



# **Exceptional Dispatch Report**

## **Table 1: February 2017**

## TABLE OF CONTENTS

Introduction .....	3
The Nature of Exceptional Dispatch.....	3
Appendix A: Explanation by Example .....	15
Example 1: Exceptional Dispatch Instructions Prior to DAM .....	15
Example 2: Incremental Exceptional Dispatch Instructions in RTM.....	16
Example 3: Decremental Exceptional Dispatch Instructions in RTM.....	18

## LIST OF TABLES AND FIGURES

Table 1: Exceptional Dispatches in February 2017.....	5
Table 2: Instructions Prior to Day-Ahead Market .....	15
Table 3: FERC Summary of Instructions Prior to DAM .....	16
Table 4: Incremental Exceptional Dispatch Instructions in RTM .....	16
Table 5: FERC Summary of ED Instructions in RTM.....	17
Table 6: Decremental Exceptional Dispatch Instructions in RTM .....	18
Table 7: FERC Summary of Decremental ED Instructions in RTM.....	18

## 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 February 2017.

## 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 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 February 2017 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 February 2017, 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 column specifies if there was an incremental dispatch or a decremental dispatch from the IFM schedule. 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 197 exceptional dispatches in February 2017, as compared to 232 exceptional dispatches in January 2017. Exceptional dispatches issued for the following reasons accounted for approximately 45 percent of the total exceptional dispatches during the reporting period: planned transmission outages, software limitations, and operating procedure number 7110 (along with 6610 and 7240). Many of the exceptional dispatches with the reason “Other Reliability Requirement” were due to Real Time Contingency Analysis.

The California ISO issued an Exceptional Dispatch Capacity Procurement Mechanism (CPM) designation to Pio Pico Unit 2 (PIOPIC\_2\_CTG2) for a system reliability need. The designation is effective February 6, 2017 for a duration of 30 days.

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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 February 2017**

**California Independent System Operator Corporation  
Exceptional Dispatch Report  
April 14, 2017**

**Chart 1: Table of Exceptional Dispatches for Period 01/February/2017 - 28/February/2017**

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	Contingency Dispatch	PG&E	Fresno	2/21/2017	83	No	INC	1	8:25	8:59
2	RT	Fast Start Unit Management	SCE	Big Creek-Ventura	2/23/2017	0	No	INC	1	1:00	1:59
3	RT	Fast Start Unit Management	SCE	LA Basin	2/22/2017	0	No	INC	1	21:00	21:59
4	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	2/27/2017	84	No	DEC	2	16:15	18:14
5	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	2/27/2017	84	No	INC	2	16:15	18:14
6	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	2/27/2017	7	No	INC	1	8:05	8:09
7	RT	Load Forecast Uncertainty	PG&E	Fresno	2/22/2017	350	No	INC	1	17:25	17:34
8	RT	Market Disruption	SCE	Big Creek-Ventura	2/22/2017	16- 33	No	INC	1	17:04	17:44
9	RT	Market Disruption	SCE	LA Basin	2/22/2017	47	No	DEC	1	17:04	17:44
10	RT	Market Disruption	SCE	LA Basin	2/22/2017	233-237	No	INC	1	17:04	17:44
11	RT	Market Disruption	SDG&E	San Diego-IV	2/22/2017	30	No	INC	1	17:04	17:44
12	RT	Operating Procedure Number and Constraint (6610)	SCE	LA Basin	2/7/2017	180	No	INC	1	20:00	20:59
13	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/1/2017	10- 26	No	DEC	14	10:55	23:59
14	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/1/2017	10- 36	No	INC	24	0:00	23:59
15	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/2/2017	15- 43	No	DEC	17	7:45	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
16	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/2/2017	10- 43	No	INC	24	0:00	23:59
17	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/3/2017	15- 39	No	DEC	15	5:15	19:59
18	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/3/2017	24- 45	No	INC	19	5:15	23:59
19	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/4/2017	25- 30	No	INC	24	0:00	23:59
20	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/5/2017	21- 66	No	INC	12	11:00	22:59
21	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/6/2017	21- 48	No	INC	18	6:30	23:59
22	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/7/2017	25- 229	No	INC	14	0:00	13:59
23	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/8/2017	10- 35	No	DEC	18	6:15	23:29
24	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/8/2017	10- 49	No	INC	18	6:15	23:59
25	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/9/2017	20- 48	No	DEC	22	1:15	22:59
26	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/9/2017	13- 48	No	INC	24	0:00	23:59
27	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/10/2017	16- 48	No	DEC	17	6:45	23:29
28	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/10/2017	13- 48	No	INC	24	0:00	23:59
29	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/11/2017	32	No	DEC	2	17:25	18:59
30	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/11/2017	15- 41	No	INC	24	0:00	23:59
31	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/12/2017	15	No	DEC	10	10:20	19:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
32	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/12/2017	10- 54	No	INC	24	0:00	23:59
33	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/13/2017	15- 49	No	DEC	2	20:45	22:39
34	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/13/2017	15- 34	No	INC	23	0:00	22:39
35	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/14/2017	15- 48	No	DEC	3	19:15	21:59
36	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/14/2017	15- 65	No	INC	17	6:15	22:59
37	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/15/2017	26- 72	No	INC	11	6:20	16:59
38	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/16/2017	20	No	DEC	8	14:50	22:14
39	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/16/2017	15- 70	No	INC	16	7:00	22:59
40	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/17/2017	32- 44	No	INC	2	22:00	23:59
41	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/18/2017	21- 47	No	INC	17	7:15	23:59
42	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/19/2017	14- 64	No	INC	24	0:00	23:59
43	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/20/2017	15- 62	No	DEC	12	8:50	20:29
44	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/20/2017	16- 77	No	INC	15	8:50	23:24
45	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/21/2017	15- 30	No	DEC	16	8:00	23:44
46	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/21/2017	15- 43	No	INC	17	7:55	23:59
47	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/22/2017	20- 114	No	INC	24	0:00	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
48	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/23/2017	11- 80	No	INC	19	5:25	23:59
49	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/24/2017	15- 32	No	DEC	16	1:55	17:14
50	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/24/2017	15- 64	No	INC	24	0:00	23:59
51	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/25/2017	10	No	DEC	6	1:35	7:29
52	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/25/2017	10- 32	No	INC	24	0:00	23:59
53	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/26/2017	15	No	DEC	5	19:30	23:59
54	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/26/2017	15- 92	No	INC	24	0:00	23:59
55	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/27/2017	15- 105	No	DEC	19	3:30	21:59
56	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/27/2017	15- 60	No	INC	22	0:00	21:59
57	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/28/2017	26- 60	No	DEC	11	5:00	15:54
58	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	2/28/2017	26- 48	No	INC	19	5:00	23:59
59	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/1/2017	28	No	INC	3	0:00	2:59
60	RT	Operating Procedure Number and Constraint (7240)	PG&E	Sierra	2/16/2017	15	No	DEC	2	12:30	14:29
61	RT	Other Reliability Requirement	PG&E	Humboldt	2/7/2017	45- 155	No	INC	10	14:00	23:59
62	RT	Other Reliability Requirement	PG&E	N/A	2/25/2017	40- 152	No	DEC	13	7:25	19:59
63	RT	Other Reliability Requirement	PG&E	N/A	2/26/2017	46	No	DEC	7	6:05	12:29
64	RT	Other Reliability Requirement	PG&E	N/A	2/26/2017	25- 35	No	INC	8	16:45	23:59
65	RT	Other Reliability Requirement	PG&E	N/A	2/27/2017	20- 35	No	DEC	18	0:00	17:29
66	RT	Other Reliability Requirement	PG&E	Sierra	2/15/2017	10	No	DEC	2	22:10	23:59



Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
67	RT	Other Reliability Requirement	PG&E	Sierra	2/16/2017	10	No	DEC	1	0:00	0:59
68	RT	Other Reliability Requirement	SDG&E	San Diego-IV	2/6/2017	50	No	INC	1	12:45	12:59
69	RT	Over Generation	N/A	N/A	2/3/2017	325	No	DEC	1	14:32	14:44
70	RT	Over Generation	SDG&E	San Diego-IV	2/17/2017	600	No	DEC	1	18:06	18:14
71	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	2/3/2017	357	No	INC	9	15:30	23:59
72	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	2/4/2017	175	No	INC	18	0:00	17:59
73	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	2/5/2017	175	No	INC	24	0:00	23:59
74	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	2/6/2017	175	No	INC	21	3:00	23:59
75	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	2/7/2017	175	No	INC	20	0:00	19:29
76	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	2/8/2017	175	No	INC	5	8:00	12:29
77	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	2/17/2017	180	No	INC	10	4:00	13:59
78	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	2/23/2017	45- 584	No	INC	7	8:15	15:14
79	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	2/8/2017	16	No	INC	2	0:20	2:14
80	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	2/11/2017	48- 60	No	INC	10	7:55	17:44
81	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	2/12/2017	48	No	INC	1	7:45	8:44
82	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	2/15/2017	45- 64	No	INC	4	20:20	23:59
83	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	2/16/2017	15- 45	No	INC	8	0:00	7:14
84	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	2/17/2017	12	No	DEC	4	18:45	21:59

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	PG&E	Humboldt	2/17/2017	32- 48	No	INC	16	6:25	21:59
86	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	2/27/2017	44	No	INC	2	22:00	23:59
87	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	2/28/2017	30- 44	No	INC	4	0:00	3:59
88	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	2/1/2017	20	No	INC	1	3:40	4:29
89	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	2/13/2017	20	No	INC	21	3:00	23:59
90	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	2/14/2017	20	No	INC	18	0:00	17:29
91	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	2/18/2017	190-821	No	DEC	3	13:45	15:59
92	RT	Planned Transmission Outage and Constraint	SCE	LA Basin	2/24/2017	92	Yes	INC	5	19:00	23:59
93	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	2/22/2017	310-400	No	INC	2	7:10	8:29
94	RT	Software Limitation	Intertie	N/A	2/1/2017	14	No	INC	1	10:05	10:59
95	RT	Software Limitation	PG&E	Bay Area	2/5/2017	130	No	DEC	1	16:15	16:59
96	RT	Software Limitation	PG&E	Fresno	2/12/2017	0	No	DEC	4	3:40	7:29
97	RT	Software Limitation	PG&E	Fresno	2/15/2017	83	No	INC	1	14:05	14:59
98	RT	Software Limitation	PG&E	Fresno	2/19/2017	0	No	INC	1	3:00	3:59
99	RT	Software Limitation	PG&E	Fresno	2/22/2017	0	No	INC	2	22:30	23:34
100	RT	Software Limitation	PG&E	Fresno	2/23/2017	-653--326	No	INC	3	8:55	10:59
101	RT	Software Limitation	PG&E	Fresno	2/27/2017	-312	No	DEC	2	22:45	23:59
102	RT	Software Limitation	PG&E	Fresno	2/28/2017	0	No	INC	2	5:00	6:49
103	RT	Software Limitation	PG&E	Kern	2/28/2017	0	No	INC	2	10:40	12:39
104	RT	Software Limitation	SCE	Big Creek-Ventura	2/23/2017	0	No	INC	1	3:30	4:29

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
105	RT	Software Limitation	SCE	LA Basin	2/7/2017	0	No	INC	1	4:10	5:09
106	RT	Software Limitation	SCE	LA Basin	2/22/2017	0	No	DEC	1	18:45	19:14
107	RT	Software Limitation	SCE	LA Basin	2/22/2017	0	No	INC	4	20:05	23:59
108	RT	Software Limitation	SCE	LA Basin	2/23/2017	0	No	INC	22	2:20	23:59
109	RT	Software Limitation	SCE	LA Basin	2/24/2017	0	No	INC	5	1:10	5:59
110	RT	Unit Testing	Intertie	N/A	2/2/2017	4- 24	No	INC	17	7:00	23:59
111	RT	Unit Testing	Intertie	N/A	2/3/2017	42- 120	No	INC	24	0:00	23:59
112	RT	Unit Testing	Intertie	N/A	2/4/2017	60	No	INC	24	0:00	23:59
113	RT	Unit Testing	Intertie	N/A	2/5/2017	61	No	INC	24	0:00	23:59
114	RT	Unit Testing	Intertie	N/A	2/6/2017	106	No	INC	24	0:00	23:59
115	RT	Unit Testing	Intertie	N/A	2/7/2017	106	No	INC	24	0:00	23:59
116	RT	Unit Testing	Intertie	N/A	2/8/2017	106	No	INC	24	0:00	23:59
117	RT	Unit Testing	Intertie	N/A	2/9/2017	106	No	INC	24	0:00	23:59
118	RT	Unit Testing	Intertie	N/A	2/10/2017	106	No	INC	24	0:00	23:59
119	RT	Unit Testing	Intertie	N/A	2/11/2017	133	No	INC	15	9:00	23:59
120	RT	Unit Testing	Intertie	N/A	2/12/2017	71- 83	No	INC	24	0:00	23:59
121	RT	Unit Testing	Intertie	N/A	2/13/2017	92- 116	No	INC	24	0:00	23:59
122	RT	Unit Testing	Intertie	N/A	2/14/2017	5- 157	No	INC	24	0:00	23:59
123	RT	Unit Testing	Intertie	N/A	2/15/2017	162	No	INC	24	0:00	23:59
124	RT	Unit Testing	Intertie	N/A	2/16/2017	190	No	INC	24	0:00	23:59
125	RT	Unit Testing	Intertie	N/A	2/17/2017	188- 215	No	INC	24	0:00	23:59
126	RT	Unit Testing	Intertie	N/A	2/18/2017	215- 241	No	INC	24	0:00	23:59
127	RT	Unit Testing	Intertie	N/A	2/19/2017	210	No	INC	24	0:00	23:59
128	RT	Unit Testing	Intertie	N/A	2/20/2017	210- 236	No	INC	24	0:00	23:59
129	RT	Unit Testing	Intertie	N/A	2/21/2017	154	No	INC	24	0:00	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
130	RT	Unit Testing	Intertie	N/A	2/22/2017	147-171	No	INC	24	0:00	23:59
131	RT	Unit Testing	Intertie	N/A	2/23/2017	234	No	INC	24	0:00	23:59
132	RT	Unit Testing	Intertie	N/A	2/24/2017	297	No	INC	24	0:00	23:59
133	RT	Unit Testing	Intertie	N/A	2/25/2017	251	No	INC	24	0:00	23:59
134	RT	Unit Testing	Intertie	N/A	2/26/2017	251	No	INC	24	0:00	23:59
135	RT	Unit Testing	Intertie	N/A	2/27/2017	251	No	INC	24	0:00	23:59
136	RT	Unit Testing	Intertie	N/A	2/28/2017	130-297	No	INC	24	0:00	23:59
137	RT	Unit Testing	PG&E	Bay Area	2/28/2017	175	No	INC	9	12:00	20:59
138	RT	Unit Testing	PG&E	N/A	2/7/2017	98	No	INC	1	22:20	23:19
139	RT	Unit Testing	SCE	LA Basin	2/2/2017	49	Yes	DEC	4	15:45	18:59
140	RT	Unit Testing	SCE	LA Basin	2/2/2017	49	Yes	INC	4	15:45	18:59
141	RT	Unplanned Outage	PG&E	Bay Area	2/15/2017	285	No	INC	6	8:00	13:44
142	RT	Unplanned Outage	PG&E	Bay Area	2/23/2017	489	No	INC	1	15:50	16:44
143	RT	Unplanned Outage	PG&E	Fresno	2/15/2017	83- 166	No	INC	4	11:15	14:29
144	RT	Unplanned Outage	PG&E	N/A	2/15/2017	400	No	DEC	5	9:25	13:29
145	RT	Unplanned Outage	PG&E	N/A	2/28/2017	32- 76	No	DEC	14	6:00	19:29
146	RT	Unplanned Outage	PG&E	N/A	2/28/2017	48	No	INC	14	6:00	19:29
147	RT	Unplanned Outage	PG&E	Sierra	2/10/2017	45- 90	No	INC	14	10:30	23:59
148	RT	Unplanned Outage	PG&E	Sierra	2/11/2017	45	Yes	INC	24	0:00	23:59
149	RT	Unplanned Outage	PG&E	Sierra	2/12/2017	45- 90	Yes	INC	24	0:00	23:59
150	RT	Unplanned Outage	PG&E	Sierra	2/13/2017	45	No	INC	4	0:00	3:14
151	RT	Voltage Support	PG&E	Bay Area	2/16/2017	180	No	INC	13	3:00	15:59
152	RT	Voltage Support	PG&E	Fresno	2/1/2017	-312--310	No	DEC	15	9:50	23:59
153	RT	Voltage Support	PG&E	Fresno	2/2/2017	-313--310	No	DEC	24	0:00	23:59
154	RT	Voltage Support	PG&E	Fresno	2/3/2017	-312- 83	No	DEC	24	0:00	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
155	RT	Voltage Support	PG&E	Fresno	2/3/2017	83	No	INC	1	15:35	16:24
156	RT	Voltage Support	PG&E	Fresno	2/4/2017	-313-- 312	No	DEC	24	0:00	23:59
157	RT	Voltage Support	PG&E	Fresno	2/4/2017	83- 166	No	INC	4	7:35	10:44
158	RT	Voltage Support	PG&E	Fresno	2/5/2017	-312- 83	No	DEC	24	0:00	23:59
159	RT	Voltage Support	PG&E	Fresno	2/5/2017	83- 166	Yes	INC	4	15:15	18:59
160	RT	Voltage Support	PG&E	Fresno	2/6/2017	-308	No	DEC	6	0:00	5:44
161	RT	Voltage Support	PG&E	Fresno	2/7/2017	-312	No	DEC	5	0:45	5:44
162	RT	Voltage Support	PG&E	Fresno	2/8/2017	-311	No	DEC	23	1:00	23:59
163	RT	Voltage Support	PG&E	Fresno	2/8/2017	83	Yes	INC	12	5:15	16:59
164	RT	Voltage Support	PG&E	Fresno	2/9/2017	-311	No	DEC	5	0:00	4:59
165	RT	Voltage Support	PG&E	Fresno	2/9/2017	83- 166	Yes	INC	4	5:15	8:59
166	RT	Voltage Support	PG&E	Fresno	2/10/2017	-617-- 308	No	DEC	23	0:45	23:29
167	RT	Voltage Support	PG&E	Fresno	2/10/2017	83	Yes	INC	18	6:15	23:44
168	RT	Voltage Support	PG&E	Fresno	2/11/2017	-310- 166	No	DEC	20	0:15	19:59
169	RT	Voltage Support	PG&E	Fresno	2/11/2017	83- 249	Yes	INC	18	6:00	23:59
170	RT	Voltage Support	PG&E	Fresno	2/12/2017	-1E3-- 310	No	DEC	24	0:00	23:59
171	RT	Voltage Support	PG&E	Fresno	2/12/2017	0	No	INC	1	0:00	0:59
172	RT	Voltage Support	PG&E	Fresno	2/13/2017	-310	No	DEC	6	0:00	5:29
173	RT	Voltage Support	PG&E	Fresno	2/14/2017	-311	No	DEC	1	23:30	23:59
174	RT	Voltage Support	PG&E	Fresno	2/14/2017	83- 166	Yes	INC	17	0:40	16:59
175	RT	Voltage Support	PG&E	Fresno	2/15/2017	-311	No	DEC	24	0:00	23:59
176	RT	Voltage Support	PG&E	Fresno	2/16/2017	-315-- 311	No	DEC	12	4:00	15:59
177	RT	Voltage Support	PG&E	Fresno	2/17/2017	-311	No	DEC	5	0:30	4:59
178	RT	Voltage Support	PG&E	Fresno	2/17/2017	-311- 83	No	INC	16	0:30	15:59
179	RT	Voltage Support	PG&E	Fresno	2/18/2017	-311- 83	No	DEC	17	1:30	17:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
180	RT	Voltage Support	PG&E	Fresno	2/18/2017	83	No	INC	12	6:30	17:59
181	RT	Voltage Support	PG&E	Fresno	2/19/2017	83- 166	Yes	INC	6	1:20	6:59
182	RT	Voltage Support	PG&E	Fresno	2/20/2017	-311	No	DEC	1	11:35	11:59
183	RT	Voltage Support	PG&E	Fresno	2/21/2017	83	No	INC	2	5:30	7:29
184	RT	Voltage Support	PG&E	Fresno	2/22/2017	-311	No	DEC	2	0:30	1:59
185	RT	Voltage Support	PG&E	Fresno	2/22/2017	-311- 83	No	INC	19	0:30	18:44
186	RT	Voltage Support	PG&E	Fresno	2/23/2017	83	Yes	INC	13	5:15	17:59
187	RT	Voltage Support	PG&E	Fresno	2/24/2017	0	No	DEC	1	23:30	23:59
188	RT	Voltage Support	PG&E	Fresno	2/24/2017	83	Yes	INC	2	21:00	22:59
189	RT	Voltage Support	PG&E	Fresno	2/25/2017	-308	No	DEC	24	0:00	23:59
190	RT	Voltage Support	PG&E	Fresno	2/25/2017	-308- 0	No	INC	24	0:00	23:59
191	RT	Voltage Support	PG&E	Fresno	2/26/2017	-308- 83	No	DEC	23	0:00	22:29
192	RT	Voltage Support	PG&E	Fresno	2/26/2017	83	No	INC	3	19:45	22:29
193	RT	Voltage Support	PG&E	Fresno	2/27/2017	83	No	INC	2	5:30	6:59
194	RT	Voltage Support	PG&E	Fresno	2/28/2017	83- 166	No	INC	1	5:15	6:14
195	RT	Voltage Support	PG&E	Sierra	2/10/2017	20- 40	No	INC	12	12:00	23:59
196	RT	Voltage Support	PG&E	Sierra	2/11/2017	20	No	INC	2	0:00	1:59
197	RT	Voltage Support	PG&E	Sierra	2/12/2017	20	No	INC	3	14:00	16:59

## 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