



# **Exceptional Dispatch Report**

## **Table 1: April 2018**

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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 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 April 2018.

## 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 April 2018 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

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<sup>1</sup> 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).

<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>

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 April 2018, 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 198 exceptional dispatches in April 2018, as compared to 217 exceptional dispatches in March 2018. Exceptional dispatches issued for the following reasons accounted for approximately 62 percent of the total exceptional dispatches during the reporting period: planned transmission outages, software limitations, and operating procedure number 7110 (along with 7120, 7430, and 7720). Many of the exceptional dispatches with the reason “Other Reliability Requirement” were due to Real Time Contingency Analysis.

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

**Table 1: Exceptional Dispatches in April 2018**

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

**Chart 1: Table of Exceptional Dispatches for Period 01/April/2018 - 30/April/2018**

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	Fast Start Unit Management	PG&E	Fresno	4/6/2018	83	No	INC	1	23:00	23:59
2	RT	Fast Start Unit Management	SCE	LA Basin	4/10/2018	0	No	DEC	1	18:00	18:59
3	RT	Fast Start Unit Management	SCE	LA Basin	4/10/2018	0	No	INC	1	15:20	16:19
4	RT	Fast Start Unit Management	SCE	LA Basin	4/16/2018	0	No	INC	1	22:50	23:29
5	RT	Fast Start Unit Management	SDG&E	San Diego-IV	4/15/2018	0	No	INC	1	20:25	21:24
6	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	4/29/2018	60	No	DEC	1	17:30	17:44
7	RT	Load Forecast Uncertainty	Intertie	N/A	4/10/2018	88- 191	No	INC	4	16:00	19:59
8	RT	Load Forecast Uncertainty	PG&E	Bay Area	4/11/2018	480	No	INC	1	22:43	23:33
9	RT	Load Forecast Uncertainty	PG&E	Bay Area	4/29/2018	240	No	INC	1	5:33	6:23
10	RT	Load Forecast Uncertainty	PG&E	Fresno	4/2/2018	83	No	INC	1	22:00	22:59
11	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	4/11/2018	47	No	INC	1	22:43	23:33
12	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	4/29/2018	16- 33	No	INC	1	5:33	6:23
13	RT	Load Forecast Uncertainty	SCE	LA Basin	4/11/2018	514-555	No	INC	2	22:43	23:59
14	RT	Load Forecast Uncertainty	SCE	LA Basin	4/12/2018	46	No	INC	3	0:00	2:14
15	RT	Load Forecast Uncertainty	SCE	LA Basin	4/16/2018	190	No	DEC	5	16:30	20:59
16	RT	Load Forecast Uncertainty	SCE	LA Basin	4/16/2018	190	No	INC	5	16:30	20:59
17	RT	Load Forecast Uncertainty	SCE	LA Basin	4/17/2018	190	No	DEC	4	17:25	20:59
18	RT	Load Forecast Uncertainty	SCE	LA Basin	4/17/2018	190	No	INC	4	17:25	20:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
19	RT	Load Forecast Uncertainty	SCE	LA Basin	4/18/2018	190	No	DEC	5	16:30	20:59
20	RT	Load Forecast Uncertainty	SCE	LA Basin	4/18/2018	190	No	INC	5	16:30	20:59
21	RT	Load Forecast Uncertainty	SCE	LA Basin	4/26/2018	190	No	DEC	6	15:55	20:59
22	RT	Load Forecast Uncertainty	SCE	LA Basin	4/26/2018	190	No	INC	6	15:55	20:59
23	RT	Load Forecast Uncertainty	SCE	LA Basin	4/27/2018	190	No	DEC	6	16:45	21:59
24	RT	Load Forecast Uncertainty	SCE	LA Basin	4/27/2018	190	No	INC	6	16:45	21:59
25	RT	Load Forecast Uncertainty	SCE	LA Basin	4/29/2018	190	No	DEC	5	16:30	20:59
26	RT	Load Forecast Uncertainty	SCE	LA Basin	4/29/2018	181-190	No	INC	16	5:33	20:59
27	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	4/18/2018	63	No	INC	4	17:00	20:59
28	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	4/29/2018	175-210	No	INC	1	5:33	6:23
29	RT	Market Disruption	PG&E	Fresno	4/3/2018	83	Yes	INC	1	21:00	21:59
30	RT	Market Disruption	SCE	LA Basin	4/3/2018	0	No	DEC	1	20:45	21:29
31	RT	Market Disruption	SCE	LA Basin	4/3/2018	0	No	INC	1	20:45	21:29
32	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/2/2018	16	No	DEC	14	6:55	19:59
33	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/2/2018	15- 32	No	INC	24	0:10	23:59
34	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/3/2018	14- 56	No	INC	24	0:00	23:59
35	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/4/2018	14	No	DEC	20	0:20	19:59
36	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/4/2018	14- 42	No	INC	24	0:20	23:59
37	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/5/2018	14- 64	No	DEC	24	0:20	23:59
38	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/5/2018	14- 64	No	INC	24	0:20	23:59
39	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/6/2018	15	No	DEC	4	20:35	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	4/6/2018	14- 56	No	INC	24	0:00	23:59
41	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/7/2018	14	No	INC	2	21:00	22:59
42	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/9/2018	14- 15	No	INC	16	8:00	23:44
43	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/10/2018	14	No	INC	5	8:00	12:29
44	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/11/2018	14- 32	No	INC	17	7:00	23:59
45	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/12/2018	32	No	DEC	3	21:45	23:59
46	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/12/2018	28- 32	No	INC	24	0:00	23:59
47	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/13/2018	14- 32	No	DEC	24	0:15	23:59
48	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/13/2018	28- 32	No	INC	24	0:00	23:44
49	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/14/2018	14	No	INC	1	22:00	22:59
50	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/15/2018	14	No	INC	2	22:00	23:29
51	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/16/2018	16- 32	No	DEC	17	6:47	22:59
52	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/16/2018	16- 32	No	INC	17	6:47	22:59
53	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/17/2018	32	No	DEC	24	0:15	23:59
54	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/17/2018	32- 48	No	INC	24	0:15	23:59
55	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/18/2018	16	No	DEC	13	7:30	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	4/18/2018	16- 48	No	INC	24	0:00	23:59
57	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/19/2018	14- 28	No	DEC	14	0:00	13:59
58	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/19/2018	14- 64	No	INC	24	0:00	23:59
59	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/20/2018	16	No	DEC	2	22:30	23:59
60	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/20/2018	14- 64	No	INC	24	0:00	23:59
61	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/21/2018	16- 32	No	DEC	24	0:00	23:59
62	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/21/2018	16- 32	No	INC	24	0:00	23:59
63	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/22/2018	32	No	DEC	2	20:55	21:59
64	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/22/2018	14- 32	No	INC	24	0:00	23:59
65	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/23/2018	16	No	DEC	2	22:30	23:59
66	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/23/2018	16- 45	No	INC	23	0:00	22:44
67	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/24/2018	30- 112	No	DEC	15	7:20	21:59
68	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/24/2018	16- 30	No	INC	19	0:00	18:59
69	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/25/2018	30	No	DEC	12	7:45	18:59
70	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/25/2018	30	No	INC	16	7:45	23:29
71	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/26/2018	28- 45	No	DEC	16	8:10	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	4/26/2018	15- 45	No	INC	18	6:15	23:59
73	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/27/2018	16	No	DEC	8	12:15	19:59
74	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/27/2018	16- 45	No	INC	20	0:00	19:59
75	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/30/2018	30- 60	No	DEC	7	16:30	22:59
76	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	4/30/2018	16- 60	No	INC	17	6:45	22:59
77	RT	Operating Procedure Number and Constraint (7120)	PG&E	NCNB	4/10/2018	210	No	DEC	6	18:35	23:59
78	RT	Operating Procedure Number and Constraint (7120)	PG&E	NCNB	4/11/2018	140	No	DEC	3	0:00	2:29
79	RT	Operating Procedure Number and Constraint (7120)	PG&E	NCNB	4/11/2018	70	No	INC	3	0:00	2:29
80	RT	Operating Procedure Number and Constraint (7120)	PG&E	NCNB	4/23/2018	73	No	DEC	3	17:25	19:59
81	RT	Operating Procedure Number and Constraint (7430)	PG&E	Fresno	4/25/2018	75	No	INC	8	0:40	7:59
82	RT	Operating Procedure Number and Constraint (7720)	SCE	N/A	4/13/2018	475	No	DEC	5	18:30	22:59
83	RT	Operating Procedure Number and Constraint (7720)	SCE	N/A	4/13/2018	475	No	INC	5	18:30	22:59
84	RT	Other Reliability Requirement	PG&E	Bay Area	4/23/2018	231-606	No	DEC	6	14:45	19:59
85	RT	Other Reliability Requirement	PG&E	Bay Area	4/23/2018	375	No	INC	4	14:45	17:59
86	RT	Other Reliability Requirement	PG&E	Bay Area	4/26/2018	175	No	INC	16	6:00	21:59
87	RT	Other Reliability Requirement	PG&E	Bay Area	4/27/2018	175-400	No	INC	16	6:00	21:59
88	RT	Other Reliability Requirement	PG&E	Humboldt	4/13/2018	28	No	DEC	1	7:15	7:44
89	RT	Other Reliability Requirement	PG&E	Humboldt	4/20/2018	14	No	DEC	4	5:35	9:34

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
90	RT	Other Reliability Requirement	PG&E	Humboldt	4/20/2018	28	No	INC	4	5:35	9:34
91	RT	Other Reliability Requirement	PG&E	Humboldt	4/23/2018	32	No	DEC	11	9:40	19:59
92	RT	Other Reliability Requirement	PG&E	Humboldt	4/23/2018	32	No	INC	11	9:05	19:59
93	RT	Other Reliability Requirement	PG&E	Humboldt	4/24/2018	47	No	DEC	2	21:45	23:14
94	RT	Other Reliability Requirement	PG&E	Humboldt	4/24/2018	47- 94	No	INC	3	21:45	23:59
95	RT	Other Reliability Requirement	PG&E	Humboldt	4/25/2018	30- 61	No	INC	8	0:00	7:59
96	RT	Other Reliability Requirement	PG&E	Humboldt	4/29/2018	28	No	INC	4	19:45	23:44
97	RT	Other Reliability Requirement	PG&E	Kern	4/7/2018	96	No	INC	1	17:10	17:59
98	RT	Other Reliability Requirement	PG&E	NCNB	4/4/2018	65	No	DEC	2	22:15	23:59
99	RT	Other Reliability Requirement	PG&E	NCNB	4/4/2018	65	No	INC	2	22:05	23:59
100	RT	Other Reliability Requirement	PG&E	Sierra	4/16/2018	43	No	DEC	2	17:45	18:59
101	RT	Other Reliability Requirement	PG&E	Stockton	4/28/2018	50- 135	No	DEC	24	0:54	23:59
102	RT	Other Reliability Requirement	PG&E	Stockton	4/28/2018	50- 75	No	INC	19	4:16	22:59
103	RT	Other Reliability Requirement	PG&E	Stockton	4/29/2018	55- 135	No	DEC	24	0:00	23:59
104	RT	Other Reliability Requirement	PG&E	Stockton	4/29/2018	55- 135	No	INC	24	0:00	23:59
105	RT	Other Reliability Requirement	PG&E	Stockton	4/30/2018	60- 73	No	DEC	24	0:00	23:59
106	RT	Other Reliability Requirement	PG&E	Stockton	4/30/2018	62- 75	No	INC	8	0:00	7:59
107	RT	Other Reliability Requirement	PG&E	Stockton	5/1/2018	73	No	INC	6	0:00	5:44
108	RT	Planned Transmission Outage	Intertie	N/A	4/6/2018	400- 800	No	DEC	4	11:35	14:59
109	RT	Planned Transmission Outage	PG&E	Bay Area	4/7/2018	71	No	INC	1	4:00	4:59
110	RT	Planned Transmission Outage	PG&E	Bay Area	4/17/2018	75	No	DEC	8	10:50	17:59
111	RT	Planned Transmission Outage	PG&E	Bay Area	4/17/2018	54- 75	No	INC	12	6:00	17:59
112	RT	Planned Transmission Outage	PG&E	Bay Area	4/22/2018	64	No	DEC	5	12:40	16:59
113	RT	Planned Transmission Outage	PG&E	Bay Area	4/22/2018	64	No	INC	5	12:40	16:59
114	RT	Planned Transmission Outage	PG&E	Bay Area	4/23/2018	175	No	INC	2	13:00	14:59
115	RT	Planned Transmission Outage	PG&E	Bay Area	4/24/2018	239	No	DEC	11	9:35	19:59
116	RT	Planned Transmission Outage	PG&E	Bay Area	4/25/2018	175- 609	No	INC	10	5:00	14:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
117	RT	Planned Transmission Outage	PG&E	Bay Area	4/28/2018	54	No	DEC	13	8:00	20:59
118	RT	Planned Transmission Outage	PG&E	Bay Area	4/28/2018	54	No	INC	13	8:00	20:59
119	RT	Planned Transmission Outage	PG&E	Bay Area	4/29/2018	54	No	INC	7	14:50	20:59
120	RT	Planned Transmission Outage	PG&E	Bay Area	4/30/2018	54	No	INC	2	7:00	8:59
121	RT	Planned Transmission Outage	PG&E	Fresno	4/3/2018	28	No	INC	1	17:00	17:44
122	RT	Planned Transmission Outage	PG&E	Humboldt	4/1/2018	28- 90	No	INC	17	7:05	23:59
123	RT	Planned Transmission Outage	PG&E	Humboldt	4/2/2018	14	No	INC	2	4:45	6:29
124	RT	Planned Transmission Outage	PG&E	Humboldt	4/3/2018	14- 28	No	DEC	7	13:00	19:59
125	RT	Planned Transmission Outage	PG&E	Humboldt	4/3/2018	14- 112	No	INC	14	6:30	19:59
126	RT	Planned Transmission Outage	PG&E	Humboldt	4/7/2018	14	No	DEC	14	5:55	19:54
127	RT	Planned Transmission Outage	PG&E	Humboldt	4/7/2018	14	No	INC	14	5:55	19:54
128	RT	Planned Transmission Outage	PG&E	Humboldt	4/13/2018	33- 45	No	INC	5	7:20	11:59
129	RT	Planned Transmission Outage	PG&E	Humboldt	4/30/2018	47	No	DEC	9	7:40	16:29
130	RT	Planned Transmission Outage	PG&E	Humboldt	4/30/2018	32- 79	No	INC	10	7:15	16:29
131	RT	Planned Transmission Outage	PG&E	NCNB	4/1/2018	11- 206	No	DEC	13	7:15	19:29
132	RT	Planned Transmission Outage	PG&E	NCNB	4/1/2018	65- 195	No	INC	13	7:15	19:29
133	RT	Planned Transmission Outage	PG&E	NCNB	4/9/2018	195	No	DEC	4	20:15	23:59
134	RT	Planned Transmission Outage	PG&E	NCNB	4/9/2018	14	No	INC	4	20:15	23:59
135	RT	Planned Transmission Outage	PG&E	NCNB	4/10/2018	140- 215	No	DEC	19	0:00	18:59
136	RT	Planned Transmission Outage	PG&E	NCNB	4/10/2018	14- 159	No	INC	19	0:00	18:59
137	RT	Planned Transmission Outage	PG&E	Sierra	4/23/2018	5- 20	No	INC	5	19:30	23:59
138	RT	Planned Transmission Outage	PG&E	Sierra	4/24/2018	20	No	DEC	7	0:00	6:59
139	RT	Planned Transmission Outage	PG&E	Stockton	4/9/2018	205- 250	No	DEC	7	17:58	23:59
140	RT	Planned Transmission Outage	PG&E	Stockton	4/10/2018	145- 230	No	DEC	24	0:00	23:59
141	RT	Planned Transmission Outage	PG&E	Stockton	4/10/2018	145- 230	No	INC	24	0:25	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
142	RT	Planned Transmission Outage	PG&E	Stockton	4/11/2018	191-220	No	DEC	18	5:40	22:59
143	RT	Planned Transmission Outage	PG&E	Stockton	4/11/2018	191-237	No	INC	14	5:00	18:59
144	RT	Planned Transmission Outage	PG&E	Stockton	4/24/2018	220	No	DEC	7	9:45	15:59
145	RT	Planned Transmission Outage	SCE	LA Basin	4/7/2018	20	No	INC	7	10:45	16:59
146	RT	Planned Transmission Outage	SCE	LA Basin	4/26/2018	10	No	INC	19	5:00	23:59
147	RT	Planned Transmission Outage	SCE	N/A	4/24/2018	325	No	DEC	3	6:15	8:29
148	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/13/2018	63	No	INC	7	12:45	18:59
149	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/14/2018	63	No	INC	10	11:20	20:29
150	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/15/2018	67- 111	No	INC	7	11:10	17:14
151	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/17/2018	20	No	INC	1	4:00	4:59
152	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/18/2018	20	No	INC	17	5:00	21:59
153	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/19/2018	40- 79	No	INC	2	12:45	14:44
154	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/23/2018	20- 136	No	INC	14	7:00	20:59
155	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/24/2018	20- 136	No	INC	15	6:00	20:59
156	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/25/2018	225-301	Yes	INC	18	0:40	17:59
157	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/26/2018	225	No	INC	11	1:00	11:59
158	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/27/2018	0	No	DEC	2	6:00	7:59
159	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/27/2018	20- 63	No	INC	12	8:00	19:59
160	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/29/2018	20	Yes	INC	12	6:00	17:59
161	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/30/2018	63- 450	No	DEC	14	6:00	19:59
162	RT	Planned Transmission Outage	SDG&E	San Diego-IV	4/30/2018	63- 126	No	INC	14	6:00	19:59
163	RT	Software Limitation	PG&E	Bay Area	4/12/2018	0	No	INC	2	0:00	1:04
164	RT	Software Limitation	PG&E	Bay Area	4/29/2018	0	No	INC	2	7:00	8:04
165	RT	Software Limitation	PG&E	Fresno	4/8/2018	-330	No	DEC	1	23:30	23:59
166	RT	Software Limitation	PG&E	Fresno	4/9/2018	-330	No	DEC	2	0:00	1:29
167	RT	Software Limitation	PG&E	Fresno	4/11/2018	83	No	INC	1	5:00	5:14

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
168	RT	Software Limitation	PG&E	Humboldt	4/30/2018	32	No	INC	2	17:00	18:59
169	RT	Software Limitation	PG&E	N/A	4/14/2018	181	No	INC	4	9:30	12:59
170	RT	Software Limitation	SCE	LA Basin	4/4/2018	340-500	No	INC	1	6:50	7:29
171	RT	Software Limitation	SCE	LA Basin	4/10/2018	48	Yes	INC	2	16:00	17:59
172	RT	Software Limitation	SCE	LA Basin	4/12/2018	0	No	DEC	1	20:00	20:29
173	RT	Software Limitation	SCE	LA Basin	4/20/2018	0	No	DEC	3	21:15	23:59
174	RT	Software Limitation	SDG&E	San Diego-IV	4/6/2018	0	No	INC	2	5:45	6:59
175	RT	Software Limitation	SDG&E	San Diego-IV	4/23/2018	0	No	INC	2	22:15	23:59
176	RT	Software Limitation	SDG&E	San Diego-IV	4/24/2018	0	No	INC	2	0:00	1:14
177	RT	Software Limitation	SDG&E	San Diego-IV	4/29/2018	0	No	INC	1	7:20	8:19
178	RT	Unit Testing	PG&E	Fresno	4/13/2018	50	No	INC	1	19:20	19:54
179	RT	Unit Testing	PG&E	N/A	4/11/2018	380	No	INC	3	12:25	14:59
180	RT	Unit Testing	PG&E	Stockton	4/5/2018	120-290	No	INC	8	12:30	19:59
181	RT	Unit Testing	SCE	LA Basin	4/5/2018	73	No	INC	1	3:53	4:29
182	RT	Unit Testing	SCE	LA Basin	4/9/2018	263	No	INC	1	8:00	8:59
183	RT	Unit Testing	SCE	LA Basin	4/12/2018	21- 144	Yes	INC	3	19:13	21:49
184	RT	Unit Testing	SCE	LA Basin	4/30/2018	480	No	INC	2	11:40	12:59
185	RT	Unit Testing	SCE	N/A	4/10/2018	300	No	INC	6	9:55	14:59
186	RT	Unit Testing	SDG&E	San Diego-IV	4/14/2018	44	No	INC	2	18:49	19:49
187	RT	Unplanned Outage	PG&E	Bay Area	4/4/2018	64- 351	No	INC	16	7:00	22:59
188	RT	Unplanned Outage	SDG&E	San Diego-IV	4/3/2018	48	No	INC	1	16:25	17:24
189	RT	Voltage Support	PG&E	Fresno	4/2/2018	83	Yes	INC	4	1:00	4:59
190	RT	Voltage Support	PG&E	Fresno	4/3/2018	83	No	INC	2	1:00	2:59
191	RT	Voltage Support	PG&E	Fresno	4/4/2018	83	Yes	INC	5	1:00	5:59
192	RT	Voltage Support	PG&E	Fresno	4/12/2018	-315	No	DEC	1	17:15	17:29
193	RT	Voltage Support	PG&E	Humboldt	4/1/2018	16	No	INC	1	5:25	5:49
194	RT	Voltage Support	PG&E	N/A	4/14/2018	110	No	INC	6	7:05	12:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
195	RT	Voltage Support	PG&E	N/A	4/15/2018	110	No	INC	7	7:15	13:59
196	RT	Voltage Support	PG&E	N/A	4/23/2018	0	No	INC	17	7:00	23:59
197	RT	Voltage Support	PG&E	N/A	4/24/2018	0	Yes	INC	24	0:00	23:59
198	RT	Voltage Support	PG&E	N/A	4/25/2018	0	Yes	INC	16	0:00	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