



Exceptional Dispatch Report

Table 1: March 2017

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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 15th of each month and one issued on the 30th of each month. This report provides data on the frequency and reasons for Exceptional Dispatches issued in March 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.¹ 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.²

The following reason for exceptional dispatch instructions in March 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 following

¹ 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).

² 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>

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 March 2017, which are self explanatory.

The data in Table 1 is based on a template specified in the September 2009 order.³ 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 267 exceptional dispatches in March 2017, as compared to 197 exceptional dispatches in February 2017. Exceptional dispatches issued for the following reasons accounted for approximately 52 percent of the total exceptional dispatches during the reporting period: planned transmission outages, software limitations, and operating procedure number 7110 (along with 7500 and 7820). Many of the exceptional dispatches with the reason “Other Reliability Requirement” were due to Real Time Contingency Analysis.

³ 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 March 2017

**California Independent System Operator Corporation
Exceptional Dispatch Report
May 15, 2017**

Chart 1: Table of Exceptional Dispatches for Period 01/March/2017 - 31/March/2017

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	Conditions beyond the control of the CAISO	PG&E	Fresno	3/22/2017	0	No	INC	2	14:39	15:39
2	RT	Conditions beyond the control of the CAISO	PG&E	Fresno	3/29/2017	83- 978	No	DEC	4	18:15	21:59
3	RT	Conditions beyond the control of the CAISO	PG&E	Fresno	3/29/2017	555	No	INC	4	18:40	21:59
4	RT	Conditions beyond the control of the CAISO	PG&E	Fresno	3/30/2017	583	No	DEC	4	18:20	21:59
5	RT	Conditions beyond the control of the CAISO	PG&E	Fresno	3/31/2017	275	No	DEC	4	18:00	21:59
6	RT	Conditions beyond the control of the CAISO	PG&E	Fresno	3/31/2017	300-325	No	INC	6	16:55	21:59
7	RT	Conditions beyond the control of the CAISO	PG&E	N/A	3/29/2017	92	No	DEC	4	18:40	21:59
8	RT	Conditions beyond the control of the CAISO	PG&E	N/A	3/30/2017	86	No	DEC	4	18:15	21:59
9	RT	Fast Start Unit Management	PG&E	Bay Area	3/19/2017	0	No	INC	2	1:00	2:04
10	RT	Fast Start Unit Management	SCE	LA Basin	3/7/2017	0	No	INC	1	21:35	22:29
11	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	3/31/2017	42- 50	No	DEC	2	19:09	20:59
12	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	3/31/2017	28- 50	No	INC	2	19:50	20:59
13	RT	Load Forecast Uncertainty	SCE	N/A	3/12/2017	172	No	INC	11	9:45	19:59
14	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	3/15/2017	20	No	INC	10	14:30	23:59
15	RT	Load Pull	PG&E	Fresno	3/23/2017	0	No	INC	1	17:30	18:29
16	RT	Market Disruption	N/A	N/A	3/8/2017	0	No	INC	2	0:10	1:14
17	RT	Market Disruption	PG&E	Bay Area	3/8/2017	0	No	INC	2	0:10	2:04
18	RT	Market Disruption	PG&E	Fresno	3/8/2017	500	No	INC	3	0:10	3:09
19	RT	Market Disruption	PG&E	Fresno	3/11/2017	0	No	INC	1	15:55	16:54
20	RT	Market Disruption	PG&E	N/A	3/8/2017	0	No	INC	2	0:10	2:04

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
21	RT	Market Disruption	PG&E	Sierra	3/8/2017	0	No	INC	2	0:10	1:34
22	RT	Market Disruption	PG&E	Stockton	3/8/2017	0	No	DEC	5	1:10	5:29
23	RT	Market Disruption	PG&E	Stockton	3/8/2017	0	No	INC	5	1:10	5:29
24	RT	Market Disruption	SCE	Big Creek-Ventura	3/8/2017	0	No	DEC	5	0:00	4:59
25	RT	Market Disruption	SCE	Big Creek-Ventura	3/8/2017	0	No	INC	5	0:00	4:59
26	RT	Market Disruption	SCE	LA Basin	3/8/2017	0	No	INC	3	0:10	2:54
27	RT	Market Disruption	SDG&E	San Diego-IV	3/8/2017	0	No	INC	3	0:10	2:29
28	RT	Operating Procedure Number and Constraint	PG&E	Fresno	3/25/2017	83	No	INC	1	8:30	8:44
29	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/1/2017	21- 102	No	DEC	15	7:15	21:59
30	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/1/2017	12- 102	No	INC	21	2:45	23:44
31	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/2/2017	20	No	DEC	6	16:35	22:29
32	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/2/2017	15- 84	No	INC	19	5:45	23:59
33	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/3/2017	15	No	DEC	2	4:50	6:44
34	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/3/2017	15- 51	No	INC	24	0:00	23:59
35	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/4/2017	15- 52	No	INC	24	0:00	23:58
36	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/5/2017	15- 31	No	DEC	4	17:30	21:29
37	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/5/2017	11- 40	No	INC	17	7:55	23:59
38	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/6/2017	12- 109	No	DEC	24	0:00	23:59
39	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/6/2017	15- 109	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
40	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/7/2017	10- 38	No	DEC	24	0:00	23:59
41	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/7/2017	10- 58	No	INC	24	0:00	23:59
42	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/8/2017	10- 20	No	DEC	18	2:35	19:59
43	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/8/2017	10- 44	No	INC	24	0:00	23:59
44	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/9/2017	12- 32	No	DEC	20	4:25	23:59
45	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/9/2017	12- 47	No	INC	20	4:25	23:59
46	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/10/2017	10- 26	No	DEC	21	2:25	22:59
47	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/10/2017	10- 73	No	INC	24	0:00	23:59
48	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/11/2017	21- 39	No	DEC	5	16:25	20:29
49	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/11/2017	14- 41	No	INC	24	0:00	23:59
50	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/12/2017	14	No	INC	1	0:00	0:59
51	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/12/2017	30	No	DEC	3	20:45	22:59
52	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/12/2017	30- 60	No	INC	4	20:45	23:59
53	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/13/2017	14- 15	No	DEC	18	6:55	23:59
54	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/13/2017	14- 30	No	INC	18	6:55	23:59
55	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/14/2017	30	No	DEC	13	7:55	19:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
56	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/14/2017	23- 33	No	INC	24	0:00	23:29
57	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/15/2017	15	No	DEC	3	21:15	23:59
58	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/15/2017	30- 96	No	INC	18	6:15	23:59
59	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/16/2017	15- 40	No	DEC	24	0:00	23:59
60	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/16/2017	15- 60	No	INC	24	0:00	23:59
61	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/17/2017	32- 35	No	DEC	19	5:20	23:59
62	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/17/2017	21- 35	No	INC	19	5:20	23:59
63	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/18/2017	10- 25	No	DEC	21	3:45	23:59
64	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/18/2017	10- 42	No	INC	24	0:00	23:59
65	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/19/2017	21- 34	No	DEC	14	10:15	23:59
66	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/19/2017	20- 34	No	INC	24	0:00	23:59
67	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/20/2017	10- 64	No	DEC	24	0:00	23:59
68	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/20/2017	10- 64	No	INC	24	0:00	23:59
69	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/21/2017	13- 35	No	DEC	24	0:55	23:59
70	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/21/2017	16- 40	No	INC	24	0:00	23:59
71	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/22/2017	12- 25	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
72	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/23/2017	15- 45	No	DEC	17	6:15	22:59
73	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/23/2017	15- 45	No	INC	18	6:15	23:59
74	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/24/2017	10- 39	No	DEC	22	2:25	23:59
75	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/24/2017	10- 39	No	INC	24	0:00	23:59
76	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/25/2017	16	No	DEC	17	7:25	23:59
77	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/25/2017	16- 25	No	INC	24	0:00	23:59
78	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/26/2017	39	No	DEC	10	13:30	23:29
79	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/26/2017	10- 39	No	INC	24	0:00	23:29
80	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/27/2017	10- 25	No	DEC	6	5:45	11:29
81	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/27/2017	10- 63	No	INC	19	5:45	23:59
82	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/28/2017	15- 53	No	DEC	23	0:00	22:59
83	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/28/2017	11- 57	No	INC	24	0:00	23:59
84	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/29/2017	15- 40	No	DEC	20	4:30	23:59
85	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/29/2017	15- 41	No	INC	24	0:00	23:59
86	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/30/2017	13- 35	No	DEC	12	8:45	19:59
87	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/30/2017	14- 61	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
88	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/31/2017	16- 77	No	DEC	22	2:15	23:59
89	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	3/31/2017	28- 94	No	INC	24	0:00	23:59
90	RT	Operating Procedure Number and Constraint (7500)	SCE	Big Creek-Ventura	3/6/2017	854	No	DEC	1	14:25	14:59
91	RT	Operating Procedure Number and Constraint (7820)	SDG&E	San Diego-IV	3/16/2017	40- 131	No	INC	24	0:00	23:59
92	RT	Operating Procedure Number and Constraint (7820)	SDG&E	San Diego-IV	3/17/2017	131	No	INC	17	5:45	21:59
93	RT	Other Reliability Requirement	PG&E	Fresno	3/25/2017	83	No	INC	1	8:25	8:44
94	RT	Other Reliability Requirement	PG&E	Fresno	3/26/2017	0	No	INC	1	16:50	17:49
95	RT	Other Reliability Requirement	PG&E	Fresno	3/27/2017	40- 45	No	DEC	2	14:45	16:29
96	RT	Other Reliability Requirement	PG&E	Fresno	3/27/2017	50	No	INC	1	16:10	16:44
97	RT	Other Reliability Requirement	PG&E	Fresno	3/28/2017	357-1590	No	DEC	3	18:33	20:59
98	RT	Other Reliability Requirement	PG&E	Fresno	3/28/2017	438	No	INC	2	18:33	19:59
99	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/1/2017	10- 30	No	DEC	16	6:50	21:59
100	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/1/2017	24	No	INC	4	18:40	21:59
101	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/2/2017	20	No	DEC	4	16:35	20:29
102	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/2/2017	15- 30	No	INC	16	8:40	23:59
103	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/3/2017	15	No	INC	6	0:00	5:29
104	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/7/2017	36	No	INC	2	6:35	7:59
105	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/15/2017	25	No	DEC	4	16:45	19:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
106	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/15/2017	25- 112	No	INC	13	7:20	19:59
107	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/28/2017	77	No	DEC	9	7:55	15:59
108	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	3/28/2017	30- 77	No	INC	9	7:55	15:59
109	RT	Planned Transmission Outage and Constraint	PG&E	N/A	3/16/2017	20	No	INC	3	5:45	8:14
110	RT	Planned Transmission Outage and Constraint	PG&E	N/A	3/26/2017	20- 60	No	INC	9	1:40	9:59
111	RT	Planned Transmission Outage and Constraint	PG&E	NCNB	3/7/2017	66- 72	No	DEC	7	8:55	15:29
112	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	3/7/2017	4- 8	No	INC	3	21:05	23:59
113	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	3/11/2017	20	No	INC	4	15:45	18:59
114	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	3/19/2017	20	Yes	INC	18	6:45	23:59
115	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	3/20/2017	20- 40	Yes	INC	20	0:00	19:59
116	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	3/25/2017	20- 40	No	INC	24	0:45	23:59
117	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	3/26/2017	20	No	INC	24	0:00	23:59
118	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	3/27/2017	20- 40	Yes	INC	10	0:00	9:14
119	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/12/2017	240- 480	No	DEC	3	18:50	21:29
120	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/13/2017	215	No	DEC	4	5:00	8:59
121	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/13/2017	215	No	INC	4	5:00	8:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
122	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/14/2017	230	No	DEC	17	5:30	21:59
123	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/14/2017	230	No	INC	17	5:30	21:59
124	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/17/2017	250-260	No	INC	1	22:30	23:29
125	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/18/2017	230	No	DEC	4	18:55	21:59
126	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/18/2017	250	No	INC	2	22:45	23:59
127	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/19/2017	220	No	DEC	7	17:00	23:59
128	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/19/2017	220-250	No	INC	24	0:00	23:59
129	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/20/2017	230-255	No	DEC	5	18:10	22:44
130	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/20/2017	230-262	No	INC	7	15:45	22:44
131	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/21/2017	230-240	No	DEC	16	7:00	22:59
132	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	3/21/2017	230-240	No	INC	16	7:00	22:59
133	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	3/20/2017	552-730	No	DEC	4	18:40	21:59
134	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	3/20/2017	160-715	No	INC	4	18:20	21:59
135	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	3/21/2017	547	No	DEC	3	18:35	20:44
136	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	3/22/2017	195	No	DEC	7	7:10	13:59
137	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	3/22/2017	195	No	INC	7	7:10	13:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
138	RT	Planned Transmission Outage and Constraint	SCE	N/A	3/29/2017	172	No	INC	9	8:00	16:59
139	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	3/6/2017	155	No	INC	7	9:00	15:59
140	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	3/13/2017	20	No	INC	15	7:00	21:59
141	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	3/15/2017	270-280	No	DEC	9	8:40	16:44
142	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	3/15/2017	20- 380	No	INC	23	1:00	23:59
143	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	3/17/2017	20- 40	No	INC	21	3:00	23:59
144	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	3/18/2017	20- 131	No	INC	24	0:00	23:59
145	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	3/19/2017	20- 358	No	INC	15	0:00	14:59
146	RT	Software Limitation	PG&E	Bay Area	3/21/2017	0	No	INC	1	23:00	23:59
147	RT	Software Limitation	PG&E	Bay Area	3/22/2017	0	No	INC	1	0:00	0:04
148	RT	Software Limitation	PG&E	Fresno	3/1/2017	-316	No	INC	1	9:00	9:59
149	RT	Software Limitation	PG&E	Fresno	3/4/2017	-315	No	INC	2	9:00	10:59
150	RT	Software Limitation	PG&E	Fresno	3/11/2017	83	No	DEC	2	17:00	18:59
151	RT	Software Limitation	PG&E	Fresno	3/11/2017	83	No	INC	2	17:00	18:59
152	RT	Software Limitation	PG&E	Fresno	3/12/2017	-317	No	INC	1	10:00	10:59
153	RT	Software Limitation	PG&E	Fresno	3/13/2017	83	No	INC	2	15:00	16:59
154	RT	Software Limitation	PG&E	Fresno	3/15/2017	0	No	INC	1	16:00	16:54
155	RT	Software Limitation	PG&E	Fresno	3/29/2017	-311	No	DEC	2	11:00	12:59
156	RT	Software Limitation	PG&E	Fresno	3/29/2017	0	No	INC	2	10:30	11:44
157	RT	Software Limitation	PG&E	Fresno	3/31/2017	0	No	INC	2	22:00	23:29
158	RT	Software Limitation	PG&E	Humboldt	3/9/2017	0	No	INC	1	0:10	1:09
159	RT	Software Limitation	PG&E	Humboldt	3/10/2017	0	No	INC	1	0:10	1:09

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
160	RT	Software Limitation	PG&E	Humboldt	3/20/2017	0	No	INC	1	0:15	1:14
161	RT	Software Limitation	PG&E	Humboldt	3/27/2017	16	No	INC	1	12:00	12:59
162	RT	Software Limitation	SCE	LA Basin	3/20/2017	0	No	INC	1	12:45	13:44
163	RT	Software Limitation	SCE	LA Basin	3/23/2017	0	No	DEC	2	18:52	20:44
164	RT	Software Limitation	SCE	LA Basin	3/23/2017	0	No	INC	2	18:52	20:44
165	RT	Software Limitation	SCE	N/A	3/4/2017	0	No	INC	8	4:00	11:59
166	RT	Software Limitation	SCE	N/A	3/9/2017	0	No	DEC	8	7:55	15:54
167	RT	Software Limitation	SCE	N/A	3/9/2017	0	No	INC	8	7:55	15:54
168	RT	Software Limitation	SDG&E	San Diego-IV	3/2/2017	-42	No	DEC	13	11:00	23:59
169	RT	Software Limitation	SDG&E	San Diego-IV	3/6/2017	-40	No	INC	1	9:00	9:59
170	RT	Software Limitation	SDG&E	San Diego-IV	3/8/2017	0	No	INC	1	0:45	1:19
171	RT	Software Limitation	SDG&E	San Diego-IV	3/17/2017	300-315	No	INC	2	9:00	10:59
172	RT	Software Limitation	SDG&E	San Diego-IV	3/20/2017	350	No	INC	1	9:27	9:54
173	RT	Start-Up Instructions	SCE	LA Basin	3/24/2017	0	No	INC	1	21:00	21:29
174	RT	Start-Up Instructions	SCE	N/A	3/10/2017	0	No	DEC	8	8:05	16:04
175	RT	Start-Up Instructions	SCE	N/A	3/10/2017	0	No	INC	8	8:05	16:04
176	RT	Unit Testing	Intertie	N/A	3/1/2017	297	No	INC	24	0:00	23:59
177	RT	Unit Testing	Intertie	N/A	3/2/2017	250	No	INC	24	0:00	23:59
178	RT	Unit Testing	Intertie	N/A	3/3/2017	254	No	INC	24	0:00	23:59
179	RT	Unit Testing	Intertie	N/A	3/4/2017	251	No	INC	24	0:00	23:59
180	RT	Unit Testing	Intertie	N/A	3/5/2017	222	No	INC	24	0:00	23:59
181	RT	Unit Testing	Intertie	N/A	3/6/2017	251	No	INC	24	0:00	23:59
182	RT	Unit Testing	Intertie	N/A	3/7/2017	297	No	INC	24	0:00	23:59
183	RT	Unit Testing	Intertie	N/A	3/8/2017	297	No	INC	24	0:15	23:59
184	RT	Unit Testing	Intertie	N/A	3/9/2017	297	No	INC	24	0:00	23:59
185	RT	Unit Testing	Intertie	N/A	3/10/2017	297	No	INC	24	0:00	23:59
186	RT	Unit Testing	Intertie	N/A	3/11/2017	297	No	INC	24	0:00	23:59
187	RT	Unit Testing	Intertie	N/A	3/12/2017	297	No	INC	23	1:00	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
188	RT	Unit Testing	Intertie	N/A	3/13/2017	297	No	INC	24	0:00	23:59
189	RT	Unit Testing	Intertie	N/A	3/14/2017	297	No	INC	14	10:00	23:59
190	RT	Unit Testing	Intertie	N/A	3/15/2017	297	No	INC	24	0:00	23:59
191	RT	Unit Testing	Intertie	N/A	3/16/2017	297	No	INC	24	0:00	23:59
192	RT	Unit Testing	Intertie	N/A	3/17/2017	297	No	INC	24	0:00	23:59
193	RT	Unit Testing	Intertie	N/A	3/19/2017	249-297	No	INC	24	0:00	23:59
194	RT	Unit Testing	Intertie	N/A	3/20/2017	249-297	No	INC	24	0:00	23:59
195	RT	Unit Testing	Intertie	N/A	3/21/2017	297	No	INC	24	0:00	23:59
196	RT	Unit Testing	Intertie	N/A	3/22/2017	297	No	INC	24	0:00	23:59
197	RT	Unit Testing	Intertie	N/A	3/23/2017	297	No	INC	24	0:00	23:59
198	RT	Unit Testing	Intertie	N/A	3/24/2017	297	No	INC	24	0:00	23:59
199	RT	Unit Testing	Intertie	N/A	3/25/2017	297	No	INC	24	0:00	23:59
200	RT	Unit Testing	Intertie	N/A	3/26/2017	266-269	No	INC	18	6:40	23:59
201	RT	Unit Testing	Intertie	N/A	3/27/2017	269	No	INC	23	0:00	22:59
202	RT	Unit Testing	Intertie	N/A	3/28/2017	297	No	INC	23	0:00	22:59
203	RT	Unit Testing	Intertie	N/A	3/29/2017	297	No	INC	24	0:00	23:59
204	RT	Unit Testing	Intertie	N/A	3/30/2017	297	No	INC	24	0:00	23:59
205	RT	Unit Testing	Intertie	N/A	3/31/2017	175-297	No	INC	24	0:00	23:59
206	RT	Unit Testing	N/A	N/A	3/23/2017	75	No	INC	1	11:00	11:59
207	RT	Unit Testing	PG&E	Fresno	3/14/2017	40	No	INC	1	19:06	19:49
208	RT	Unit Testing	PG&E	Fresno	3/16/2017	102-104	No	INC	2	19:00	20:59
209	RT	Unit Testing	PG&E	N/A	3/4/2017	194	No	INC	1	19:35	19:44
210	RT	Unit Testing	PG&E	N/A	3/17/2017	2	No	INC	1	3:03	3:34
211	RT	Unit Testing	PG&E	Sierra	3/3/2017	159	No	INC	1	13:20	13:59
212	RT	Unit Testing	PG&E	Sierra	3/4/2017	46	No	INC	1	12:35	13:14

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
213	RT	Unit Testing	PG&E	Sierra	3/16/2017	92	No	INC	1	19:10	19:49
214	RT	Unit Testing	SCE	LA Basin	3/2/2017	43	No	INC	1	12:11	12:44
215	RT	Unit Testing	SCE	LA Basin	3/4/2017	150	No	INC	1	18:24	18:49
216	RT	Unit Testing	SCE	LA Basin	3/7/2017	150	No	INC	1	16:00	16:29
217	RT	Unit Testing	SCE	LA Basin	3/14/2017	33- 235	No	INC	4	19:26	22:49
218	RT	Unit Testing	SCE	N/A	3/7/2017	354	No	INC	1	20:00	20:44
219	RT	Unit Testing	SCE	N/A	3/14/2017	225	No	INC	1	11:15	11:59
220	RT	Unit Testing	SCE	N/A	3/29/2017	196	No	INC	1	11:38	11:47
221	RT	Unit Testing	SDG&E	San Diego-IV	3/14/2017	47- 48	No	INC	2	19:54	20:59
222	RT	Unplanned Outage	PG&E	N/A	3/1/2017	10- 20	No	DEC	15	6:00	20:59
223	RT	Unplanned Outage	PG&E	N/A	3/1/2017	70- 102	No	INC	14	6:00	19:29
224	RT	Unplanned Outage	SDG&E	San Diego-IV	3/19/2017	280	No	DEC	4	16:00	19:59
225	RT	Unplanned Outage	SDG&E	San Diego-IV	3/19/2017	68- 638	No	INC	11	11:00	21:59
226	RT	Voltage Support	PG&E	Fresno	3/1/2017	85	No	DEC	2	16:30	18:14
227	RT	Voltage Support	PG&E	Fresno	3/1/2017	85	No	INC	11	8:00	18:14
228	RT	Voltage Support	PG&E	Fresno	3/4/2017	-315-- 314	No	DEC	24	0:00	23:59
229	RT	Voltage Support	PG&E	Fresno	3/4/2017	83	Yes	INC	2	15:45	16:59
230	RT	Voltage Support	PG&E	Fresno	3/5/2017	-314	No	DEC	24	0:00	23:59
231	RT	Voltage Support	PG&E	Fresno	3/5/2017	83	No	INC	1	16:15	16:59
232	RT	Voltage Support	PG&E	Fresno	3/6/2017	-314	No	DEC	5	0:00	4:59
233	RT	Voltage Support	PG&E	Fresno	3/6/2017	-314	No	INC	5	0:00	4:59
234	RT	Voltage Support	PG&E	Fresno	3/7/2017	-314	No	DEC	5	0:35	4:44
235	RT	Voltage Support	PG&E	Fresno	3/7/2017	166	No	INC	3	21:05	23:59
236	RT	Voltage Support	PG&E	Fresno	3/8/2017	83- 166	Yes	INC	24	0:00	23:59
237	RT	Voltage Support	PG&E	Fresno	3/9/2017	83- 166	No	INC	24	0:00	23:59
238	RT	Voltage Support	PG&E	Fresno	3/10/2017	83- 166	Yes	INC	8	0:00	7:44
239	RT	Voltage Support	PG&E	Fresno	3/11/2017	-317	No	DEC	4	1:00	4:44
240	RT	Voltage Support	PG&E	Fresno	3/12/2017	-317	No	DEC	1	23:45	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
241	RT	Voltage Support	PG&E	Fresno	3/12/2017	83	No	INC	1	8:35	9:29
242	RT	Voltage Support	PG&E	Fresno	3/13/2017	-317-- 308	No	DEC	15	0:00	14:59
243	RT	Voltage Support	PG&E	Fresno	3/13/2017	83	Yes	INC	14	4:30	17:59
244	RT	Voltage Support	PG&E	Fresno	3/14/2017	-315	No	DEC	5	0:00	4:29
245	RT	Voltage Support	PG&E	Fresno	3/16/2017	-315	No	DEC	4	1:00	4:29
246	RT	Voltage Support	PG&E	Fresno	3/17/2017	-307	No	DEC	1	23:50	23:59
247	RT	Voltage Support	PG&E	Fresno	3/18/2017	-312-- 307	No	DEC	24	0:00	23:59
248	RT	Voltage Support	PG&E	Fresno	3/19/2017	-312	No	DEC	24	0:00	23:59
249	RT	Voltage Support	PG&E	Fresno	3/19/2017	83	Yes	INC	6	17:00	22:59
250	RT	Voltage Support	PG&E	Fresno	3/20/2017	-312	No	DEC	24	0:00	23:59
251	RT	Voltage Support	PG&E	Fresno	3/20/2017	-312	No	INC	6	0:00	5:44
252	RT	Voltage Support	PG&E	Fresno	3/21/2017	-312	No	DEC	24	0:00	23:59
253	RT	Voltage Support	PG&E	Fresno	3/22/2017	-312	No	DEC	6	0:00	5:44
254	RT	Voltage Support	PG&E	Fresno	3/24/2017	-312	No	DEC	5	0:45	5:44
255	RT	Voltage Support	PG&E	Fresno	3/25/2017	-315-- 311	No	DEC	18	0:03	17:44
256	RT	Voltage Support	PG&E	Fresno	3/25/2017	-311- 83	No	INC	12	6:00	17:44
257	RT	Voltage Support	PG&E	Fresno	3/26/2017	-310	No	DEC	1	0:30	0:59
258	RT	Voltage Support	PG&E	Fresno	3/28/2017	-311	No	DEC	1	10:40	10:59
259	RT	Voltage Support	PG&E	Fresno	3/28/2017	83	Yes	INC	1	3:15	3:59
260	RT	Voltage Support	PG&E	Sierra	3/30/2017	20- 40	Yes	INC	9	15:35	23:59
261	RT	Voltage Support	PG&E	Sierra	3/31/2017	20	Yes	INC	7	0:00	6:59
262	RT	Voltage Support	SCE	N/A	3/7/2017	172	No	INC	5	19:50	23:59
263	RT	Voltage Support	SCE	N/A	3/8/2017	172	No	INC	24	0:00	23:59
264	RT	Voltage Support	SCE	N/A	3/9/2017	172	No	INC	24	0:00	23:59
265	RT	Voltage Support	SCE	N/A	3/10/2017	172	No	INC	24	0:00	23:59
266	RT	Voltage Support	SCE	N/A	3/11/2017	172	No	INC	23	1:00	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
267	RT	Voltage Support	SCE	N/A	3/12/2017	172	No	INC	14	0:00	16:34

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