



Exceptional Dispatch Report

Table 1: December 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 December 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 December 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

¹ The CAISO can issue exceptional dispatch instructions subject to authority of the CAISO Tariff Section 34.11 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>

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 December 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 210 exceptional dispatches in December 2017, as compared to 220 exceptional dispatches in November 2017. Exceptional dispatches issued for the following reasons accounted for approximately 49 percent of the total exceptional dispatches during the reporting period: planned transmission outages, software limitations, and operating procedure number 7110. 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 December 2017

**California Independent System Operator Corporation
Exceptional Dispatch Report
February 15, 2018**

Chart 1: Table of Exceptional Dispatches for Period 01/December/2017 - 31/December/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	SCE	Big Creek-Ventura	12/5/2017	20- 638	No	INC	12	12:00	23:59
2	RT	Conditions beyond the control of the CAISO	SCE	Big Creek-Ventura	12/6/2017	245-479	No	INC	24	0:00	23:59
3	RT	Conditions beyond the control of the CAISO	SCE	Big Creek-Ventura	12/7/2017	265-419	No	INC	24	0:00	23:59
4	RT	Conditions beyond the control of the CAISO	SCE	Big Creek-Ventura	12/8/2017	228-428	Yes	INC	24	0:00	23:59
5	RT	Conditions beyond the control of the CAISO	SCE	Big Creek-Ventura	12/9/2017	54- 101	No	INC	6	14:00	19:59
6	RT	Conditions beyond the control of the CAISO	SCE	Big Creek-Ventura	12/9/2017	239-529	No	INC	24	0:00	23:59
7	RT	Conditions beyond the control of the CAISO	SCE	Big Creek-Ventura	12/10/2017	190-460	Yes	INC	24	0:00	23:59
8	RT	Conditions beyond the control of the CAISO	SCE	Big Creek-Ventura	12/11/2017	267-430	No	INC	24	0:00	23:59
9	RT	Conditions beyond the control of the CAISO	SCE	Big Creek-Ventura	12/12/2017	40- 454	No	INC	24	0:00	23:59
10	RT	Contingency Dispatch	PG&E	Bay Area	12/21/2017	240	No	INC	2	15:49	16:59
11	RT	Contingency Dispatch	SCE	Big Creek-Ventura	12/21/2017	63- 80	No	INC	2	15:49	16:59
12	RT	Contingency Dispatch	SCE	LA Basin	12/21/2017	232-234	No	INC	2	15:49	16:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
13	RT	Contingency Dispatch	SDG&E	San Diego-IV	12/21/2017	30	No	INC	2	15:49	16:59
14	RT	Incomplete or Inaccurate Transmission	PG&E	Bay Area	12/5/2017	20	No	DEC	8	7:00	14:14
15	RT	Incomplete or Inaccurate Transmission	PG&E	Bay Area	12/5/2017	20	No	INC	8	7:00	14:14
16	RT	Incomplete or Inaccurate Transmission	SCE	Big Creek-Ventura	12/9/2017	101	No	INC	5	19:40	23:59
17	RT	Incomplete or Inaccurate Transmission	SCE	Big Creek-Ventura	12/10/2017	54- 101	No	INC	3	0:00	2:29
18	RT	Load Forecast Uncertainty	PG&E	Fresno	12/2/2017	83	No	INC	1	15:45	16:14
19	RT	Load Forecast Uncertainty	PG&E	Fresno	12/3/2017	200	No	DEC	1	17:00	17:14
20	RT	Load Forecast Uncertainty	SCE	N/A	12/21/2017	180	No	INC	24	0:00	23:59
21	RT	Load Forecast Uncertainty	SCE	N/A	12/22/2017	305	No	INC	24	0:00	23:59
22	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	12/8/2017	20	No	INC	22	2:00	23:59
23	RT	Load Pull	SCE	LA Basin	12/5/2017	190	No	INC	7	13:50	19:59
24	RT	Load Pull	SCE	LA Basin	12/6/2017	190	No	DEC	6	14:55	19:59
25	RT	Load Pull	SCE	LA Basin	12/6/2017	190	No	INC	6	14:55	19:59
26	RT	Load Pull	SDG&E	San Diego-IV	12/5/2017	63	No	INC	3	17:00	19:59
27	RT	Load Pull	SDG&E	San Diego-IV	12/6/2017	126	No	INC	4	16:00	19:59
28	RT	Load Pull	SDG&E	San Diego-IV	12/11/2017	63	No	INC	5	15:00	19:59
29	RT	Market Disruption	Intertie	N/A	12/22/2017	0	No	INC	1	11:00	11:59
30	RT	Market Disruption	PG&E	Bay Area	12/21/2017	800-960	No	INC	1	15:42	16:39
31	RT	Market Disruption	PG&E	Bay Area	12/22/2017	295	No	DEC	2	11:01	12:14
32	RT	Market Disruption	PG&E	Fresno	12/21/2017	83	No	DEC	1	15:52	16:29
33	RT	Market Disruption	PG&E	Fresno	12/21/2017	83	No	INC	1	15:52	16:29
34	RT	Market Disruption	PG&E	Fresno	12/22/2017	-314	No	DEC	1	11:50	12:29
35	RT	Market Disruption	PG&E	Fresno	12/22/2017	200-404	No	INC	2	11:40	12:59
36	RT	Market Disruption	SCE	N/A	12/21/2017	140	No	INC	1	15:30	16:09
37	RT	Operating Procedure Number and Constraint (7110)	PG&E	Fresno	12/29/2017	14	No	INC	1	7:00	7:14

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
38	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/5/2017	30	No	DEC	14	6:30	19:44
39	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/5/2017	30	No	INC	14	6:30	19:44
40	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/6/2017	16- 64	No	DEC	14	10:50	23:59
41	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/6/2017	16- 160	No	INC	17	6:45	23:29
42	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/7/2017	16	No	DEC	1	6:30	7:29
43	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/7/2017	16- 30	No	DEC	24	0:00	23:29
44	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/7/2017	15- 30	No	INC	3	21:45	23:59
45	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/8/2017	15- 29	No	DEC	15	0:00	14:59
46	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/8/2017	14- 42	No	INC	17	7:45	23:59
47	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/9/2017	15- 28	No	INC	23	0:00	22:59
48	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/10/2017	16- 32	No	DEC	4	20:35	23:59
49	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/10/2017	16- 32	No	INC	4	20:35	23:59
50	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/11/2017	32- 48	No	DEC	23	0:00	22:59
51	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/11/2017	16- 48	No	INC	24	0:00	23:59
52	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/12/2017	16	No	DEC	3	0:30	2:59
53	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/12/2017	30	No	INC	1	0:00	0:44

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
54	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/13/2017	15- 45	No	DEC	10	10:55	20:44
55	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/13/2017	30- 45	No	INC	14	10:55	23:59
56	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/14/2017	30- 60	No	DEC	4	20:55	23:59
57	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/14/2017	14- 60	No	INC	18	6:14	23:59
58	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/15/2017	16- 45	No	DEC	17	0:00	16:59
59	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/15/2017	45	No	INC	9	8:00	16:59
60	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/17/2017	30	No	DEC	1	20:45	21:44
61	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/17/2017	15- 30	No	INC	4	20:45	23:59
62	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/18/2017	15- 32	No	DEC	24	0:00	23:59
63	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/18/2017	16	No	INC	3	21:50	23:59
64	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/19/2017	15- 28	No	DEC	24	0:00	23:59
65	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/19/2017	15- 30	No	INC	24	0:00	23:59
66	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/20/2017	28- 85	No	INC	18	6:30	23:44
67	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/21/2017	28- 30	No	DEC	17	7:45	23:59
68	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/21/2017	28- 30	No	INC	17	7:45	23:59
69	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/22/2017	28	No	INC	1	0:00	0:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
70	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/23/2017	15	No	INC	8	16:40	23:59
71	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/24/2017	30	No	INC	4	9:51	12:59
72	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/25/2017	48	No	INC	3	21:05	23:59
73	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/27/2017	16	No	INC	2	22:00	23:59
74	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/28/2017	32	No	DEC	10	6:45	16:29
75	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/28/2017	16- 48	No	INC	24	0:00	23:59
76	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/29/2017	14- 48	No	INC	18	6:25	23:59
77	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/30/2017	32	No	INC	14	8:00	21:44
78	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/31/2017	15- 32	No	DEC	2	21:10	22:29
79	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	12/31/2017	32	No	INC	2	21:10	22:14
80	RT	Other Reliability Requirement	Intertie	N/A	12/21/2017	114	Yes	INC	1	15:00	15:59
81	RT	Other Reliability Requirement	PG&E	Bay Area	12/16/2017	110	No	INC	3	17:08	19:59
82	RT	Other Reliability Requirement	PG&E	Fresno	12/8/2017	83	No	INC	2	21:15	22:29
83	RT	Other Reliability Requirement	PG&E	Fresno	12/21/2017	-317- 0	No	DEC	2	15:15	16:39
84	RT	Other Reliability Requirement	PG&E	Fresno	12/21/2017	0	No	INC	1	15:40	16:39
85	RT	Other Reliability Requirement	PG&E	Humboldt	12/22/2017	32- 96	No	DEC	17	7:55	23:59
86	RT	Other Reliability Requirement	PG&E	Humboldt	12/22/2017	32- 96	No	INC	17	7:55	23:59
87	RT	Other Reliability Requirement	PG&E	Humboldt	12/23/2017	32- 80	No	INC	3	0:00	2:59
88	RT	Other Reliability Requirement	PG&E	N/A	12/2/2017	27	No	INC	5	1:45	6:29
89	RT	Other Reliability Requirement	PG&E	N/A	12/7/2017	30	No	INC	3	7:35	9:59
90	RT	Other Reliability Requirement	PG&E	N/A	12/18/2017	10- 53	No	DEC	3	7:40	10:29

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
91	RT	Other Reliability Requirement	PG&E	N/A	12/18/2017	43	No	INC	3	7:40	10:29
92	RT	Other Reliability Requirement	SCE	Big Creek-Ventura	12/5/2017	215	No	INC	1	14:30	15:14
93	RT	Other Reliability Requirement	SCE	Big Creek-Ventura	12/5/2017	20- 450	No	INC	4	11:30	14:44
94	RT	Other Reliability Requirement	SDG&E	San Diego-IV	12/5/2017	0	No	INC	1	19:45	20:44
95	RT	Planned Transmission Outage	PG&E	Humboldt	12/1/2017	14- 90	No	DEC	19	5:20	23:59
96	RT	Planned Transmission Outage	PG&E	Humboldt	12/1/2017	16- 90	No	INC	24	0:30	23:59
97	RT	Planned Transmission Outage	PG&E	Humboldt	12/2/2017	14- 28	No	DEC	24	0:00	23:59
98	RT	Planned Transmission Outage	PG&E	Humboldt	12/2/2017	28- 130	No	INC	24	0:00	23:59
99	RT	Planned Transmission Outage	PG&E	Humboldt	12/3/2017	14- 60	No	DEC	24	0:00	23:59
100	RT	Planned Transmission Outage	PG&E	Humboldt	12/3/2017	28- 80	No	INC	24	0:00	23:59
101	RT	Planned Transmission Outage	PG&E	Humboldt	12/4/2017	14- 74	No	DEC	24	0:00	23:59
102	RT	Planned Transmission Outage	PG&E	Humboldt	12/4/2017	32- 98	No	INC	24	0:00	23:59
103	RT	Planned Transmission Outage	PG&E	Humboldt	12/5/2017	60	No	DEC	3	19:25	21:59
104	RT	Planned Transmission Outage	PG&E	Humboldt	12/5/2017	30- 60	No	INC	24	0:00	23:59
105	RT	Planned Transmission Outage	PG&E	Humboldt	12/12/2017	16	No	DEC	3	3:00	5:59
106	RT	Planned Transmission Outage	PG&E	Humboldt	12/12/2017	16- 78	No	DEC	22	2:40	23:59
107	RT	Planned Transmission Outage	PG&E	Humboldt	12/12/2017	28- 78	No	INC	19	5:30	23:59
108	RT	Planned Transmission Outage	PG&E	Humboldt	12/13/2017	60- 90	No	INC	12	0:00	11:29
109	RT	Planned Transmission Outage	PG&E	Humboldt	12/15/2017	15	No	DEC	3	17:00	19:29
110	RT	Planned Transmission Outage	PG&E	Humboldt	12/15/2017	15- 45	No	INC	7	17:00	23:59
111	RT	Planned Transmission Outage	PG&E	Humboldt	12/16/2017	30- 65	No	INC	24	0:00	23:59
112	RT	Planned Transmission Outage	PG&E	Humboldt	12/17/2017	32	No	INC	10	0:00	9:59
113	RT	Planned Transmission Outage	PG&E	Humboldt	12/18/2017	90	No	DEC	9	8:45	17:29
114	RT	Planned Transmission Outage	PG&E	Humboldt	12/18/2017	90	No	INC	9	8:45	17:29
115	RT	Planned Transmission Outage	PG&E	Humboldt	12/27/2017	16- 32	No	INC	7	7:37	13:59
116	RT	Planned Transmission Outage	PG&E	Humboldt	12/28/2017	32	No	DEC	13	7:00	19:59
117	RT	Planned Transmission Outage	PG&E	Humboldt	12/28/2017	32	No	INC	13	7:00	19:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
118	RT	Planned Transmission Outage	PG&E	NCNB	12/12/2017	53- 140	No	DEC	18	6:45	23:59
119	RT	Planned Transmission Outage	PG&E	NCNB	12/12/2017	15- 20	No	INC	1	7:00	7:44
120	RT	Planned Transmission Outage	PG&E	NCNB	12/13/2017	52- 130	No	DEC	14	0:00	13:59
121	RT	Planned Transmission Outage	PG&E	Sierra	12/17/2017	20	No	INC	15	6:00	20:59
122	RT	Planned Transmission Outage	PG&E	Sierra	12/18/2017	20	No	INC	1	8:00	8:29
123	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	12/3/2017	510-600	No	DEC	1	9:05	9:44
124	RT	Planned Transmission Outage	SCE	LA Basin	12/26/2017	10- 20	No	INC	21	3:00	23:59
125	RT	Planned Transmission Outage	SDG&E	San Diego-IV	12/3/2017	185-205	No	INC	11	5:00	15:59
126	RT	Planned Transmission Outage	SDG&E	San Diego-IV	12/7/2017	25- 50	No	INC	5	12:05	16:59
127	RT	Planned Transmission Outage	SDG&E	San Diego-IV	12/16/2017	63	No	INC	13	7:00	19:59
128	RT	Planned Transmission Outage	SDG&E	San Diego-IV	12/18/2017	68	No	DEC	13	7:00	19:59
129	RT	Planned Transmission Outage	SDG&E	San Diego-IV	12/18/2017	68	No	INC	13	7:00	19:59
130	RT	Planned Transmission Outage	SDG&E	San Diego-IV	12/19/2017	20- 136	No	INC	14	6:00	19:59
131	RT	Planned Transmission Outage	SDG&E	San Diego-IV	12/20/2017	286	No	INC	9	10:50	18:59
132	RT	Planned Transmission Outage	SDG&E	San Diego-IV	12/21/2017	290-800	No	DEC	4	16:05	19:59
133	RT	Planned Transmission Outage	SDG&E	San Diego-IV	12/27/2017	185	No	DEC	6	9:05	14:14
134	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	12/2/2017	16	No	DEC	3	9:25	12:24
135	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	12/2/2017	16- 61	No	INC	7	6:10	12:24
136	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	12/20/2017	64	No	INC	2	6:50	8:49
137	RT	Pump Management	PG&E	Fresno	12/5/2017	-317	No	INC	2	12:00	13:29
138	RT	Software Limitation	PG&E	Bay Area	12/11/2017	175	No	DEC	3	2:30	4:44
139	RT	Software Limitation	PG&E	Bay Area	12/21/2017	0	No	INC	2	22:30	23:34
140	RT	Software Limitation	PG&E	Fresno	12/12/2017	83	No	INC	1	7:00	7:14
141	RT	Software Limitation	PG&E	Fresno	12/15/2017	83	No	DEC	1	16:00	16:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
142	RT	Software Limitation	PG&E	Humboldt	12/7/2017	28- 42	No	DEC	10	7:15	16:59
143	RT	Software Limitation	PG&E	Humboldt	12/7/2017	28- 56	No	INC	10	7:15	16:59
144	RT	Software Limitation	PG&E	Humboldt	12/8/2017	32	No	INC	1	23:35	23:59
145	RT	Software Limitation	PG&E	Humboldt	12/9/2017	32	No	INC	1	0:00	0:29
146	RT	Software Limitation	PG&E	Humboldt	12/19/2017	0	No	INC	1	0:45	1:44
147	RT	Software Limitation	PG&E	Humboldt	12/30/2017	16	No	DEC	1	21:45	21:59
148	RT	Software Limitation	PG&E	N/A	12/10/2017	212-232	No	INC	2	16:45	18:14
149	RT	Software Limitation	SCE	Big Creek-Ventura	12/21/2017	0	No	INC	1	20:15	21:14
150	RT	Software Limitation	SCE	LA Basin	12/1/2017	150	No	INC	12	12:20	23:59
151	RT	Software Limitation	SCE	LA Basin	12/2/2017	0	No	INC	2	0:00	1:19
152	RT	Software Limitation	SCE	LA Basin	12/21/2017	0	No	INC	1	20:30	21:29
153	RT	Software Limitation	SCE	N/A	12/12/2017	300	No	INC	2	11:10	12:44
154	RT	Software Limitation	SCE	N/A	12/31/2017	476	No	DEC	1	17:05	17:59
155	RT	Software Limitation	SDG&E	San Diego-IV	12/21/2017	0	No	INC	1	20:30	21:29
156	RT	Unit Testing	Intertie	N/A	12/11/2017	10	No	INC	9	8:00	16:59
157	RT	Unit Testing	Intertie	N/A	12/12/2017	18	No	INC	9	8:00	16:59
158	RT	Unit Testing	Intertie	N/A	12/15/2017	21	No	INC	9	8:50	16:59
159	RT	Unit Testing	Intertie	N/A	12/16/2017	21	Yes	INC	10	7:00	16:59
160	RT	Unit Testing	Intertie	N/A	12/17/2017	21	Yes	INC	10	7:00	16:59
161	RT	Unit Testing	Intertie	N/A	12/18/2017	21	No	INC	10	7:00	16:59
162	RT	Unit Testing	Intertie	N/A	12/19/2017	45	Yes	INC	11	6:00	16:59
163	RT	Unit Testing	Intertie	N/A	12/20/2017	45	No	INC	11	6:00	16:59
164	RT	Unit Testing	Intertie	N/A	12/21/2017	45	No	INC	11	6:00	16:59
165	RT	Unit Testing	Intertie	N/A	12/22/2017	45	No	INC	11	6:00	16:59
166	RT	Unit Testing	Intertie	N/A	12/23/2017	45	No	INC	11	6:00	16:59
167	RT	Unit Testing	Intertie	N/A	12/24/2017	45	No	INC	11	6:00	16:59
168	RT	Unit Testing	Intertie	N/A	12/25/2017	45	No	INC	11	6:00	16:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
169	RT	Unit Testing	Intertie	N/A	12/26/2017	45	No	INC	11	6:00	16:59
170	RT	Unit Testing	Intertie	N/A	12/27/2017	45	No	INC	11	6:00	16:59
171	RT	Unit Testing	Intertie	N/A	12/28/2017	45	No	INC	11	6:00	16:59
172	RT	Unit Testing	Intertie	N/A	12/29/2017	45	No	INC	11	6:00	16:59
173	RT	Unit Testing	Intertie	N/A	12/30/2017	45	No	INC	11	6:00	16:59
174	RT	Unit Testing	Intertie	N/A	12/31/2017	45	No	INC	11	6:00	16:59
175	RT	Unit Testing	PG&E	Bay Area	12/31/2017	216-500	No	INC	13	11:45	23:59
176	RT	Unit Testing	PG&E	Bay Area	1/1/2018	384	No	INC	6	0:00	5:14
177	RT	Unit Testing	PG&E	Fresno	12/25/2017	15	No	INC	6	10:50	16:29
178	RT	Unit Testing	PG&E	Fresno	12/26/2017	20	No	INC	8	8:40	16:29
179	RT	Unit Testing	PG&E	Fresno	12/27/2017	15	Yes	INC	8	9:00	16:59
180	RT	Unit Testing	PG&E	Fresno	12/28/2017	20- 40	No	INC	8	9:10	16:59
181	RT	Unit Testing	SCE	Big Creek-Ventura	12/22/2017	99	No	INC	14	10:15	23:59
182	RT	Unit Testing	SCE	Big Creek-Ventura	12/23/2017	25	No	INC	17	7:35	23:59
183	RT	Unit Testing	SCE	Big Creek-Ventura	12/24/2017	25	No	INC	24	0:00	23:59
184	RT	Unit Testing	SCE	Big Creek-Ventura	12/25/2017	25	No	INC	24	0:50	23:59
185	RT	Unit Testing	SCE	Big Creek-Ventura	12/26/2017	2- 50	No	INC	24	0:00	23:59
186	RT	Unit Testing	SCE	Big Creek-Ventura	12/27/2017	1	No	INC	24	0:45	23:59
187	RT	Unit Testing	SCE	Big Creek-Ventura	12/28/2017	10- 30	No	INC	24	0:20	23:59
188	RT	Unit Testing	SCE	Big Creek-Ventura	12/29/2017	10	Yes	INC	24	0:00	23:59
189	RT	Unit Testing	SCE	Big Creek-Ventura	12/30/2017	10- 90	No	INC	24	0:35	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
190	RT	Unit Testing	SCE	Big Creek-Ventura	12/31/2017	1- 50	No	INC	24	0:35	23:59
191	RT	Unit Testing	SCE	Big Creek-Ventura	1/1/2018	1	No	INC	24	0:00	23:14
192	RT	Unit Testing	SCE	LA Basin	12/1/2017	150	No	INC	1	11:26	11:59
193	RT	Unit Testing	SDG&E	San Diego-IV	12/5/2017	76	No	INC	1	16:20	16:39
194	RT	Unit Testing	SDG&E	San Diego-IV	12/7/2017	7	No	INC	1	9:31	9:49
195	RT	Unit Testing	SDG&E	San Diego-IV	12/9/2017	27	No	INC	1	7:34	7:54
196	RT	Unit Testing	SDG&E	San Diego-IV	12/27/2017	14	No	INC	1	9:15	9:49
197	RT	Voltage Support	PG&E	Fresno	12/2/2017	-312	No	DEC	2	14:55	15:59
198	RT	Voltage Support	PG&E	Fresno	12/2/2017	-312	No	INC	2	14:55	15:59
199	RT	Voltage Support	PG&E	Fresno	12/11/2017	-318	No	DEC	1	4:15	4:44
200	RT	Voltage Support	PG&E	Fresno	12/16/2017	-318	No	DEC	9	1:05	9:59
201	RT	Voltage Support	PG&E	Fresno	12/17/2017	-318	No	DEC	8	1:00	8:59
202	RT	Voltage Support	PG&E	Fresno	12/18/2017	-320	No	DEC	4	1:45	5:29
203	RT	Voltage Support	PG&E	Fresno	12/18/2017	320	No	INC	1	1:40	1:44
204	RT	Voltage Support	PG&E	Fresno	12/25/2017	-318- 83	No	DEC	19	5:10	23:59
205	RT	Voltage Support	PG&E	Fresno	12/25/2017	83	Yes	INC	9	15:30	23:59
206	RT	Voltage Support	PG&E	Fresno	12/26/2017	-634-- 317	No	DEC	5	0:30	5:29
207	RT	Voltage Support	PG&E	Fresno	12/26/2017	83	Yes	INC	1	0:00	0:59
208	RT	Voltage Support	PG&E	Fresno	12/31/2017	-321	No	DEC	15	1:30	15:44
209	RT	Voltage Support	PG&E	Sierra	12/4/2017	20	No	INC	14	7:00	20:59
210	RT	Voltage Support	PG&E	Sierra	12/25/2017	20	No	INC	5	11:35	15:59

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