



Exceptional Dispatch Report

Table 1: October 2018

TABLE OF CONTENTS

Introduction	3
The Nature of Exceptional Dispatch.....	3
Appendix A: Explanation by Example	16
Example 1: Exceptional Dispatch Instructions Prior to DAM	16
Example 2: Incremental Exceptional Dispatch Instructions in RTM.....	17
Example 3: Decremental Exceptional Dispatch Instructions in RTM	19

LIST OF TABLES AND FIGURES

Table 1: Exceptional Dispatches in October 2018	5
Table 2: Instructions Prior to Day-Ahead Market	16
Table 3: FERC Summary of Instructions Prior to DAM	17
Table 4: Incremental Exceptional Dispatch Instructions in RTM	17
Table 5: FERC Summary of ED Instructions in RTM	18
Table 6: Decremental Exceptional Dispatch Instructions in RTM	19
Table 7: FERC Summary of Decremental ED Instructions in RTM	19

Introduction

This report is filed pursuant to FERC's September 2, 2009, and May 4, 2010, orders in Docket No. 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 October 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.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 October 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

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 October 2018, 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 233 exceptional dispatches in October 2018, as compared to 180 exceptional dispatches in September 2018. Exceptional dispatches issued for the following reasons accounted for approximately 61 percent of the total exceptional dispatches during the reporting period: planned transmission outages, software limitations, load forecast uncertainty, and operating procedure number 7110 (along with 7430 and 7720). 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 October 2018

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 17, 2018**

Chart 1: Table of Exceptional Dispatches for Period 01/October/2018 - 31/October/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	PGAE	Fresno	10/28/2018	20	No	INC	11	9:40	20:00
2	RT	Fast Start Unit Management	SCE	LA Basin	10/30/2018	0	No	INC	1	22:55	23:55
3	RT	Fast Start Unit Management	SDGE	San Diego-IV	10/3/2018	0	No	INC	1	1:30	2:00
4	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	10/17/2018	200	No	DEC	5	15:30	20:30
5	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	10/17/2018	250	No	INC	2	14:00	15:30
6	RT	Load Forecast Uncertainty	Intertie	NA	10/1/2018	125 - 331	No	INC	1	18:00	19:00
7	RT	Load Forecast Uncertainty	Intertie	NA	10/16/2018	100 - 125	No	INC	1	18:00	19:00
8	RT	Load Forecast Uncertainty	PGAE	Bay Area	10/11/2018	24	No	DEC	4	17:40	21:00
9	RT	Load Forecast Uncertainty	PGAE	Bay Area	10/12/2018	175	No	INC	6	16:00	22:00
10	RT	Load Forecast Uncertainty	PGAE	Bay Area	10/15/2018	175	No	INC	16	8:00	0:00
11	RT	Load Forecast Uncertainty	PGAE	Bay Area	10/22/2018	175	No	INC	7	14:00	21:00
12	RT	Load Forecast Uncertainty	PGAE	Bay Area	10/31/2018	24	No	INC	7	10:50	17:00
13	RT	Load Forecast Uncertainty	PGAE	Fresno	10/5/2018	83	No	INC	1	16:35	17:00
14	RT	Load Forecast Uncertainty	PGAE	NA	10/2/2018	110	No	DEC	1	16:00	17:00
15	RT	Load Forecast Uncertainty	PGAE	NA	10/2/2018	110 - 205	No	INC	4	12:15	16:00
16	RT	Load Forecast Uncertainty	PGAE	NA	10/3/2018	105	No	DEC	5	16:00	21:00
17	RT	Load Forecast Uncertainty	PGAE	NA	10/3/2018	105	No	INC	2	14:25	16:00
18	RT	Load Forecast Uncertainty	PGAE	NA	10/4/2018	301	No	DEC	1	18:00	19:00

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	10/1/2018	65 - 190	No	DEC	6	14:00	20:00
20	RT	Load Forecast Uncertainty	SCE	LA Basin	10/1/2018	65 - 194	No	INC	11	9:35	20:00
21	RT	Load Forecast Uncertainty	SCE	LA Basin	10/2/2018	20 - 194	No	INC	24	0:00	0:00
22	RT	Load Forecast Uncertainty	SCE	LA Basin	10/3/2018	65 - 194	No	INC	22	0:00	22:00
23	RT	Load Forecast Uncertainty	SCE	LA Basin	10/16/2018	20	No	INC	8	16:00	0:00
24	RT	Load Forecast Uncertainty	SCE	LA Basin	10/17/2018	10 - 20	Yes	INC	24	0:00	0:00
25	RT	Load Forecast Uncertainty	SCE	LA Basin	10/20/2018	65	No	INC	3	17:20	20:00
26	RT	Load Forecast Uncertainty	SCE	LA Basin	10/31/2018	20	No	INC	7	17:15	0:00
27	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	10/1/2018	68	No	INC	3	17:00	20:00
28	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	10/2/2018	20	No	INC	22	2:00	0:00
29	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	10/9/2018	20	No	INC	10	14:00	0:00
30	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	10/10/2018	20	No	INC	3	0:00	3:00
31	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	10/15/2018	20 - 290	No	INC	15	9:00	0:00
32	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	10/17/2018	20 - 290	No	INC	9	15:00	0:00
33	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	10/18/2018	20 - 156	No	INC	14	10:00	0:00
34	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	10/22/2018	20	No	INC	10	14:00	0:00
35	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	10/29/2018	20 - 63	No	INC	10	13:00	23:00
36	RT	Load Pull	SCE	LA Basin	10/16/2018	20	No	DEC	2	18:00	20:00
37	RT	Load Pull	SCE	LA Basin	10/16/2018	20 - 194	No	INC	6	16:45	22:00
38	RT	Load Pull	SCE	LA Basin	10/17/2018	65 - 194	No	INC	8	14:00	22:00
39	RT	Load Pull	SDGE	San Diego-IV	10/17/2018	63	No	INC	6	16:00	22:00
40	RT	Load Pull	SDGE	San Diego-IV	10/22/2018	63	No	INC	4	16:45	20:00
41	RT	Market Disruption	PGAE	Bay Area	10/4/2018	291	No	INC	1	14:20	14:40
42	RT	Market Disruption	PGAE	Fresno	10/4/2018	10	No	INC	1	14:25	15:00
43	RT	Market Disruption	PGAE	Fresno	10/24/2018	83	No	INC	1	16:00	17:00
44	RT	Market Disruption	PGAE	NA	10/24/2018	380	No	DEC	1	17:00	17:30
45	RT	Market Disruption	SCE	NA	10/4/2018	475	No	DEC	1	14:25	14:40
46	RT	Market Disruption	SDGE	San Diego-IV	10/4/2018	310	No	DEC	1	14:20	15:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
47	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	10/4/2018	75	No	INC	7	11:25	18:00
48	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	10/10/2018	75 - 80	No	INC	5	11:15	15:45
49	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	10/11/2018	85	No	INC	1	11:15	12:00
50	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	10/28/2018	80	No	INC	13	7:35	20:00
51	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/1/2018	16 - 32	No	INC	18	6:05	0:00
52	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/2/2018	15	No	DEC	3	6:10	8:15
53	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/2/2018	15 - 30	No	INC	24	0:00	0:00
54	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/3/2018	15	No	DEC	22	2:00	0:00
55	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/3/2018	30 - 32	No	INC	24	0:00	0:00
56	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/4/2018	15	No	DEC	14	0:00	13:15
57	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/4/2018	15 - 32	No	INC	24	0:00	0:00
58	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/5/2018	14	No	DEC	1	23:00	0:00
59	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/5/2018	14	No	INC	22	2:45	0:00
60	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/6/2018	14	No	DEC	24	0:00	0:00
61	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/6/2018	14 - 30	No	INC	24	0:00	0:00
62	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/7/2018	14	No	DEC	7	0:00	6:25

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
63	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/7/2018	14 - 42	No	INC	24	0:00	0:00
64	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/8/2018	14 - 32	No	INC	24	0:00	0:00
65	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/9/2018	14 - 28	No	INC	24	0:00	0:00
66	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/10/2018	14 - 42	No	INC	24	0:00	0:00
67	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/11/2018	14 - 42	No	INC	24	0:00	0:00
68	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/12/2018	14 - 42	No	INC	24	0:00	0:00
69	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/13/2018	16	No	DEC	1	23:30	0:00
70	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/13/2018	16 - 42	No	INC	24	0:00	0:00
71	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/14/2018	16	No	DEC	18	0:00	17:30
72	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/14/2018	16 - 32	No	INC	24	0:00	0:00
73	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/15/2018	14	No	DEC	7	17:00	0:00
74	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/15/2018	14 - 42	No	INC	24	0:00	0:00
75	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/16/2018	15 - 30	No	DEC	7	17:00	0:00
76	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/16/2018	0 - 42	No	INC	24	0:00	0:00
77	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/17/2018	16 - 30	No	DEC	20	0:00	20:00
78	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/17/2018	28 - 30	No	INC	17	0:00	17:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
79	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/18/2018	32	No	INC	2	22:00	0:00
80	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/19/2018	32	No	DEC	5	17:00	22:00
81	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/19/2018	16 - 32	No	INC	24	0:00	0:00
82	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/20/2018	32	No	DEC	3	15:00	18:00
83	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/20/2018	15 - 32	No	INC	24	0:00	0:00
84	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/21/2018	15 - 42	No	INC	24	0:00	0:00
85	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/22/2018	16 - 32	No	DEC	7	17:00	0:00
86	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/22/2018	15 - 32	No	INC	24	0:00	0:00
87	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/23/2018	16 - 32	No	INC	17	0:00	17:00
88	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/25/2018	14 - 42	No	DEC	1	20:35	21:00
89	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/25/2018	14 - 42	No	INC	18	6:20	0:00
90	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/26/2018	15 - 32	No	DEC	3	17:00	20:00
91	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/26/2018	14 - 42	No	INC	24	0:00	0:00
92	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/27/2018	16	No	DEC	20	0:45	20:00
93	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/27/2018	16 - 32	No	INC	24	0:00	0:00
94	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/28/2018	15	No	DEC	2	9:35	10:45

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
95	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/28/2018	16 - 42	No	INC	24	0:00	0:00
96	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/29/2018	16	No	INC	2	0:00	2:00
97	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/30/2018	32	No	INC	2	22:00	0:00
98	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	10/31/2018	14 - 28	No	INC	24	0:00	0:00
99	RT	Operating Procedure Number and Constraint (7720)	SCE	NA	10/28/2018	325 - 345	No	DEC	3	16:45	19:15
100	RT	Operating Procedure Number and Constraint (7720)	SCE	NA	10/31/2018	475	No	DEC	2	22:05	0:00
101	RT	Other Reliability Requirement	PGAE	Fresno	10/4/2018	10	No	INC	1	15:15	15:45
102	RT	Other Reliability Requirement	PGAE	Fresno	10/15/2018	12 - 15	No	DEC	2	11:10	13:00
103	RT	Other Reliability Requirement	PGAE	Stockton	10/16/2018	200	No	DEC	8	13:45	21:00
104	RT	Other Reliability Requirement	PGAE	Stockton	10/16/2018	240 - 250	No	INC	4	10:00	13:45
105	RT	Other Reliability Requirement	PGAE	Stockton	10/19/2018	200	No	DEC	1	6:50	7:10
106	RT	Planned Transmission Outage	PGAE	Bay Area	10/2/2018	450	No	INC	5	15:10	20:00
107	RT	Planned Transmission Outage	PGAE	Bay Area	10/18/2018	200 - 400	No	DEC	7	8:30	15:30
108	RT	Planned Transmission Outage	PGAE	Bay Area	10/18/2018	0	No	INC	4	9:15	13:15
109	RT	Planned Transmission Outage	PGAE	Bay Area	10/19/2018	140 - 142	No	DEC	7	14:00	20:15
110	RT	Planned Transmission Outage	PGAE	Bay Area	10/19/2018	0 - 300	No	INC	14	10:00	23:45
111	RT	Planned Transmission Outage	PGAE	Bay Area	10/20/2018	23	No	INC	8	9:35	17:30
112	RT	Planned Transmission Outage	PGAE	Bay Area	10/26/2018	0 - 54	No	INC	18	6:00	0:00
113	RT	Planned Transmission Outage	PGAE	Bay Area	10/27/2018	0	No	INC	1	0:00	0:05
114	RT	Planned Transmission Outage	PGAE	Fresno	10/1/2018	39	No	INC	7	17:05	0:00
115	RT	Planned Transmission Outage	PGAE	Fresno	10/2/2018	39	No	INC	24	0:00	0:00
116	RT	Planned Transmission Outage	PGAE	Fresno	10/3/2018	39	No	INC	24	0:00	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
117	RT	Planned Transmission Outage	PGAE	Fresno	10/4/2018	39	No	INC	1	0:00	0:15
118	RT	Planned Transmission Outage	PGAE	Fresno	10/5/2018	20	No	INC	8	10:55	18:00
119	RT	Planned Transmission Outage	PGAE	Fresno	10/15/2018	12	No	DEC	3	13:00	15:15
120	RT	Planned Transmission Outage	PGAE	Fresno	10/22/2018	83	No	DEC	3	20:55	23:00
121	RT	Planned Transmission Outage	PGAE	Fresno	10/22/2018	83	No	INC	2	22:00	0:00
122	RT	Planned Transmission Outage	PGAE	Fresno	10/23/2018	83	No	DEC	4	17:00	21:00
123	RT	Planned Transmission Outage	PGAE	Fresno	10/23/2018	48 - 190	No	INC	24	0:00	0:00
124	RT	Planned Transmission Outage	PGAE	Fresno	10/24/2018	83	No	DEC	11	7:40	18:00
125	RT	Planned Transmission Outage	PGAE	Fresno	10/24/2018	83 - 190	No	INC	17	0:00	17:00
126	RT	Planned Transmission Outage	PGAE	Humboldt	10/5/2018	14 - 28	No	INC	23	0:00	23:00
127	RT	Planned Transmission Outage	PGAE	Humboldt	10/6/2018	14	No	INC	17	6:05	22:45
128	RT	Planned Transmission Outage	PGAE	Humboldt	10/17/2018	32	No	INC	2	22:00	0:00
129	RT	Planned Transmission Outage	PGAE	Humboldt	10/18/2018	28 - 32	No	DEC	4	16:00	20:00
130	RT	Planned Transmission Outage	PGAE	Humboldt	10/18/2018	16 - 32	No	INC	17	0:00	17:00
131	RT	Planned Transmission Outage	PGAE	Humboldt	10/22/2018	32	No	DEC	3	17:00	20:00
132	RT	Planned Transmission Outage	PGAE	Humboldt	10/22/2018	32	No	INC	10	7:30	17:00
133	RT	Planned Transmission Outage	PGAE	Humboldt	10/23/2018	15 - 30	No	DEC	1	21:10	22:00
134	RT	Planned Transmission Outage	PGAE	Humboldt	10/23/2018	15 - 30	No	INC	2	22:00	0:00
135	RT	Planned Transmission Outage	PGAE	Humboldt	10/24/2018	15	No	DEC	4	2:30	6:00
136	RT	Planned Transmission Outage	PGAE	Humboldt	10/24/2018	15 - 42	No	INC	24	0:10	0:00
137	RT	Planned Transmission Outage	PGAE	Humboldt	10/25/2018	15	No	INC	17	0:00	17:00
138	RT	Planned Transmission Outage	PGAE	Humboldt	10/28/2018	32	No	INC	2	22:30	0:00
139	RT	Planned Transmission Outage	PGAE	Humboldt	10/29/2018	14 - 42	No	INC	24	0:00	0:00
140	RT	Planned Transmission Outage	PGAE	Humboldt	10/30/2018	32	No	DEC	3	16:00	19:00
141	RT	Planned Transmission Outage	PGAE	Humboldt	10/30/2018	16 - 32	No	INC	19	0:00	19:00
142	RT	Planned Transmission Outage	PGAE	Humboldt	10/31/2018	14	No	DEC	1	16:00	16:30
143	RT	Planned Transmission Outage	PGAE	Humboldt	10/31/2018	14 - 28	No	INC	18	6:15	0:00
144	RT	Planned Transmission Outage	PGAE	NCNB	10/30/2018	50 - 65	No	DEC	5	19:45	0:00
145	RT	Planned Transmission Outage	PGAE	Sierra	10/15/2018	10	No	INC	10	11:55	21:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
146	RT	Planned Transmission Outage	PGAE	Stockton	10/10/2018	35	No	DEC	7	5:00	12:00
147	RT	Planned Transmission Outage	PGAE	Stockton	10/19/2018	145 - 200	No	DEC	12	7:10	18:30
148	RT	Planned Transmission Outage	PGAE	Stockton	10/20/2018	192	No	DEC	10	9:45	19:00
149	RT	Planned Transmission Outage	PGAE	Stockton	10/21/2018	145	No	DEC	24	0:15	0:00
150	RT	Planned Transmission Outage	PGAE	Stockton	10/22/2018	145	No	DEC	19	5:00	0:00
151	RT	Planned Transmission Outage	PGAE	Stockton	10/22/2018	145	No	INC	5	0:00	5:00
152	RT	Planned Transmission Outage	PGAE	Stockton	10/23/2018	192	No	DEC	10	5:05	15:00
153	RT	Planned Transmission Outage	PGAE	NA	10/18/2018	0 - 50	No	INC	5	10:00	15:00
154	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/18/2018	54	No	INC	5	7:55	12:00
155	RT	Planned Transmission Outage	SCE	LA Basin	10/8/2018	263	No	INC	10	7:55	17:15
156	RT	Planned Transmission Outage	SCE	LA Basin	10/11/2018	100	No	INC	2	13:20	14:30
157	RT	Planned Transmission Outage	SCE	LA Basin	10/25/2018	45.58	No	DEC	12	6:00	18:00
158	RT	Planned Transmission Outage	SCE	LA Basin	10/25/2018	45.38 - 45.58	No	INC	8	8:00	16:00
159	RT	Planned Transmission Outage	SCE	LA Basin	10/26/2018	46	No	DEC	14	6:40	20:00
160	RT	Planned Transmission Outage	SCE	LA Basin	10/26/2018	46	No	INC	10	7:55	17:00
161	RT	Planned Transmission Outage	SCE	LA Basin	10/29/2018	0	No	INC	4	17:00	20:15
162	RT	Planned Transmission Outage	SCE	NA	10/18/2018	615 - 700	No	DEC	2	16:50	18:00
163	RT	Planned Transmission Outage	SCE	NA	10/20/2018	700	No	DEC	5	16:15	21:00
164	RT	Planned Transmission Outage	SCE	NA	10/31/2018	68	No	DEC	3	14:10	16:30
165	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/11/2018	500	No	DEC	2	6:35	8:00
166	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/17/2018	0 - 281	No	DEC	7	14:05	21:00
167	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/17/2018	63 - 290	No	INC	9	8:30	17:00
168	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/26/2018	20 - 63	No	INC	19	5:00	0:00
169	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/27/2018	400 - 520	No	DEC	7	13:00	19:45
170	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/27/2018	520	No	INC	2	11:05	13:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
171	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/30/2018	38	No	INC	5	11:55	16:00
172	RT	Software Limitation	PGAE	Bay Area	10/31/2018	0	No	INC	1	23:35	0:00
173	RT	Software Limitation	PGAE	Fresno	10/13/2018	83 - 407	No	INC	2	17:25	19:00
174	RT	Software Limitation	PGAE	Humboldt	10/30/2018	32	No	INC	2	0:45	2:45
175	RT	Software Limitation	SCE	LA Basin	10/19/2018	0	No	DEC	2	20:45	22:00
176	RT	Software Limitation	SCE	LA Basin	10/19/2018	0	No	INC	2	22:00	0:00
177	RT	Software Limitation	SCE	NA	10/25/2018	0	No	DEC	1	8:00	9:00
178	RT	Software Limitation	SCE	NA	10/25/2018	0	No	INC	6	9:00	15:00
179	RT	Software Limitation	SDGE	San Diego-IV	10/22/2018	20	No	INC	1	23:50	0:00
180	RT	Unit Testing	PGAE	Fresno	10/25/2018	12	No	INC	1	18:40	19:15
181	RT	Unit Testing	PGAE	NA	10/25/2018	32	No	INC	1	18:45	19:15
182	RT	Unit Testing	SCE	LA Basin	10/26/2018	47.71	No	INC	1	18:55	19:25
183	RT	Unit Testing	SDGE	San Diego-IV	10/26/2018	45	No	INC	1	21:00	21:35
184	RT	Unit Testing	SDGE	NA	10/27/2018	100	No	INC	2	9:00	10:30
185	RT	Unplanned Outage	PGAE	Bay Area	10/2/2018	175	No	INC	11	11:00	22:00
186	RT	Unplanned Outage	PGAE	Fresno	10/2/2018	23 - 83	No	DEC	5	16:00	21:00
187	RT	Unplanned Outage	PGAE	Fresno	10/2/2018	23 - 83	No	INC	13	9:30	22:00
188	RT	Unplanned Outage	PGAE	Humboldt	10/31/2018	28	No	INC	4	12:05	16:00
189	RT	Unplanned Outage	PGAE	NA	10/2/2018	47	No	DEC	5	17:00	22:00
190	RT	Unplanned Outage	PGAE	NA	10/2/2018	47	No	INC	5	11:45	15:50
191	RT	Unplanned Outage	SDGE	San Diego-IV	10/2/2018	68 - 290	No	INC	15	7:45	22:00
192	RT	Voltage Support	PGAE	Fresno	10/6/2018	-322	No	DEC	7	2:00	9:00
193	RT	Voltage Support	PGAE	Fresno	10/7/2018	-322	No	DEC	8	0:30	8:00
194	RT	Voltage Support	PGAE	Fresno	10/7/2018	-322	No	INC	2	8:00	10:00
195	RT	Voltage Support	PGAE	Fresno	10/8/2018	-320	No	DEC	3	4:25	7:00
196	RT	Voltage Support	PGAE	Fresno	10/9/2018	-320	No	DEC	5	1:35	6:00
197	RT	Voltage Support	PGAE	Fresno	10/10/2018	-322	No	DEC	4	2:30	6:00
198	RT	Voltage Support	PGAE	Fresno	10/11/2018	-310	No	DEC	5	1:00	6:00
199	RT	Voltage Support	PGAE	Fresno	10/12/2018	-323	No	DEC	4	2:40	6:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
200	RT	Voltage Support	PGAE	Fresno	10/13/2018	-322	No	DEC	8	1:20	9:00
201	RT	Voltage Support	PGAE	Fresno	10/13/2018	322	No	INC	1	1:00	1:45
202	RT	Voltage Support	PGAE	Fresno	10/14/2018	-8	No	DEC	22	2:50	0:00
203	RT	Voltage Support	PGAE	Fresno	10/15/2018	-10.5	No	DEC	7	0:00	6:30
204	RT	Voltage Support	PGAE	Fresno	10/16/2018	-308	No	DEC	6	0:00	6:00
205	RT	Voltage Support	PGAE	Fresno	10/17/2018	-5	No	DEC	14	2:10	16:00
206	RT	Voltage Support	PGAE	Fresno	10/19/2018	-315	No	DEC	5	0:55	5:00
207	RT	Voltage Support	PGAE	Fresno	10/21/2018	-315	No	DEC	15	1:50	16:00
208	RT	Voltage Support	PGAE	Fresno	10/21/2018	-630	No	INC	12	1:45	13:00
209	RT	Voltage Support	PGAE	Fresno	10/22/2018	-319	No	DEC	5	0:15	5:00
210	RT	Voltage Support	PGAE	Fresno	10/22/2018	83	Yes	INC	1	5:15	6:00
211	RT	Voltage Support	PGAE	Fresno	10/27/2018	-326	No	DEC	4	2:45	6:00
212	RT	Voltage Support	PGAE	Fresno	10/28/2018	-17	No	DEC	11	3:30	14:00
213	RT	Voltage Support	PGAE	Fresno	10/28/2018	83	No	INC	4	20:00	0:00
214	RT	Voltage Support	PGAE	Fresno	10/29/2018	83	No	INC	7	0:00	7:00
215	RT	Voltage Support	PGAE	Sierra	10/4/2018	2	No	INC	2	3:50	5:00
216	RT	Voltage Support	PGAE	NA	10/11/2018	175	No	INC	1	2:00	3:00
217	RT	Voltage Support	SCE	NA	10/16/2018	200	No	INC	8	8:00	16:00
218	RT	Voltage Support	SCE	NA	10/17/2018	200	No	INC	8	8:00	16:00
219	RT	Voltage Support	SCE	NA	10/18/2018	200	No	INC	8	8:10	16:00
220	RT	Voltage Support	SCE	NA	10/19/2018	200	No	DEC	24	0:00	0:00
221	RT	Voltage Support	SCE	NA	10/20/2018	200	No	DEC	24	0:00	0:00
222	RT	Voltage Support	SCE	NA	10/21/2018	200	No	DEC	24	0:00	0:00
223	RT	Voltage Support	SCE	NA	10/21/2018	200	No	INC	6	8:00	14:00
224	RT	Voltage Support	SCE	NA	10/22/2018	200	No	DEC	24	0:00	0:00
225	RT	Voltage Support	SCE	NA	10/23/2018	200	No	DEC	24	0:00	0:00
226	RT	Voltage Support	SCE	NA	10/25/2018	200	No	DEC	24	0:00	0:00
227	RT	Voltage Support	SCE	NA	10/26/2018	200	No	DEC	24	0:00	0:00
228	RT	Voltage Support	SCE	NA	10/27/2018	200	No	DEC	24	0:00	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
229	RT	Voltage Support	SCE	NA	10/28/2018	125 - 200	No	DEC	24	0:00	0:00
230	RT	Voltage Support	SCE	NA	10/29/2018	200	No	DEC	24	0:00	0:00
231	RT	Voltage Support	SCE	NA	10/30/2018	200	No	DEC	24	0:00	0:00
232	RT	Voltage Support	SCE	NA	10/31/2018	200	No	DEC	24	0:00	0:00
233	RT	Voltage Support	SCE	NA	10/31/2018	200	No	INC	5	9:00	14:00

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