

January 17, 2017

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 Frist Street, NE  
Washington, DC 20426

**Re: California Independent System Operator Corporation  
Docket Nos. ER08-1178-\_\_\_\_\_ and EL08-88-\_\_\_\_\_  
November 2016 Exceptional Dispatch Report (Chart 1 data)**

Dear Secretary Bose:

Pursuant to the Federal Energy Regulatory Commission's (Commission) September 2, 2009 (September 2 order), and May 4, 2010 (May 4 order) orders in the above-referenced dockets, the California Independent System Operator Corporation (CAISO) submits the attached report for filing. The attached report provides details concerning Exceptional Dispatches the Commission directed to be included in "Chart 1" as set forth in Appendix A of the September 2 order, as modified by the CAISO's September 14, 2009 motion for clarification, which the Commission granted in its May 4 order. The attached report provides Chart 1 data for the month of November 2016.

Respectfully submitted,

**By: /s/ Sidney L. Mannheim**

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# **Exceptional Dispatch Report**

## **Table 1: November 2016**

## TABLE OF CONTENTS

Introduction .....	3
The Nature of Exceptional Dispatch.....	3
Appendix A: Explanation by Example .....	14
Example 1: Exceptional Dispatch Instructions Prior to DAM .....	14
Example 2: Incremental Exceptional Dispatch Instructions in RTM.....	15
Example 3: Decremental Exceptional Dispatch Instructions in RTM.....	17

## LIST OF TABLES AND FIGURES

Table 1: Exceptional Dispatches in November 2016.....	5
Table 2: Instructions Prior to Day-Ahead Market .....	14
Table 3: FERC Summary of Instructions Prior to DAM .....	15
Table 4: Incremental Exceptional Dispatch Instructions in RTM .....	15
Table 5: FERC Summary of ED Instructions in RTM .....	16
Table 6: Decremental Exceptional Dispatch Instructions in RTM .....	17
Table 7: FERC Summary of Decremental ED Instructions in RTM.....	17

## Introduction

This report is filed pursuant to FERC's September 2, 2009 and July 4, 2010 orders in ER08-1178. These orders require two monthly Exceptional Dispatch reports—one issued on the 15<sup>th</sup> of each month and one issued on the 30<sup>th</sup> of each month. This report provides data on the frequency and reasons for Exceptional Dispatches issued in November 2016.

## The Nature of Exceptional Dispatch

The CAISO can issue exceptional dispatch instructions for a resource as a pre-day-ahead unit commitment, which may also include an indicative exceptional dispatch energy schedule, a post-day-ahead unit commitment, or a real-time exceptional dispatch.<sup>1</sup> A pre-day-ahead commitment is an exceptional dispatch instruction that commits a resource at or above its physical minimum operating level in the day-ahead market. A post-day-ahead market commitment is an exceptional dispatch instruction that commits a resource at or above its physical minimum operating level in the real-time market. A real-time exceptional dispatch instruction is a dispatch of a resource at or above its physical minimum operating point. A real-time exceptional dispatch above the resource day-ahead award is an incremental exceptional dispatch instruction and an exceptional dispatch below the day-ahead award is a decremental exceptional dispatch instruction.

The CAISO issues exceptional dispatch instructions to maintain the reliability of the grid when the market software cannot do so. Whenever the CAISO issues an exceptional dispatch instruction, the operator logs the dispatch and the associated reason.

Many of the exceptional dispatches listed below in Table 1, were to satisfy either a local area or system reliability requirements, and are classified into local generation requirements, transmission management requirements, non-modeled transmission outages or other non-modeled constraints or requirements and intertie emergency assistance. All of the transmission procedures are available on the CAISO website.<sup>2</sup>

The following reason for exceptional dispatch instructions in November 2016 was not related to generation or transmission operating procedures: Software Limitation, when an exceptional dispatch instruction was used to bridge schedules across days for resources with a minimum down time of 24 hours, as the CAISO software does not handle multi day commitment. For instance, a resource has a day-ahead schedule from 0600 till 2300, and then is shut down in 2400. If this resource had a minimum down time of 24 hours and it is required the

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<sup>1</sup> The CAISO can issue exceptional dispatch instructions subject to authority of the CAISO Tariff Section 34.9 and in accordance with CAISO Operating Procedure 2330 (formerly M-402).

<sup>2</sup> A list of all of the CAISO's publicly available Operating Procedures are available at the following link: <http://www.caiso.com/thegrid/operations/opsdoc/index.html>

following day, then the CAISO issues an exceptional dispatch to commit this resource in 2400 so it can be dispatched economically in the following day. Software limitation reason was also used for exceptional dispatches to manually issue shut down instructions to a resource because of a temporary Automatic Dispatch System (“ADS”) failure, or similar issues. There were a few other reasons used to explain exceptional dispatch instructions in November 2016, which are self explanatory.

The data in Table 1 is based on a template specified in the September 2009 order.<sup>3</sup> Each entry in Attachment A is a summary of exceptional dispatches classified by (1) the reason for the exceptional dispatch; (2) the location of the resource by Participating Transmission Owner (“PTO”) service area; (3) the Local Reliability Area (“LRA”) where applicable; (4) the market in which the exceptional dispatch occurred (day-ahead vs. real-time); and (5) the date of the exceptional dispatch. For each classification, the following information is provided: (1) Megawatts (MW); (2) Commitment (3) Inc or Dec (4) Hours; (5) Begin Time; and (6) End Time.

The MW column shows the range of exceptional dispatch instructions in MW for the classification. The Commitment column specifies if there was a unit commitment for the classification. The INC/DEC/NA column specifies if there was an incremental dispatch, a decremental dispatch, or only a unit commitment. If the exceptional dispatch was only a unit commitment, the column shows NA for the classification. The Begin Time column shows the start of exceptional dispatch for the classification and the End Time column shows the end of exceptional dispatch for the classification. The column Hours is the difference between end time and begin time rounded up to the next hour. The data shown is further explained by way of example in Attachment A.

Table 1 indicates there were 153 exceptional dispatches in November 2016, as compared to 187 exceptional dispatches in October 2016. Exceptional dispatches issued for the following reasons accounted for approximately 58 percent of the total exceptional dispatches during the reporting period: planned transmission outages, software limitations, load forecast uncertainty, and operating procedure number 7110. Exceptional dispatches with the reason “other reliability requirement” were due to Real Time Contingency Analysis.

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<sup>3</sup> The data in Table 1 is principally SLIC information supplemented with data from the Market Quality System (MQS). It is the most accurate currently available and it is worth noting that this data has been through the T+38B initial statement process wherein many unresolved issues are fixed. The CAISO believes that this data will correlate well with the settlements data that will be available when the CAISO files the Table 2 report for the reporting period.

**Table 1: Exceptional Dispatches in November 2016**

**California Independent System Operator Corporation  
Exceptional Dispatch Report  
January 17, 2016**

**Chart 1: Table of Exceptional Dispatches for Period 01/November/2016 - 30/November/2016**

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	Bridging Schedules	SCE	LA Basin	11/11/2016	20	No	INC	3	21:00	23:59
2	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	11/5/2016	83	No	INC	4	16:35	19:59
3	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	11/24/2016	0	No	INC	1	12:45	13:14
4	RT	Intertie Emergency Assistance	Intertie	N/A	11/5/2016	120	No	INC	1	20:28	20:59
5	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	11/8/2016	20	No	INC	19	5:00	23:59
6	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	11/13/2016	20	Yes	INC	2	22:00	23:59
7	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	11/14/2016	20- 70	Yes	INC	24	0:00	23:59
8	RT	Load Forecast Uncertainty	SCE	LA Basin	11/6/2016	25	No	INC	1	23:00	23:59
9	RT	Load Forecast Uncertainty	SCE	LA Basin	11/7/2016	25- 45	Yes	INC	24	0:00	23:59
10	RT	Load Forecast Uncertainty	SCE	LA Basin	11/8/2016	20	No	INC	24	0:00	23:59
11	RT	Load Forecast Uncertainty	SCE	LA Basin	11/14/2016	20	No	INC	19	5:00	23:59
12	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/7/2016	20	No	INC	8	0:00	7:19
13	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/14/2016	60	Yes	INC	17	7:00	23:59
14	RT	Load Pull	PG&E	Fresno	11/1/2016	83	No	INC	1	17:15	17:59
15	RT	Market Disruption	N/A	N/A	11/9/2016	150	No	INC	2	13:46	15:14
16	RT	Market Disruption	PG&E	Bay Area	11/9/2016	120-480	No	INC	2	13:41	14:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
17	RT	Market Disruption	PG&E	Fresno	11/9/2016	166-787	No	INC	4	13:15	16:44
18	RT	Market Disruption	PG&E	Fresno	11/17/2016	83	No	INC	1	0:10	0:29
19	RT	Market Disruption	PG&E	Fresno	11/29/2016	500-1050	No	INC	2	15:30	16:44
20	RT	Market Disruption	SCE	Big Creek-Ventura	11/9/2016	64- 184	No	INC	2	13:49	14:59
21	RT	Market Disruption	SCE	LA Basin	11/9/2016	182-812	No	INC	4	13:45	17:44
22	RT	Market Disruption	SDG&E	San Diego-IV	11/9/2016	600-1173	No	INC	3	13:37	16:14
23	RT	Market Disruption	SDG&E	San Diego-IV	11/29/2016	125	No	INC	2	15:37	16:44
24	RT	Market Disruption	PG&E	Bay Area	11/15/2016	480	No	INC	1	13:15	14:05
25	RT	Market Disruption	SCE	LA Basin	11/15/2016	48	No	INC	1	13:15	14:05
26	RT	Market Disruption	SDG&E	San Diego-IV	11/15/2016	30	No	INC	1	13:15	14:05
27	RT	Operating Procedure Number and Constraint	N/A	N/A	11/11/2016	15	No	INC	6	18:50	23:59
28	RT	Operating Procedure Number and Constraint	N/A	N/A	11/12/2016	10- 15	No	INC	8	0:00	7:59
29	RT	Operating Procedure Number and Constraint	PG&E	Humboldt	11/11/2016	10- 30	No	INC	17	7:30	23:59
30	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/1/2016	10- 80	No	INC	24	0:30	23:59
31	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/2/2016	30- 45	No	INC	24	0:00	23:59
32	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/3/2016	15- 45	No	INC	24	0:00	23:59
33	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/4/2016	15- 30	No	INC	11	0:00	10:29
34	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/5/2016	32	No	INC	5	19:40	23:59
35	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/6/2016	32	No	INC	9	0:00	8:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
36	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/6/2016	16- 32	No	INC	10	7:40	16:59
37	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/7/2016	15- 24	No	INC	15	9:15	23:29
38	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/9/2016	28	No	INC	3	21:37	23:59
39	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/10/2016	10- 28	No	INC	24	0:00	23:59
40	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/20/2016	15	No	INC	3	21:00	23:59
41	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/24/2016	15	No	INC	11	10:05	20:59
42	RT	Operating Procedure Number and Constraint (7110)	N/A	N/A	11/26/2016	12- 30	No	INC	8	16:45	23:59
43	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/12/2016	10- 14	No	INC	5	18:45	22:59
44	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/27/2016	12	No	INC	2	21:00	22:59
45	RT	Other Reliability Requirement	N/A	N/A	11/15/2016	30	No	INC	6	6:20	11:59
46	RT	Other Reliability Requirement	SDG&E	San Diego-IV	11/29/2016	45	No	INC	2	14:10	15:29
47	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/9/2016	60	No	INC	8	7:45	14:59
48	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/10/2016	28	No	INC	9	7:19	15:59
49	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/13/2016	15	No	INC	6	18:00	23:59
50	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/14/2016	10- 16	No	INC	18	0:00	17:59
51	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/15/2016	12- 30	No	INC	18	6:20	23:59
52	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/16/2016	12	No	INC	4	0:00	3:29

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
53	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/17/2016	24- 32	No	INC	18	6:40	23:59
54	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/18/2016	16- 32	No	INC	22	0:00	21:44
55	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/25/2016	15	No	INC	5	19:00	23:59
56	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/26/2016	15	No	INC	7	0:00	6:59
57	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/28/2016	30- 48	No	INC	19	5:45	23:59
58	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/29/2016	30- 60	No	INC	24	0:00	23:59
59	RT	Planned Transmission Outage and Constraint	N/A	N/A	11/30/2016	16- 32	No	INC	23	0:00	22:59
60	RT	Planned Transmission Outage and Constraint	PG&E	Fresno	11/30/2016	50	No	INC	2	4:45	5:59
61	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	11/13/2016	15	No	INC	7	17:45	23:59
62	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	11/14/2016	12- 30	No	INC	24	0:00	23:59
63	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	11/15/2016	10- 32	No	INC	17	7:36	23:59
64	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	11/16/2016	10- 45	No	INC	18	6:45	23:59
65	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	11/17/2016	16	No	INC	13	7:15	19:59
66	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	11/21/2016	12	No	INC	5	17:45	21:49
67	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	11/28/2016	16	No	INC	17	7:29	23:59
68	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	11/29/2016	30	No	INC	5	18:45	22:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
69	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	11/30/2016	15- 96	No	INC	24	0:55	23:59
70	RT	Planned Transmission Outage and Constraint	PG&E	N/A	11/1/2016	675	No	INC	1	2:40	2:44
71	RT	Planned Transmission Outage and Constraint	PG&E	NCNB	11/15/2016	24- 59	No	INC	12	5:19	16:59
72	RT	Planned Transmission Outage and Constraint	PG&E	NCNB	11/16/2016	55- 75	No	INC	17	6:15	22:59
73	RT	Planned Transmission Outage and Constraint	PG&E	NCNB	11/17/2016	65	No	INC	1	1:40	2:29
74	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	11/17/2016	4- 24	No	INC	7	6:30	13:14
75	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	11/2/2016	150-405	No	INC	2	22:50	23:59
76	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	11/3/2016	385-405	No	INC	6	0:00	5:59
77	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	11/4/2016	315-417	No	INC	9	8:54	16:59
78	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	11/21/2016	335-914	No	INC	8	1:58	8:59
79	RT	Planned Transmission Outage and Constraint	SCE	LA Basin	11/12/2016	20	No	INC	24	0:00	23:59
80	RT	Planned Transmission Outage and Constraint	SCE	LA Basin	11/19/2016	150-300	No	INC	6	10:35	15:59
81	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/1/2016	290-1060	No	INC	9	7:58	15:59
82	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/4/2016	518	No	INC	1	9:35	10:29
83	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/6/2016	68	No	INC	9	6:55	15:29
84	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/7/2016	68	No	INC	17	7:20	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
85	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/11/2016	40- 60	No	INC	15	9:30	23:59
86	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/12/2016	20- 60	Yes	INC	24	0:00	23:59
87	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/13/2016	20	No	INC	12	7:00	18:59
88	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/14/2016	20	No	INC	4	7:00	10:59
89	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/15/2016	60- 229	Yes	INC	24	0:00	23:59
90	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/16/2016	500- 730	No	INC	8	8:10	15:44
91	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/28/2016	45- 90	No	INC	9	7:50	16:24
92	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	11/29/2016	320	No	INC	10	7:20	17:14
93	RT	Pump Management	PG&E	Fresno	11/1/2016	83	No	INC	1	16:55	17:39
94	RT	Pump Management	PG&E	Fresno	11/23/2016	83	No	INC	1	6:00	6:44
95	RT	Software Limitation	PG&E	Bay Area	11/9/2016	331	No	INC	1	13:30	13:59
96	RT	Software Limitation	PG&E	Bay Area	11/15/2016	0	No	INC	2	15:45	17:34
97	RT	Software Limitation	PG&E	Fresno	11/5/2016	0	No	INC	1	17:10	18:09
98	RT	Software Limitation	PG&E	Fresno	11/7/2016	83	No	INC	5	15:50	19:59
99	RT	Software Limitation	PG&E	Fresno	11/29/2016	0	No	INC	2	5:25	6:29
100	RT	Software Limitation	PG&E	Fresno	11/30/2016	83	No	INC	2	5:25	6:29
101	RT	Software Limitation	PG&E	Humboldt	11/15/2016	16	No	INC	1	23:00	23:59
102	RT	Software Limitation	PG&E	N/A	11/9/2016	200- 300	No	INC	3	15:00	17:29
103	RT	Software Limitation	SCE	Big Creek- Ventura	11/20/2016	540	No	INC	1	23:30	23:59
104	RT	Software Limitation	SCE	LA Basin	11/17/2016	0	No	INC	4	20:00	23:59
105	RT	Software Limitation	SCE	LA Basin	11/29/2016	0	No	INC	1	15:20	15:44

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
106	RT	Software Limitation	SCE	N/A	11/9/2016	40	No	INC	2	13:30	15:29
107	RT	Software Limitation	SDG&E	San Diego-IV	11/2/2016	20	No	INC	18	3:00	20:59
108	RT	Software Limitation	SDG&E	San Diego-IV	11/6/2016	0	No	INC	9	7:00	15:29
109	RT	Software Limitation	SDG&E	San Diego-IV	11/15/2016	0	No	INC	1	15:45	16:44
110	RT	Software Limitation	SDG&E	San Diego-IV	11/17/2016	0	No	INC	3	14:00	16:59
111	RT	Start-Up Instructions	PG&E	Fresno	11/7/2016	308	No	INC	1	14:45	15:29
112	RT	Unit Testing	PG&E	Fresno	11/1/2016	339	No	INC	1	18:10	18:59
113	RT	Unit Testing	PG&E	N/A	11/16/2016	250-295	No	INC	6	12:10	17:29
114	RT	Unit Testing	PG&E	N/A	11/17/2016	175-250	No	INC	10	10:00	19:59
115	RT	Unit Testing	PG&E	Stockton	11/2/2016	321	No	INC	1	20:00	20:59
116	RT	Unit Testing	SCE	Big Creek-Ventura	11/4/2016	16	No	INC	1	15:25	15:59
117	RT	Unit Testing	SCE	Big Creek-Ventura	11/22/2016	487	No	INC	1	11:00	11:29
118	RT	Unit Testing	SCE	LA Basin	11/17/2016	36	No	INC	1	14:05	14:24
119	RT	Unplanned Outage	PG&E	N/A	11/7/2016	0	No	INC	1	16:05	16:09
120	RT	Unplanned Outage	PG&E	Sierra	11/7/2016	0	No	INC	1	16:05	16:09
121	RT	Voltage Support	PG&E	Fresno	11/1/2016	-640--320	No	INC	19	5:10	23:59
122	RT	Voltage Support	PG&E	Fresno	11/2/2016	-640--320	No	INC	24	0:00	23:59
123	RT	Voltage Support	PG&E	Fresno	11/3/2016	-320	No	INC	7	0:00	6:59
124	RT	Voltage Support	PG&E	Fresno	11/4/2016	-320- 83	No	INC	17	0:15	16:59
125	RT	Voltage Support	PG&E	Fresno	11/5/2016	-318- 83	No	INC	24	0:00	23:59
126	RT	Voltage Support	PG&E	Fresno	11/6/2016	-318	No	INC	9	0:00	8:59
127	RT	Voltage Support	PG&E	Fresno	11/6/2016	-636- 20	No	INC	24	0:45	23:59
128	RT	Voltage Support	PG&E	Fresno	11/7/2016	-312	No	INC	9	0:00	8:59
129	RT	Voltage Support	PG&E	Fresno	11/8/2016	-307	No	INC	9	0:08	8:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
130	RT	Voltage Support	PG&E	Fresno	11/9/2016	-304- 83	No	INC	13	1:00	13:59
131	RT	Voltage Support	PG&E	Fresno	11/10/2016	-619-- 304	No	INC	8	0:15	7:59
132	RT	Voltage Support	PG&E	Fresno	11/11/2016	-320-- 315	No	INC	24	0:15	23:59
133	RT	Voltage Support	PG&E	Fresno	11/12/2016	-320-- 309	No	INC	24	0:00	23:59
134	RT	Voltage Support	PG&E	Fresno	11/13/2016	-630-- 320	No	INC	24	0:00	23:59
135	RT	Voltage Support	PG&E	Fresno	11/14/2016	-320	No	INC	7	0:00	6:59
136	RT	Voltage Support	PG&E	Fresno	11/15/2016	-310	No	INC	24	0:45	23:59
137	RT	Voltage Support	PG&E	Fresno	11/16/2016	-310	No	INC	6	0:00	5:39
138	RT	Voltage Support	PG&E	Fresno	11/17/2016	-309- 0	No	INC	24	0:30	23:59
139	RT	Voltage Support	PG&E	Fresno	11/18/2016	-309	No	INC	5	0:00	4:44
140	RT	Voltage Support	PG&E	Fresno	11/19/2016	-309- 166	No	INC	24	0:00	23:59
141	RT	Voltage Support	PG&E	Fresno	11/20/2016	-309- 83	No	INC	24	0:00	23:59
142	RT	Voltage Support	PG&E	Fresno	11/21/2016	-309	No	INC	24	0:00	23:59
143	RT	Voltage Support	PG&E	Fresno	11/22/2016	-309-- 304	No	INC	24	0:00	23:59
144	RT	Voltage Support	PG&E	Fresno	11/23/2016	-309- 83	Yes	INC	24	0:00	23:59
145	RT	Voltage Support	PG&E	Fresno	11/24/2016	-614-- 307	No	INC	24	0:00	23:59
146	RT	Voltage Support	PG&E	Fresno	11/25/2016	-319-- 307	No	INC	24	0:00	23:59
147	RT	Voltage Support	PG&E	Fresno	11/26/2016	-319	No	INC	24	0:00	23:59
148	RT	Voltage Support	PG&E	Fresno	11/27/2016	-637-- 319	No	INC	24	0:00	23:59
149	RT	Voltage Support	PG&E	Fresno	11/28/2016	-634-- 315	No	INC	16	0:00	15:29
150	RT	Voltage Support	PG&E	Fresno	11/29/2016	-638- 83	No	INC	24	0:30	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
151	RT	Voltage Support	PG&E	Fresno	11/30/2016	-638- 83	No	INC	24	0:00	23:59
152	RT	Voltage Support	PG&E	Fresno	12/1/2016	-638-- 319	No	INC	5	0:00	4:44
153	RT	Voltage Support	PG&E	Sierra	11/14/2016	40	No	INC	4	3:00	6:59

## Appendix A: Explanation by Example

All examples listed below are based on fictitious data.

### Example 1: Exceptional Dispatch Instructions Prior to DAM

In this fictitious example, the CAISO issued an exceptional dispatch instruction for resource A to be committed at its physical minimum (Pmin) of 50 MW from hours ending 5 through 10 for a generation procedure 7630. Similarly, the CAISO issued additional instructions to resources B and C for the same reason as shown in Table 2. Generally, exceptional dispatches prior to the day-ahead market are commitments to minimum load. Here the dispatch levels are all at minimum load.

**Table 2: Instructions Prior to Day-Ahead Market**

Date	Market	Resource	Location	Local Reliability Area (LRA)	Begin Time	End Time	Dispatch Level (MW)	Reason
01-Jul-09	DA	A	SCE	LA BASIN	05:00	10:00	50	7630
01-Jul-09	DA	B	SCE	LA BASIN	08:00	20:00	30	7630
01-Jul-09	DA	C	SCE	LA BASIN	09:00	23:00	20	7630

This data is summarized as shown in Table 3, which is the prescribed format specified in the FERC order on September 02, 2009. This summary classifies the data by reason, resource location, local reliability area, and trade date. The MW column in Table 3 is the range of MW; in this case the minimum instruction MW is 20 MW for resource C which occurs from hours ending 21 through 23. The maximum instruction occurs in hour ending 10. In this hour resource A is committed at 50 MW, resource B is committed at 30 MW and resource C is committed at 20 MW. This adds up to 100 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. Commitments are broken out separately from energy dispatches. In the day-ahead, however the exceptional dispatches are nearly always just commitments, as in this example. The Begin Time column shows hour ending 5 as this was the hour ending for first dispatch of the day, and the End Time column shows hour ending 23, as this was the hour with last dispatch. It is also possible that there might be hours between the begin time and the end time where there might not be exceptional dispatch instructions for the given reason, meaning that the range between the begin time and end time can include null hours with no dispatch.

**Table 3: FERC Summary of Instructions Prior to DAM**

Number	Market Type	Reason	Location	Local Reliability Area (LRA)	Trade Date	MW	Commitment	INC/DEC	Hour	Begin Time	End Time
1	DA	7630	SCE	LA Basin	1-Jul-09	20-100	Yes	N/A	19	05:00	23:00

**Example 2: Incremental Exceptional Dispatch Instructions in RTM**

In this fictitious example, the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 30 MW from hours ending 7 through 11 after completion of the day-ahead market for the transmission procedure 7110. This resource had no day-ahead award in those hours. The CAISO issued another exceptional dispatch instruction to resource B, to be dispatched at 40 MW from hours ending 8 through 9 in real-time for the transmission procedure 7110. This resource had a day-ahead schedule of 20 MW from the day-ahead market, which implies that this exceptional dispatch instruction was an incremental instruction and the exceptional dispatch MW was 20 MW. Similarly, the details of exceptional dispatch (ED) instruction for resource C are shown in Table 4.

**Table 4: Incremental Exceptional Dispatch Instructions in RTM**

Date	Market	Resource	Location	Local Reliability Area (LRA)	Begin Time	End Time	Dispatch Level (MW)	Day-Ahead Award (MW)	Commitment	INC/DEC	ED (MW)	Reason
01-Jul-09	RT	A	PG&E	Humboldt	06:00	11:00	30	0	Yes	INC	30	7110
01-Jul-09	RT	B	PG&E	Humboldt	07:00	09:00	40	20	No	INC	20	7110
01-Jul-09	RT	C	PG&E	Humboldt	12:00	15:00	50	50	No	INC	0	7110
01-Jul-09	RT	C	PG&E	Humboldt	16:00	20:00	50	40	No	INC	10	7110

This data is summarized as shown in Table 5 and is classified by reason, resource location, local reliability area, and trade date. The MW column in Table 5 is the range of MW; in this case the minimum instruction MW is 0 MW for resource C which occurs from hours ending 13 through 15. The maximum instruction occurs in hours ending 8 & 9, as during these two hours both resources A and B have an ED MW of 30MW and 20MW, respectively. This adds up to 50 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. This column shows a commitment if there was a single commitment in the entire interval of exceptional dispatch. The Begin Time column shows the time of the first dispatch of the day. This is a time not a range. Similarly the End Time column shows a time and not a range. Exceptional dispatches occurred between these two times. Since there was a commitment between the begin time and end time then the Commitment column displays yes for the summary. Similarly, the INC/DEC column shows an INC as there was an incremental dispatch between the begin time and end time. As mentioned in the previous example it is possible that there might be hours between the begin time and end time where there were no exceptional dispatch instructions for the given reason.

**Table 5: FERC Summary of ED Instructions in RTM**

Number	Market Type	Reason	Location	Local Reliability Area (LRA)	Trade Date	MW	Commitment	INC/DEC	Hour	Begin Time	End Time
1	RT	7110	PG&E	Humboldt	1-Jul-09	0-50	Yes	INC	15	06:00	20:00

### Example 3: Decremental Exceptional Dispatch Instructions in RTM

This example highlights decremental exceptional dispatch instructions in the real-time market. In this fictitious example the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 20 MW from hours ending 15 through 20 after completion of the day-ahead market for the transmission procedure 7430. The CAISO issued additional exceptional dispatch instructions for resources B and C; details of those instructions are shown in Table 6.

**Table 6: Decremental Exceptional Dispatch Instructions in RTM**

Date	Market Type	Resource	Location	Local Reliability Area (LRA)	Begin Time	End Time	Dispatch Level (MW)	Day-Ahead Award (MW)	Commitment	INC/DEC	ED (MW)	Reason
01-Jul-09	RT	A	PG&E	Fresno	15:00	20:00	20	0	Yes	INC	20	7430
01-Jul-09	RT	B	PG&E	Fresno	07:00	09:00	40	60	No	DEC	20	7430
01-Jul-09	RT	C	PG&E	Fresno	10:00	14:00	40	50	No	DEC	10	7430

This data is summarized according to FERC convention as shown in Table 7. This summary classifies the data by reason, resource location, local reliability area, and trade date. Please note that inc and dec are broken out separately. The inc entry is self-explanatory and similar to the previous example. Regarding the dec entry the MW column is the range of MW; in this case the minimum dec instruction is 10 MW (actually -10MW as it is a dec) for resource C which occurs from hours ending 10 through 14. The maximum instruction occurs from hours ending 7 through 9, when resource B was issued a dec instruction of 20 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time.

**Table 7: FERC Summary of Decremental ED Instructions in RTM**

Number	Market Type	Reason	Location	Local Reliability Area (LRA)	Trade Date	MW	Commitment	INC/DEC	Hour	Begin Time	End Time
1	RT	7430	PG&E	Fresno	1-Jul-09	20	Yes	INC	6	15:00	20:00
1	RT	7430	PG&E	Fresno	1-Jul-09	10-20	Yes	DEC	8	07:00	14:00

### **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 17<sup>th</sup> day of January, 2017

*/s/ Grace Clark*

Grace Clark