November 15, 2016

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 September/October report covering Market Disruption reportable events under Section 7.7.15 of its Tariff that occurred from September 16, 2016, to October 15, 2016.[1]

Please contact the undersigned with any questions.

Respectfully submitted,

By: *_/s/ Anna A. McKenna_*

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[1] The CAISO 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 CAISO Tariff.

Market Disruption Report September 16, 2016 to October 15, 2016

November 15, 2016

CAISO Market Quality and Renewable Integration

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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 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 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 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 September 16, 2016 through October 15, 2016

The ISO's report on Market Disruptions that occurred during the time period from September 16, 2016 through October 15, 2016, 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 80 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	3	0
Fifteen Minute Market Interval 2	3	0
Fifteen Minute Market Interval 3	5	0
Fifteen Minute Market Interval 4	7	0
Real-Time Dispatch	62	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 29 to 62 failures in comparison to the August 2016 Report. RTD failures accounted for approximately 78 percent of all of the Market Disruptions during this reporting period.

Planned Maintenance occurred on September 28th, September 29th, and October 11th. On September 28th there were a total of 23 (5 FMM, 18 RTD) disruptions, on September 29th there were a total of 5 (2 FMM, 3 RTD) disruptions, and on October 11th there were a total of 4 (1 FMM, 3 RTD) disruptions due to IFM/RTN Patching.

Contingency Dispatches occurred on September 19th, September 21st, and October 7th. On September 19th there were a total of 4 (RTD) disruptions due to a contingency dispatch caused by a generating unit relay and solar deviation. On September 21st there were a total of 3 (RTD) disruptions due to a contingency dispatch caused by loss of solar generation. On October 7th there were a total of 4 (RTD) disruptions due to two contingency dispatches caused by a drop in solar generation.

On September 30th there were a total of 18 (2 FMM, 16 RTD) disruptions caused by system issues involving exceeding INC/DEC thresholds resulting in blocked market runs and using previous solutions.

On October 6th, ISO removed bids for a particular resource in order to resolve a DC solution issue. The resource was made non-participating from 09:45 to 11:45 in the Real Time market ~~strictly~~ to resolve a~~the~~ DC solution issue ~~and not due to any bidding concerns~~.

ATTACHMENT A

California Independent System Operator Corporation
Market Disruption Report
November 15, 2016

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	9/19/2016	10	1	FMM	FMM failed due to application problem. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
2	9/19/2016	11	11	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
3	9/19/2016	11	12	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
4	9/19/2016	12	1	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
5	9/19/2016	12	2	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
6	9/19/2016	15	10	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
7	9/20/2016	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.

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	9/20/2016	15	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
9	9/20/2016	15	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
10	9/21/2016	15	7	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
11	9/21/2016	15	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
12	9/21/2016	15	9	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
13	9/22/2016	17	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.
14	9/22/2016	17	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
15	9/22/2016	17	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
16	9/25/2016	1	1	DSTUC	DSTUC 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.
17	9/26/2016	24	1	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
18	9/26/2016	24	2	RTD	RTD results were blocked and previous solution used.
19	9/28/2016	14	8	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
20	9/28/2016	23	4	FMM	FMM was run in manual~~., Planned~~. Planned maintenance.
21	9/28/2016	23	7	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
22	9/28/2016	23	8	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
23	9/28/2016	23	9	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
24	9/28/2016	23	10	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
25	9/28/2016	23	11	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
26	9/28/2016	23	12	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
27	9/28/2016	24	1	RTD	RTD was run in manual~~, Planned~~. 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
28	9/28/2016	24	1	FMM	FMM was run in manual~~, Planned~~. Planned maintenance.
29	9/28/2016	24	2	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
30	9/28/2016	24	2	HASP	HASP did not run due to patching. Planned maintenance.
31	9/28/2016	24	3	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
32	9/28/2016	24	3	FMM	FMM was run in manual~~, Planned~~. Planned maintenance.
33	9/28/2016	24	4	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
34	9/28/2016	24	4	FMM	FMM was run in manual~~, Planned~~. Planned maintenance.
35	9/28/2016	24	5	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
36	9/28/2016	24	6	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
37	9/28/2016	24	7	RTD	RTD was run in manual~~, Planned~~. 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
38	9/28/2016	24	8	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
39	9/28/2016	24	9	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
40	9/28/2016	24	10	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
41	9/28/2016	24	11	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
42	9/28/2016	24	12	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
43	9/29/2016	1	1	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
44	9/29/2016	1	1	FMM	FMM was run in manual~~, Planned~~. Planned maintenance.
45	9/29/2016	1	2	RTD	RTD was run in manual~~, Planned~~. Planned maintenance.
46	9/29/2016	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~~. 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
47	9/29/2016	1	3	RTD	RTD was run in manual~~, Planned~~. Planned maintenance
48	9/29/2016	22	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.
49	9/29/2016	22	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
50	9/29/2016	22	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
51	9/30/2016	19	6	RTD	RTD results were blocked and previous solution used.
52	9/30/2016	20	8	RTD	RTD results were blocked and previous solution used.
53	9/30/2016	20	9	RTD	RTD results were blocked and previous solution used.
54	9/30/2016	21	9	RTD	RTD results were blocked and previous solution used.
55	9/30/2016	21	10	RTD	RTD results were blocked and previous solution used.
56	9/30/2016	21	11	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
57	9/30/2016	22	1	DSTUC	DSTUC 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.
58	9/30/2016	23	1	DSTUC	DSTUC 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.
59	9/30/2016	23	1	RTD	RTD results were blocked and previous solution used.
60	9/30/2016	23	2	RTD	RTD results were blocked and previous solution used.
61	9/30/2016	23	3	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
62	9/30/2016	23	4	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
63	9/30/2016	23	5	RTD	RTD results were blocked and previous solution used.
64	9/30/2016	23	6	RTD	RTD results were blocked and previous solution used.
65	9/30/2016	23	7	RTD	RTD results were blocked and previous solution used.
66	9/30/2016	23	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
67	9/30/2016	24	7	RTD	RTD results were blocked and previous solution used.
68	9/30/2016	24	8	RTD	RTD results were blocked and previous solution used.
69	10/4/2016	4	4	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
70	10/4/2016	9	2	HASP	HASP did not run due to database issue. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
71	10/4/2016	9	3	FMM	FMM did not run due to database issue. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
72	10/4/2016	9	4	FMM	FMM did not run due to database issue. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
73	10/7/2016	16	8	RTD	RTD Broadcast failed. Loss clearing payload and LMP filled from previous good interval.
74	10/7/2016	16	9	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
75	10/7/2016	16	10	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
76	10/9/2016	12	2	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
77	10/11/2016	17	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.
78	10/11/2016	17	7	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
79	10/11/2016	17	8	RTD	RTD did not run due to application problem. Loss clearing payload and LMP filled from previous good interval.
80	10/11/2016	22	7	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.
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 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 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 November, 2016.

/s/ Grace Clark
Grace Clark