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and

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
					resource awards for this interval.
48	8/13/2015	16	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
49	8/13/2015	16	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
50	8/13/2015	16	9	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
51	8/13/2015	16	10	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
52	8/13/2015	17	1	FMM	FMM 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.
53	8/13/2015	17	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.
54	8/13/2015	22	4	FMM	FMM was run in manual due to patch deployment, Planned maintenance
55	8/13/2015	22	7	RTD	RTD was run in manual due to patch deployment, Planned maintenance
56	8/13/2015	22	8	RTD	RTD was run in manual due to patch deployment, Planned maintenance

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
57	8/13/2015	22	9	RTD	RTD was run in manual due to patch deployment, Planned maintenance
58	8/13/2015	22	10	RTD	RTD was run in manual due to patch deployment, Planned maintenance
59	8/13/2015	23	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.

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.
Fifteen Minute Market (FMM) 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.
Fifteen Minute Market (FMM) 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.
Fifteen Minute Market (FMM) 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.
Fifteen Minute Market (FMM) Interval 4: The fourth of a series of four market runs conducted every Trading Hour. This interval is for the Fifteen Minute Market 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 15th day of September, 2015.

/s/ Jennifer Rotz

Jennifer Rotz