



Exceptional Dispatch Report

Table 1: December 2020

TABLE OF CONTENTS

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

LIST OF TABLES AND FIGURES

Table 1: Exceptional Dispatches in December 2020.....	6
Table 2: Instructions Prior to Day-Ahead Market	15
Table 3: FERC Summary of Instructions Prior to DAM	16
Table 4: Incremental Exceptional Dispatch Instructions in RTM	16
Table 5: FERC Summary of ED Instructions in RTM	17
Table 6: Decremental Exceptional Dispatch Instructions in RTM	18
Table 7: FERC Summary of Decremental ED Instructions in RTM.....	18

Introduction

This report is filed pursuant to FERC's September 2, 2009, and 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 originally issued on the 30th of each month. Both Table 1 and Table 2 reports will be issued on the 15th of each month due to the availability of necessary data. This report provides data on the frequency and reasons for Exceptional Dispatches issued in December 2020.

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 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 2020 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

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>

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 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. Interconnection Reliability Operating Limits (IROL) are system operating limits that are established to prevent instability, uncontrolled separation or cascading as described in operating procedure 3100. System Operating Limit (SOL) are the facility ratings, system voltage limits, transient stability limits, and voltage stability limits that are used in the operating horizon – any of which can be the most restrictive limit at any point in time, pre – or post – contingency. Control Point (CP) are imposed to protect the area transmission network against N – 1 contingencies. There were a few other reasons used to explain exceptional dispatch instructions in December 2020, 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 221 exceptional dispatches in December 2020, as compared to 230 exceptional dispatches in November 2020. Exceptional dispatches issued for the following reasons accounted for approximately 63

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.

percent of the total exceptional dispatches during the reporting period: transmission outages and reliability assessment. Exceptional dispatches with the reason “Reliability Assessment” were due to Real Time Contingency Analysis, Voltage Stability Analysis, and operating procedure number 7110 (along with 7720). Reliability Assessment is the reason as explained in the operator procedure 2330C⁴ that encompasses Control Point (CP), Interconnection Reliability Operating Limit (IROL), System Operating Limit (SOL) and congestion related EDs. This reason is used to mitigate reliability issues identified through the real – time assessment tools such as Real Time Contingency Analysis (RTCA), Voltage Stability Analysis (VSA), Dynamic Stability Analysis (DSA) and/or Operating Procedure (OP) or offline study.

1) ⁴ The operator procedure 2330C - <http://www.caiso.com/Documents/2330C.pdf>

Table 1: Exceptional Dispatches in December 2020

**California Independent System Operator Corporation
Exceptional Dispatch Report
February 16, 2021**

Chart 1: Table of Exceptional Dispatches for Period 01/December/2020 - 31/December/2020

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	LA Basin	12/23/2020	132.76 - 194	No	INC	13	8:00	21:00
2	RT	Fast Start Unit Management	PGAE	Fresno	12/20/2020	0	No	DEC	1	10:05	10:35
3	RT	Fast Start Unit Management	SCE	LA Basin	12/20/2020	0	No	INC	1	10:20	11:20
4	RT	Incomplete or Inaccurate Transmission	PGAE	NCNB	12/2/2020	85	No	INC	5	17:40	21:45
5	RT	Load Forecast Uncertainty	SCE	LA Basin	12/13/2020	130 - 251	No	DEC	7	13:05	20:00
6	RT	Load Forecast Uncertainty	SCE	LA Basin	12/13/2020	251	No	INC	2	13:50	15:00
7	RT	Load Forecast Uncertainty	SCE	LA Basin	12/28/2020	98	No	INC	2	12:00	13:15
8	RT	Market Disruption	Intertie	NA	12/9/2020	1	No	INC	1	4:00	5:00
9	RT	Other Reliability Requirement	PGAE	Bay Area	12/13/2020	120 - 200	No	INC	3	12:55	15:00
10	RT	Other Reliability Requirement	PGAE	Fresno	12/13/2020	97 - 113	No	INC	2	13:15	15:00
11	RT	Other Reliability Requirement	PGAE	NA	12/13/2020	0 - 350	No	DEC	4	7:35	11:15
12	RT	Other Reliability Requirement	SCE	Big Creek-Ventura	12/21/2020	27.49	No	INC	3	19:00	22:00
13	RT	Other Reliability Requirement	SCE	LA Basin	12/3/2020	20	No	INC	4	12:50	16:00
14	RT	Other Reliability Requirement	SCE	LA Basin	12/13/2020	0 - 335	No	INC	15	7:15	22:00
15	RT	Other Reliability Requirement	SCE	NA	12/31/2020	475	No	INC	3	18:00	20:30
16	RT	Other Reliability Requirement	SDGE	San Diego-IV	12/3/2020	100 - 161	No	DEC	6	15:00	21:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
17	RT	Other Reliability Requirement	SDGE	San Diego-IV	12/3/2020	24 - 161	No	INC	12	11:30	23:00
18	RT	Other Reliability Requirement	SDGE	San Diego-IV	12/13/2020	161	No	INC	9	7:40	16:00
19	RT	Planned Transmission Outage	PGAE	Bay Area	12/16/2020	400 - 450	No	DEC	9	10:40	19:30
20	RT	Planned Transmission Outage	PGAE	Bay Area	12/17/2020	450	No	INC	7	6:25	12:45
21	RT	Planned Transmission Outage	PGAE	Fresno	12/9/2020	8	No	DEC	5	10:30	15:00
22	RT	Planned Transmission Outage	PGAE	Fresno	12/9/2020	8	No	INC	2	15:00	17:00
23	RT	Planned Transmission Outage	PGAE	Fresno	12/11/2020	0 - 2	No	DEC	9	7:45	16:00
24	RT	Planned Transmission Outage	PGAE	Fresno	12/11/2020	2	No	INC	1	7:45	8:00
25	RT	Planned Transmission Outage	PGAE	Fresno	12/12/2020	1 - 2	No	DEC	8	8:00	16:00
26	RT	Planned Transmission Outage	PGAE	Humboldt	12/1/2020	14	No	DEC	17	7:00	0:00
27	RT	Planned Transmission Outage	PGAE	Humboldt	12/1/2020	14 - 48	No	INC	18	6:00	0:00
28	RT	Planned Transmission Outage	PGAE	Humboldt	12/2/2020	14 - 30	No	DEC	24	0:00	0:00
29	RT	Planned Transmission Outage	PGAE	Humboldt	12/2/2020	28 - 30	No	INC	24	0:00	0:00
30	RT	Planned Transmission Outage	PGAE	Humboldt	12/3/2020	28	No	DEC	10	14:00	0:00
31	RT	Planned Transmission Outage	PGAE	Humboldt	12/3/2020	14 - 28	No	INC	24	0:00	0:00
32	RT	Planned Transmission Outage	PGAE	Humboldt	12/4/2020	14 - 28	No	DEC	24	0:00	0:00
33	RT	Planned Transmission Outage	PGAE	Humboldt	12/4/2020	14 - 28	No	INC	24	0:00	0:00
34	RT	Planned Transmission Outage	PGAE	Humboldt	12/5/2020	15	No	DEC	3	18:30	21:15
35	RT	Planned Transmission Outage	PGAE	Humboldt	12/5/2020	15 - 30	No	INC	24	0:00	0:00
36	RT	Planned Transmission Outage	PGAE	Humboldt	12/6/2020	30 - 45	No	INC	24	0:00	0:00
37	RT	Planned Transmission Outage	PGAE	Humboldt	12/7/2020	14 - 45	No	DEC	18	5:00	23:00
38	RT	Planned Transmission Outage	PGAE	Humboldt	12/7/2020	14 - 45	No	INC	24	0:00	0:00
39	RT	Planned Transmission Outage	PGAE	Humboldt	12/8/2020	14 - 45	No	INC	24	0:00	0:00
40	RT	Planned Transmission Outage	PGAE	Humboldt	12/9/2020	14 - 56	No	DEC	16	6:00	22:00
41	RT	Planned Transmission Outage	PGAE	Humboldt	12/9/2020	14 - 56	No	INC	24	0:00	0:00
42	RT	Planned Transmission Outage	PGAE	Humboldt	12/10/2020	30 - 60	No	INC	24	0:00	0:00
43	RT	Planned Transmission Outage	PGAE	Humboldt	12/11/2020	30	No	INC	13	0:00	12:30
44	RT	Planned Transmission Outage	PGAE	Humboldt	12/14/2020	32 - 48	No	DEC	7	16:00	23:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
45	RT	Planned Transmission Outage	PGAE	Humboldt	12/14/2020	32 - 64	No	INC	17	7:05	0:00
46	RT	Planned Transmission Outage	PGAE	Humboldt	12/15/2020	64	No	DEC	6	17:00	23:00
47	RT	Planned Transmission Outage	PGAE	Humboldt	12/15/2020	28 - 48	No	INC	16	0:00	15:45
48	RT	Planned Transmission Outage	PGAE	Humboldt	12/16/2020	30 - 60	No	DEC	5	17:30	22:00
49	RT	Planned Transmission Outage	PGAE	Humboldt	12/16/2020	60	No	INC	1	22:00	23:00
50	RT	Planned Transmission Outage	PGAE	Humboldt	12/17/2020	28 - 42	No	INC	18	6:15	0:00
51	RT	Planned Transmission Outage	PGAE	Humboldt	12/18/2020	15 - 60	No	DEC	14	6:15	19:30
52	RT	Planned Transmission Outage	PGAE	Humboldt	12/18/2020	30 - 60	No	INC	16	0:00	16:00
53	RT	Planned Transmission Outage	PGAE	Humboldt	12/19/2020	28	No	INC	13	9:00	22:00
54	RT	Planned Transmission Outage	PGAE	Humboldt	12/24/2020	15 - 45	No	INC	5	8:30	13:00
55	RT	Planned Transmission Outage	PGAE	Humboldt	12/27/2020	30	No	DEC	3	15:00	17:30
56	RT	Planned Transmission Outage	PGAE	Humboldt	12/27/2020	30 - 60	No	INC	11	6:50	17:30
57	RT	Planned Transmission Outage	PGAE	Humboldt	12/30/2020	15	No	DEC	6	16:00	22:00
58	RT	Planned Transmission Outage	PGAE	Humboldt	12/30/2020	15 - 60	No	INC	17	7:25	0:00
59	RT	Planned Transmission Outage	PGAE	Humboldt	12/31/2020	15	No	DEC	8	16:45	0:00
60	RT	Planned Transmission Outage	PGAE	Humboldt	12/31/2020	15 - 30	No	INC	24	0:00	0:00
61	RT	Planned Transmission Outage	PGAE	Sierra	12/1/2020	20	No	INC	19	5:45	0:00
62	RT	Planned Transmission Outage	PGAE	Sierra	12/3/2020	40	No	INC	17	7:00	0:00
63	RT	Planned Transmission Outage	PGAE	Sierra	12/7/2020	40	No	DEC	14	6:00	20:00
64	RT	Planned Transmission Outage	PGAE	Sierra	12/7/2020	40	No	INC	11	5:00	16:00
65	RT	Planned Transmission Outage	PGAE	Sierra	12/10/2020	20	No	INC	7	14:40	21:30
66	RT	Planned Transmission Outage	PGAE	Sierra	12/11/2020	20	No	DEC	4	16:00	20:00
67	RT	Planned Transmission Outage	PGAE	Sierra	12/11/2020	20	No	INC	5	11:45	16:00
68	RT	Planned Transmission Outage	PGAE	Sierra	12/14/2020	1 - 10	No	INC	1	9:30	10:30
69	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	12/19/2020	100 - 401	No	INC	16	8:00	0:00
70	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	12/20/2020	100 - 401	No	INC	16	0:00	16:00
71	RT	Planned Transmission Outage	SCE	LA Basin	12/1/2020	47 - 194	No	INC	8	10:15	18:15

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
72	RT	Planned Transmission Outage	SCE	LA Basin	12/2/2020	194	No	INC	1	16:00	16:30
73	RT	Planned Transmission Outage	SCE	LA Basin	12/3/2020	20	No	INC	1	12:45	13:15
74	RT	Planned Transmission Outage	SCE	LA Basin	12/22/2020	96 - 98	No	INC	6	12:50	18:00
75	RT	Planned Transmission Outage	SCE	LA Basin	12/28/2020	98	No	INC	12	12:45	0:00
76	RT	Planned Transmission Outage	SCE	LA Basin	12/29/2020	98 - 300	No	INC	24	0:00	0:00
77	RT	Planned Transmission Outage	SCE	LA Basin	12/30/2020	250	No	DEC	10	0:00	9:40
78	RT	Planned Transmission Outage	SCE	LA Basin	12/30/2020	100 - 300	No	INC	22	0:00	22:00
79	RT	Planned Transmission Outage	SCE	NA	12/2/2020	30 - 39	No	DEC	9	15:35	0:00
80	RT	Planned Transmission Outage	SCE	NA	12/3/2020	30 - 45	No	DEC	24	0:00	0:00
81	RT	Planned Transmission Outage	SCE	NA	12/4/2020	39	No	DEC	4	0:00	3:30
82	RT	Planned Transmission Outage	SCE	NA	12/22/2020	0	No	DEC	3	12:50	15:00
83	RT	Planned Transmission Outage	SCE	NA	12/29/2020	0	No	DEC	7	9:00	16:00
84	RT	Reliability Assessment	PGAE	Fresno	12/29/2020	5 - 15	No	DEC	4	12:40	16:00
85	RT	Reliability Assessment	PGAE	Fresno	12/29/2020	10 - 15	No	INC	1	15:10	16:00
86	RT	Reliability Assessment	PGAE	Humboldt	12/1/2020	14	No	DEC	7	0:30	7:00
87	RT	Reliability Assessment	PGAE	Humboldt	12/1/2020	28 - 30	No	INC	1	0:00	0:30
88	RT	Reliability Assessment	PGAE	Humboldt	12/11/2020	14	No	DEC	2	22:45	0:00
89	RT	Reliability Assessment	PGAE	Humboldt	12/11/2020	14 - 30	No	INC	19	5:45	0:00
90	RT	Reliability Assessment	PGAE	Humboldt	12/12/2020	14	No	DEC	24	0:00	0:00
91	RT	Reliability Assessment	PGAE	Humboldt	12/12/2020	14	No	INC	24	0:00	0:00
92	RT	Reliability Assessment	PGAE	Humboldt	12/13/2020	14	No	DEC	22	0:00	22:00
93	RT	Reliability Assessment	PGAE	Humboldt	12/13/2020	14 - 30	No	INC	24	0:00	0:00
94	RT	Reliability Assessment	PGAE	Humboldt	12/14/2020	14 - 30	No	INC	8	0:00	7:30
95	RT	Reliability Assessment	PGAE	Humboldt	12/15/2020	30 - 45	No	DEC	4	20:55	0:00
96	RT	Reliability Assessment	PGAE	Humboldt	12/15/2020	30	No	INC	1	23:00	0:00
97	RT	Reliability Assessment	PGAE	Humboldt	12/16/2020	30	No	DEC	8	15:00	23:00
98	RT	Reliability Assessment	PGAE	Humboldt	12/16/2020	15 - 30	No	INC	24	0:00	0:00
99	RT	Reliability Assessment	PGAE	Humboldt	12/17/2020	14	No	DEC	4	2:45	6:30

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
100	RT	Reliability Assessment	PGAE	Humboldt	12/17/2020	30	No	INC	8	0:00	8:00
101	RT	Reliability Assessment	PGAE	Humboldt	12/18/2020	30 - 45	No	DEC	5	19:00	0:00
102	RT	Reliability Assessment	PGAE	Humboldt	12/18/2020	30	No	INC	1	23:00	0:00
103	RT	Reliability Assessment	PGAE	Humboldt	12/19/2020	15	No	DEC	9	0:30	8:40
104	RT	Reliability Assessment	PGAE	Humboldt	12/19/2020	15 - 45	No	INC	24	0:00	0:00
105	RT	Reliability Assessment	PGAE	Humboldt	12/20/2020	14	No	DEC	18	0:00	17:30
106	RT	Reliability Assessment	PGAE	Humboldt	12/20/2020	14 - 28	No	INC	8	16:45	0:00
107	RT	Reliability Assessment	PGAE	Humboldt	12/21/2020	14 - 28	No	DEC	9	15:00	0:00
108	RT	Reliability Assessment	PGAE	Humboldt	12/21/2020	14 - 28	No	INC	24	0:00	23:30
109	RT	Reliability Assessment	PGAE	Humboldt	12/22/2020	14	No	DEC	24	0:00	0:00
110	RT	Reliability Assessment	PGAE	Humboldt	12/22/2020	14 - 28	No	INC	18	6:35	0:00
111	RT	Reliability Assessment	PGAE	Humboldt	12/23/2020	14 - 30	No	DEC	24	0:00	0:00
112	RT	Reliability Assessment	PGAE	Humboldt	12/23/2020	14 - 30	No	INC	24	0:00	0:00
113	RT	Reliability Assessment	PGAE	Humboldt	12/24/2020	15	No	DEC	24	0:00	0:00
114	RT	Reliability Assessment	PGAE	Humboldt	12/24/2020	14 - 30	No	INC	24	0:00	23:30
115	RT	Reliability Assessment	PGAE	Humboldt	12/25/2020	14	No	DEC	24	0:00	0:00
116	RT	Reliability Assessment	PGAE	Humboldt	12/25/2020	28	No	INC	7	17:10	23:15
117	RT	Reliability Assessment	PGAE	Humboldt	12/26/2020	14 - 15	No	DEC	24	0:00	0:00
118	RT	Reliability Assessment	PGAE	Humboldt	12/26/2020	14 - 30	No	INC	11	12:00	22:45
119	RT	Reliability Assessment	PGAE	Humboldt	12/27/2020	15 - 30	No	DEC	19	0:00	19:00
120	RT	Reliability Assessment	PGAE	Humboldt	12/27/2020	14 - 45	No	INC	7	17:10	0:00
121	RT	Reliability Assessment	PGAE	Humboldt	12/28/2020	14	No	DEC	6	1:00	6:55
122	RT	Reliability Assessment	PGAE	Humboldt	12/28/2020	14 - 42	No	INC	24	0:00	0:00
123	RT	Reliability Assessment	PGAE	Humboldt	12/29/2020	30	No	INC	24	0:00	0:00
124	RT	Reliability Assessment	PGAE	Humboldt	12/30/2020	15	No	DEC	20	0:00	20:00
125	RT	Reliability Assessment	PGAE	Humboldt	12/30/2020	15 - 60	No	INC	14	6:35	20:00
126	RT	Reliability Assessment	PGAE	NCNB	12/26/2020	50 - 75	No	DEC	2	15:00	17:00
127	RT	Reliability Assessment	PGAE	NCNB	12/26/2020	50 - 75	No	INC	2	13:00	15:00
128	RT	Reliability Assessment	PGAE	Sierra	12/5/2020	20	No	INC	1	17:30	18:30

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
129	RT	Reliability Assessment	SCE	Big Creek-Ventura	12/29/2020	30	No	INC	5	7:20	12:00
130	RT	Reliability Assessment	SCE	NA	12/3/2020	470	No	DEC	3	17:10	20:00
131	RT	Reliability Assessment	SCE	NA	12/4/2020	470	No	DEC	4	17:40	21:00
132	RT	Reliability Assessment	SCE	NA	12/4/2020	470	No	INC	1	21:00	22:00
133	RT	Reliability Assessment	SCE	NA	12/8/2020	1	No	DEC	1	8:30	9:30
134	RT	Reliability Assessment	SCE	NA	12/10/2020	480	No	INC	9	6:50	15:00
135	RT	Reliability Assessment	SCE	NA	12/14/2020	450	No	DEC	4	17:00	21:00
136	RT	Reliability Assessment	SCE	NA	12/14/2020	450	No	INC	8	16:50	0:00
137	RT	Reliability Assessment	SCE	NA	12/15/2020	470	No	DEC	21	0:00	21:00
138	RT	Reliability Assessment	SCE	NA	12/15/2020	470	No	INC	21	3:00	0:00
139	RT	Reliability Assessment	SCE	NA	12/16/2020	470	No	DEC	14	6:00	20:00
140	RT	Reliability Assessment	SCE	NA	12/16/2020	470	No	INC	24	0:00	0:00
141	RT	Reliability Assessment	SCE	NA	12/18/2020	450	No	DEC	4	17:55	21:00
142	RT	Reliability Assessment	SCE	NA	12/18/2020	450	No	INC	3	21:00	0:00
143	RT	Reliability Assessment	SCE	NA	12/19/2020	450 - 475	No	INC	24	0:00	0:00
144	RT	Reliability Assessment	SCE	NA	12/20/2020	470 - 475	No	INC	6	18:30	0:00
145	RT	Reliability Assessment	SCE	NA	12/21/2020	470 - 475	No	INC	1	7:00	8:00
146	RT	Reliability Assessment	SCE	NA	12/22/2020	450	No	INC	3	21:10	0:00
147	RT	Reliability Assessment	SCE	NA	12/23/2020	425 - 450	No	DEC	18	6:00	0:00
148	RT	Reliability Assessment	SCE	NA	12/23/2020	425 - 450	No	INC	23	0:00	23:00
149	RT	Reliability Assessment	SCE	NA	12/24/2020	425 - 450	No	DEC	18	6:00	0:00
150	RT	Reliability Assessment	SCE	NA	12/24/2020	425 - 450	No	INC	23	0:00	23:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
151	RT	Reliability Assessment	SCE	NA	12/25/2020	430 - 460	No	DEC	23	0:00	23:00
152	RT	Reliability Assessment	SCE	NA	12/25/2020	460	No	INC	24	0:50	0:00
153	RT	Reliability Assessment	SCE	NA	12/26/2020	460	No	DEC	19	5:00	0:00
154	RT	Reliability Assessment	SCE	NA	12/26/2020	460	No	INC	23	0:00	23:00
155	RT	Reliability Assessment	SCE	NA	12/27/2020	450	No	DEC	3	16:00	19:00
156	RT	Reliability Assessment	SCE	NA	12/27/2020	450 - 474	No	INC	24	0:00	0:00
157	RT	Reliability Assessment	SCE	NA	12/28/2020	474	No	INC	1	0:00	0:30
158	RT	Reliability Assessment	SCE	NA	12/31/2020	475 - 480	No	INC	6	17:35	23:00
159	RT	Software Limitation	SCE	LA Basin	12/13/2020	38.85	No	INC	1	7:20	7:55
160	RT	Software Limitation	SDGE	San Diego-IV	12/1/2020	0	No	INC	2	18:50	20:15
161	RT	Software Limitation	SDGE	San Diego-IV	12/6/2020	0	No	INC	2	22:10	0:00
162	RT	Software Limitation	SDGE	San Diego-IV	12/7/2020	0	No	INC	7	0:00	6:15
163	RT	Software Limitation	SDGE	San Diego-IV	12/11/2020	-5	No	DEC	4	10:00	13:25
164	RT	Software Limitation	SDGE	San Diego-IV	12/11/2020	0	No	INC	18	6:25	0:00
165	RT	Software Limitation	SDGE	San Diego-IV	12/12/2020	-25	No	DEC	5	1:30	5:45
166	RT	Software Limitation	SDGE	San Diego-IV	12/12/2020	0 - 350	No	INC	24	0:00	0:00
167	RT	Software Limitation	SDGE	San Diego-IV	12/13/2020	-25	No	DEC	18	4:30	22:25
168	RT	Software Limitation	SDGE	San Diego-IV	12/13/2020	0	No	INC	24	0:00	0:00
169	RT	Software Limitation	SDGE	San Diego-IV	12/14/2020	-25	No	DEC	19	5:15	0:00
170	RT	Software Limitation	SDGE	San Diego-IV	12/14/2020	0	No	INC	6	0:00	5:15
171	RT	Unit Testing	Intertie	NA	12/1/2020	50	No	INC	24	0:00	0:00
172	RT	Unit Testing	Intertie	NA	12/2/2020	50	No	INC	24	0:00	0:00
173	RT	Unit Testing	Intertie	NA	12/3/2020	50 - 300	No	INC	24	0:00	0:00
174	RT	Unit Testing	Intertie	NA	12/4/2020	40 - 300	No	INC	24	0:00	0:00
175	RT	Unit Testing	Intertie	NA	12/5/2020	50	No	INC	24	0:00	0:00
176	RT	Unit Testing	Intertie	NA	12/6/2020	50 - 51	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
177	RT	Unit Testing	Intertie	NA	12/7/2020	50 - 86	No	INC	24	0:00	0:00
178	RT	Unit Testing	Intertie	NA	12/8/2020	10 - 188	No	INC	24	0:00	0:00
179	RT	Unit Testing	Intertie	NA	12/9/2020	20 - 62	No	INC	24	0:00	0:00
180	RT	Unit Testing	Intertie	NA	12/10/2020	0 - 169	No	INC	24	0:00	0:00
181	RT	Unit Testing	Intertie	NA	12/11/2020	5 - 165	No	INC	24	0:00	0:00
182	RT	Unit Testing	Intertie	NA	12/12/2020	11 - 128	No	INC	24	0:00	0:00
183	RT	Unit Testing	Intertie	NA	12/13/2020	10 - 100	No	INC	24	0:00	0:00
184	RT	Unit Testing	Intertie	NA	12/14/2020	10 - 100	No	INC	24	0:00	0:00
185	RT	Unit Testing	Intertie	NA	12/15/2020	20 - 99	No	INC	15	0:00	15:00
186	RT	Unit Testing	Intertie	NA	12/16/2020	20 - 63	No	INC	23	0:00	23:00
187	RT	Unit Testing	Intertie	NA	12/17/2020	20 - 50	No	INC	9	7:00	16:00
188	RT	Unit Testing	PGAE	NA	12/17/2020	55	No	INC	1	8:15	8:45
189	RT	Unit Testing	SCE	LA Basin	12/9/2020	96	No	INC	1	19:35	20:00
190	RT	Unit Testing	SCE	LA Basin	12/19/2020	39	No	INC	1	21:15	22:00
191	RT	Unit Testing	SCE	NA	12/2/2020	280 - 380	No	INC	7	11:00	18:00
192	RT	Unit Testing	SCE	NA	12/9/2020	225	No	INC	1	10:35	11:00
193	RT	Unit Testing	SDGE	San Diego-IV	12/4/2020	105.5	No	INC	1	16:00	16:40
194	RT	Unit Testing	SDGE	San Diego-IV	12/12/2020	125	No	INC	1	0:05	0:40
195	RT	Unit Testing	SDGE	San Diego-IV	12/25/2020	160	No	INC	4	20:45	0:00
196	RT	Unit Testing	SDGE	San Diego-IV	12/26/2020	230	No	INC	2	0:20	1:30
197	RT	Unit Testing	SDGE	San Diego-IV	12/28/2020	245	No	INC	3	4:45	7:30
198	RT	Unplanned Outage	PGAE	Bay Area	12/2/2020	175	No	INC	8	14:45	22:00
199	RT	Unplanned Outage	PGAE	Bay Area	12/13/2020	175 - 330	No	DEC	4	7:50	11:00
200	RT	Unplanned Outage	SCE	LA Basin	12/2/2020	20 - 194	No	INC	10	12:00	22:00
201	RT	Unplanned Outage	SCE	LA Basin	12/13/2020	130 - 251	No	DEC	7	13:10	20:00
202	RT	Unplanned Outage	SCE	LA Basin	12/13/2020	0 - 263	No	INC	9	7:35	16:30

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
203	RT	Unplanned Outage	SDGE	San Diego-IV	12/13/2020	497	No	INC	1	7:20	8:00
204	RT	Voltage Support	PGAE	NA	12/13/2020	307	No	DEC	23	0:55	23:00
205	RT	Voltage Support	PGAE	NA	12/13/2020	307	No	INC	23	1:00	0:00
206	RT	Voltage Support	PGAE	NA	12/14/2020	48.95 - 307	No	DEC	18	6:00	0:00
207	RT	Voltage Support	PGAE	NA	12/14/2020	62 - 307	No	INC	7	0:00	7:00
208	RT	Voltage Support	PGAE	NA	12/15/2020	48.95	No	DEC	2	5:00	7:00
209	RT	Voltage Support	PGAE	NA	12/15/2020	48.95	No	INC	5	0:00	5:00
210	RT	Voltage Support	PGAE	NA	12/21/2020	49	No	DEC	1	6:00	7:00
211	RT	Voltage Support	PGAE	NA	12/21/2020	49	No	INC	6	0:15	6:00
212	RT	Voltage Support	PGAE	NA	12/22/2020	49	No	INC	4	2:10	6:00
213	RT	Voltage Support	PGAE	Sierra	12/2/2020	45	No	DEC	13	6:00	19:00
214	RT	Voltage Support	PGAE	Sierra	12/2/2020	20 - 45	No	INC	23	1:35	0:00
215	RT	Voltage Support	PGAE	Sierra	12/3/2020	20	No	INC	24	0:00	0:00
216	RT	Voltage Support	PGAE	Sierra	12/4/2020	20	No	INC	6	0:00	6:00
217	RT	Voltage Support	PGAE	Sierra	12/9/2020	20	No	INC	1	18:30	19:00
218	RT	Voltage Support	PGAE	Sierra	12/22/2020	20	No	INC	4	2:10	6:00
219	RT	Voltage Support	PGAE	Sierra	12/28/2020	20	No	INC	1	5:45	6:00
220	RT	Voltage Support	PGAE	Sierra	12/31/2020	20	No	INC	10	13:25	23:00
221	RT	Voltage Support	SDGE	San Diego-IV	12/14/2020	0	No	INC	4	10:45	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