



January 15, 2013

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 November/December report covering Market Disruptions reportable events under Section 7.7.15 of its FERC Electric Tariff (ISO Tariff) that occurred from November 16, 2012 to December 15, 2012.<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 Nov 16, 2012 to Dec 15, 2012**

January 15, 2013

ISO Department of Market Analysis and Development

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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 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”), 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 November 16, 2012 through December 15, 2012**

The ISO’s report on Market Disruptions that occurred during the time period from November 16, 2012 through December 15, 2012, 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 116 Market Disruptions for the reporting period, all of which occurred in the real-time. 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	5	0
Real-Time Unit Commitment Interval 2	4	0
Real-Time Unit Commitment Interval 3	8	0
Real-Time Unit Commitment Interval 4	6	0
Real-Time Dispatch	93	0

Table 1 and Attachment A indicate that there were 23 instances of RTUC failures, including 4 HASP failures. The RTUC and HASP failures were caused by application not run, broadcast failures, Fall release patching, NA build, and application fall forward.

The frequency of RTD failures in this report was 93. The RTD failures were due to application not run, RTD solutions blocked with previous solutions used, and other reasons such as broadcast results failures, application fall forward, Fall release patching and NA build. Blocked RTD results with previous solutions used accounted for about one-third of all RTD disruptions in the reporting period.

## **ATTACHMENT A**

**California Independent System Operator Corporation  
Market Disruption Report  
January 15, 2013**

**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**

<b>Count</b>	<b>Date</b>	<b>Hour</b>	<b>Interval</b>	<b>Market</b>	<b>Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions</b>
1	11/17/2012	1	1	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
2	11/18/2012	13	8	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
3	11/18/2012	14	4	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
4	11/18/2012	14	5	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
5	11/18/2012	14	6	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
6	11/19/2012	1	11	RTD	RTD failed. Results blocked and previous solution used. 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
7	11/19/2012	1	12	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
8	11/19/2012	10	4	RTUC	RTUC failed due to broadcast failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
9	11/19/2012	10	7	RTD	RTD failed due to broadcast failure. Loss clearing payload and LMP filled from previous good interval.
10	11/19/2012	10	8	RTD	RTD failed due to broadcast failure. Loss clearing payload and LMP filled from previous good interval.
11	11/19/2012	10	9	RTD	RTD failed due to broadcast failure. Loss clearing payload and LMP filled from previous good interval.
12	11/19/2012	10	11	RTD	RTD failed due to broadcast failure. Loss clearing payload and LMP filled from previous good interval.
13	11/19/2012	10	12	RTD	RTD failed due to broadcast failure. Loss clearing payload and LMP filled from previous good interval.
14	11/19/2012	11	1	RTD	RTD failed due to broadcast failure. Loss clearing payload and LMP filled from previous good interval.
15	11/19/2012	11	1	RTUC	RTUC failed due to broadcast failure. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
16	11/19/2012	14	3	RTUC	RTUC failed due to Fall Forward. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
17	11/19/2012	14	5	RTD	RTD failed due to Fall forward. Loss clearing payload and LMP filled from previous good interval.
18	11/19/2012	14	6	RTD	RTD failed due to Fall forward. 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
19	11/19/2012	14	7	RTD	RTD failed due to Fall forward. Loss clearing payload and LMP filled from previous good interval.
20	11/19/2012	14	8	RTD	RTD failed due to Fall forward. Loss clearing payload and LMP filled from previous good interval.
21	11/19/2012	14	9	RTD	RTD failed due to Fall forward. Loss clearing payload and LMP filled from previous good interval.
22	11/26/2012	1	1	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
23	11/26/2012	1	2	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
24	11/26/2012	1	3	RTD	RTD failed. Loss clearing payload and LMP filled from previous good interval.
25	11/26/2012	1	4	RTD	RTD failed. Loss clearing payload and LMP filled from previous good interval.
26	11/26/2012	1	5	RTD	RTD failed. Loss clearing payload and LMP filled from previous good interval.
27	11/28/2012	1	1	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
28	11/29/2012	7	1	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
29	12/3/2012	12	2	HASP	HASP failed due to application not running. 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
30	12/3/2012	12	3	RTUC	RTUC failed due to application not running. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
31	12/3/2012	12	4	RTUC	RTUC failed due to application not running. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
32	12/3/2012	14	3	RTUC	RTUC failed due to application not running caused by Fall release patching. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
33	12/3/2012	14	4	RTUC	RTUC failed due to application not running caused by Fall release patching. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
34	12/3/2012	14	5	RTD	RTD failed due to application not running caused by Fall release patching. Loss clearing payload and LMP filled from previous good interval.
35	12/3/2012	14	6	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
36	12/3/2012	14	7	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
37	12/3/2012	14	8	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
38	12/3/2012	14	9	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
39	12/3/2012	14	10	RTD	RTD failed due to application not running. 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
40	12/3/2012	14	11	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
41	12/3/2012	14	12	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
42	12/3/2012	15	1	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
43	12/3/2012	15	1	RTUC	RTUC failed due to application not running. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
44	12/3/2012	15	2	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
45	12/3/2012	15	2	HASP	HASP failed due to application not running caused by Fall release patching. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
46	12/3/2012	15	3	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
47	12/3/2012	15	4	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
48	12/3/2012	15	5	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
49	12/3/2012	15	6	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
50	12/3/2012	15	11	RTD	RTD failed. Loss clearing payload and LMP filled from previous good interval.
51	12/3/2012	18	5	RTD	RTD failed due to application not running. 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
52	12/3/2012	18	6	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
53	12/3/2012	18	9	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
54	12/3/2012	18	10	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
55	12/3/2012	23	1	RTUC	RTUC failed due to application not running. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
56	12/4/2012	15	3	RTUC	RTUC failed due to application not running caused by NA build. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
57	12/4/2012	15	4	RTUC	RTUC failed due to application not running caused by NA build. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
58	12/4/2012	15	5	RTD	RTD failed due to application not running caused by NA build. Loss clearing payload and LMP filled from previous good interval.
59	12/4/2012	15	6	RTD	RTD failed due to application not running caused by NA build. Loss clearing payload and LMP filled from previous good interval.
60	12/4/2012	15	7	RTD	RTD failed due to application not running caused by NA build. 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
61	12/4/2012	15	8	RTD	RTD failed due to application not running caused by NA build. Loss clearing payload and LMP filled from previous good interval.
62	12/4/2012	15	9	RTD	RTD failed due to application not running caused by NA build. Loss clearing payload and LMP filled from previous good interval.
63	12/4/2012	15	10	RTD	RTD failed due to application not running caused by NA build. Loss clearing payload and LMP filled from previous good interval.
64	12/4/2012	15	11	RTD	RTD failed due to application not running caused by NA build. Loss clearing payload and LMP filled from previous good interval.
65	12/4/2012	15	12	RTD	RTD failed due to application not running caused by NA build. Loss clearing payload and LMP filled from previous good interval.
66	12/4/2012	16	1	RTD	RTD failed due to application not running caused by NA build. Loss clearing payload and LMP filled from previous good interval.
67	12/4/2012	16	1	RTUC	RTUC failed due to application not running caused by NA build. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
68	12/4/2012	16	2	RTD	RTD failed due to application not running caused by NA build. 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
69	12/4/2012	16	2	HASP	HASP failed due to application not running caused by NA build. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
70	12/4/2012	16	3	RTD	RTD failed due to application not running caused by NA build. Loss clearing payload and LMP filled from previous good interval.
71	12/4/2012	16	7	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
72	12/4/2012	16	8	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
73	12/4/2012	16	9	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
74	12/4/2012	22	5	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
75	12/4/2012	22	6	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
76	12/5/2012	5	3	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
77	12/6/2012	14	11	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
78	12/6/2012	14	12	RTD	RTD failed. Results blocked and previous solution used. 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
79	12/6/2012	15	1	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
80	12/6/2012	15	2	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
81	12/6/2012	15	3	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
82	12/6/2012	16	1	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
83	12/6/2012	16	4	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
84	12/6/2012	16	10	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
85	12/6/2012	16	11	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
86	12/6/2012	16	12	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
87	12/6/2012	17	2	RTD	RTD failed. Results blocked and previous solution used. 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
88	12/7/2012	2	6	RTD	RTD failed. Loss clearing payload and LMP filled from previous good interval.
89	12/7/2012	3	3	RTUC	RTUC failed due to application not running. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
90	12/7/2012	14	3	RTUC	RTUC failed due to application not running. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
91	12/7/2012	14	4	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
92	12/7/2012	14	4	RTUC	RTUC failed due to application not running. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
93	12/7/2012	14	5	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
94	12/7/2012	14	6	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
95	12/7/2012	14	7	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
96	12/7/2012	14	8	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
97	12/7/2012	14	9	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
98	12/7/2012	14	10	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
99	12/7/2012	15	1	RTUC	RTUC failed due to application not running. 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
100	12/9/2012	24	1	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
101	12/10/2012	24	4	RTD	RTD failed. Results blocked and previous solution used. Loss clearing payload and LMP filled from previous good interval.
102	12/11/2012	16	3	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
103	12/11/2012	16	3	RTUC	RTUC failed due to application not running. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
104	12/11/2012	16	4	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
105	12/12/2012	14	3	RTUC	RTUC failed due to application not running caused by Fall forward. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
106	12/12/2012	14	4	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
107	12/12/2012	14	4	RTUC	RTUC failed due to application not running caused by Fall forward. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
108	12/12/2012	14	5	RTD	RTD failed due to application not running caused by Fall forward. 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
109	12/12/2012	14	6	RTD	RTD failed due to application not running caused by Fall forward. Loss clearing payload and LMP filled from previous good interval.
110	12/12/2012	14	7	RTD	RTD failed due to application not running caused by Fall forward. Loss clearing payload and LMP filled from previous good interval.
111	12/12/2012	14	8	RTD	RTD failed due to application not running caused by Fall forward. Loss clearing payload and LMP filled from previous good interval.
112	12/12/2012	14	12	RTD	RTD failed due to application not running caused by Fall forward. Loss clearing payload and LMP filled from previous good interval.
113	12/12/2012	15	1	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
114	12/12/2012	15	2	RTD	RTD failed due to application not running. Loss clearing payload and LMP filled from previous good interval.
115	12/12/2012	15	2	HASP	HASP failed due to application not running. This interval was filled either automatically or interactively. MQS published Pnode clearing and resource awards for this interval.
116	12/13/2012	9	7	RTD	RTD failed. Results blocked and previous solution used. 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.					
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					

<p>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.</p>
<p>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.</p>
<p>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.</p>
<p>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.</p>
<p>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.</p>

## 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 15<sup>th</sup> day of January 2013.

*Susan L. Montana*

Susan L. Montana