



# Exceptional Dispatch Report

## Table 1: January 2020

## TABLE OF CONTENTS

Introduction .....	3
The Nature of Exceptional Dispatch .....	3
Appendix A: Explanation by Example .....	17
Example 1: Exceptional Dispatch Instructions Prior to DAM .....	17
Example 2: Incremental Exceptional Dispatch Instructions in RTM.....	18
Example 3: Decremental Exceptional Dispatch Instructions in RTM .....	20

## LIST OF TABLES AND FIGURES

Table 1: Exceptional Dispatches in January 2020 .....	6
Table 2: Instructions Prior to Day-Ahead Market .....	17
Table 3: FERC Summary of Instructions Prior to DAM.....	18
Table 4: Incremental Exceptional Dispatch Instructions in RTM.....	18
Table 5: FERC Summary of ED Instructions in RTM.....	19
Table 6: Decremental Exceptional Dispatch Instructions in RTM .....	20
Table 7: FERC Summary of Decremental ED Instructions in RTM .....	20

## 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 15<sup>th</sup> of each month and one originally issued on the 30<sup>th</sup> of each month. Both Table 1 and Table 2 reports will be issued on the 15<sup>th</sup> of each month due to the availability of necessary data. This report provides data on the frequency and reasons for Exceptional Dispatches issued in January 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 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 January 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

---

<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>

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 January 2020, 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 268 exceptional dispatches in January 2020, as compared to 288 exceptional dispatches in December 2019. Exceptional dispatches issued for the following reasons accounted for approximately 90

---

<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.

percent of the total exceptional dispatches during the reporting period: planned transmission outages, reliability assessment, unit testing, and voltage support. Exceptional dispatches with the reason “Reliability Assessment” were due to Real Time Contingency Analysis, Voltage Stability Analysis, and operating procedure number 7110 (along with 7910). 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) <sup>4</sup> The operator procedure 2330C - <http://www.caiso.com/Documents/2330C.pdf>

**Table 1: Exceptional Dispatches in January 2020**

**California Independent System Operator Corporation  
Exceptional Dispatch Report  
March 16, 2020**

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

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	Bridging Schedules	PGAE	Fresno	1/6/2020	83	No	INC	1	17:10	18:00
2	RT	Fast Start Unit Management	SCE	LA Basin	1/25/2020	0	No	INC	1	6:15	7:15
3	RT	Incomplete or Inaccurate Transmission	SCE	LA Basin	1/10/2020	147	No	DEC	5	17:30	22:00
4	RT	Incomplete or Inaccurate Transmission	SCE	LA Basin	1/10/2020	147	No	INC	6	17:30	23:30
5	RT	Incomplete or Inaccurate Transmission	SDGE	San Diego-IV	1/27/2020	40	No	INC	5	18:05	23:00
6	RT	Market Disruption	PGAE	Fresno	1/29/2020	83 - 407	No	INC	4	14:45	18:00
7	RT	Other Reliability Requirement	PGAE	Fresno	1/3/2020	300	No	INC	1	20:35	21:00
8	RT	Other Reliability Requirement	PGAE	Fresno	1/15/2020	404	No	INC	2	7:25	9:00
9	RT	Other Reliability Requirement	PGAE	Fresno	1/17/2020	83	No	INC	1	22:00	22:45
10	RT	Other Reliability Requirement	SCE	LA Basin	1/8/2020	148	No	DEC	2	20:10	22:00
11	RT	Planned Transmission Outage	PGAE	Bay Area	1/8/2020	15	No	INC	11	9:00	20:00
12	RT	Planned Transmission Outage	PGAE	Humboldt	1/14/2020	15	No	INC	2	22:45	0:00
13	RT	Planned Transmission Outage	PGAE	Humboldt	1/15/2020	15 - 64	No	INC	24	0:00	0:00
14	RT	Planned Transmission Outage	PGAE	Humboldt	1/16/2020	15 - 76	No	INC	24	0:00	0:00
15	RT	Planned Transmission Outage	PGAE	Humboldt	1/17/2020	15 - 60	No	INC	6	0:00	6:00
16	RT	Planned Transmission Outage	PGAE	Humboldt	1/18/2020	30 - 60	No	INC	24	0:00	0:00
17	RT	Planned Transmission Outage	PGAE	Humboldt	1/19/2020	16	No	DEC	4	20:30	0:00
18	RT	Planned Transmission Outage	PGAE	Humboldt	1/19/2020	15 - 48	No	INC	24	0:00	0:00
19	RT	Planned Transmission Outage	PGAE	Humboldt	1/20/2020	16	No	INC	1	0:00	0:15
20	RT	Planned Transmission Outage	PGAE	Humboldt	1/21/2020	15 - 45	No	INC	18	6:40	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
21	RT	Planned Transmission Outage	PGAE	Humboldt	1/22/2020	15	No	DEC	3	0:45	3:00
22	RT	Planned Transmission Outage	PGAE	Humboldt	1/22/2020	15 - 45	No	INC	24	0:00	0:00
23	RT	Planned Transmission Outage	PGAE	Humboldt	1/23/2020	15	No	DEC	3	0:15	3:00
24	RT	Planned Transmission Outage	PGAE	Humboldt	1/23/2020	15 - 45	No	INC	24	0:00	0:00
25	RT	Planned Transmission Outage	PGAE	Humboldt	1/24/2020	30 - 45	No	INC	24	0:00	0:00
26	RT	Planned Transmission Outage	PGAE	Humboldt	1/25/2020	16 - 32	No	INC	24	0:00	0:00
27	RT	Planned Transmission Outage	PGAE	Humboldt	1/26/2020	14 - 28	No	INC	18	0:00	18:00
28	RT	Planned Transmission Outage	PGAE	Humboldt	1/27/2020	15	No	DEC	1	23:45	0:00
29	RT	Planned Transmission Outage	PGAE	Humboldt	1/27/2020	15 - 45	No	INC	18	6:55	0:00
30	RT	Planned Transmission Outage	PGAE	Humboldt	1/28/2020	15	No	DEC	1	0:00	0:15
31	RT	Planned Transmission Outage	PGAE	Humboldt	1/28/2020	15 - 48	No	INC	24	0:00	0:00
32	RT	Planned Transmission Outage	PGAE	Humboldt	1/29/2020	16 - 48	No	INC	20	0:00	20:00
33	RT	Planned Transmission Outage	PGAE	Humboldt	1/31/2020	16	No	DEC	4	20:00	23:45
34	RT	Planned Transmission Outage	PGAE	Humboldt	1/31/2020	16 - 48	No	INC	16	6:45	22:00
35	RT	Planned Transmission Outage	PGAE	Sierra	1/13/2020	40	No	DEC	1	17:00	17:15
36	RT	Planned Transmission Outage	PGAE	Sierra	1/13/2020	40	No	INC	8	9:55	17:00
37	RT	Planned Transmission Outage	PGAE	Sierra	1/16/2020	45	No	INC	10	8:45	18:30
38	RT	Planned Transmission Outage	PGAE	Sierra	1/17/2020	20	No	DEC	2	17:00	19:00
39	RT	Planned Transmission Outage	PGAE	Sierra	1/17/2020	20	No	INC	17	7:25	0:00
40	RT	Planned Transmission Outage	PGAE	Sierra	1/18/2020	20	No	INC	24	0:00	0:00
41	RT	Planned Transmission Outage	PGAE	Sierra	1/19/2020	20	No	INC	24	0:00	0:00
42	RT	Planned Transmission Outage	PGAE	Sierra	1/20/2020	20	No	INC	13	0:00	12:45
43	RT	Planned Transmission Outage	PGAE	Sierra	1/21/2020	20	No	INC	14	9:40	23:00
44	RT	Planned Transmission Outage	PGAE	Sierra	1/22/2020	20	No	DEC	2	17:00	19:00
45	RT	Planned Transmission Outage	PGAE	Sierra	1/22/2020	20	No	INC	14	9:55	23:00
46	RT	Planned Transmission Outage	PGAE	Sierra	1/23/2020	20	No	INC	14	9:45	23:00
47	RT	Planned Transmission Outage	PGAE	Stockton	1/1/2020	90	No	DEC	24	0:00	0:00
48	RT	Planned Transmission Outage	PGAE	Stockton	1/1/2020	90	No	INC	8	8:00	16:00
49	RT	Planned Transmission Outage	PGAE	Stockton	1/2/2020	90	No	DEC	21	3:00	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
50	RT	Planned Transmission Outage	PGAE	Stockton	1/2/2020	90	No	INC	14	0:00	14:00
51	RT	Planned Transmission Outage	PGAE	Stockton	1/3/2020	90	No	DEC	20	4:00	0:00
52	RT	Planned Transmission Outage	PGAE	Stockton	1/3/2020	90	No	INC	14	0:00	14:00
53	RT	Planned Transmission Outage	PGAE	Stockton	1/4/2020	90	No	DEC	24	0:00	0:00
54	RT	Planned Transmission Outage	PGAE	Stockton	1/4/2020	90	No	INC	6	9:00	15:00
55	RT	Planned Transmission Outage	PGAE	Stockton	1/5/2020	90	No	DEC	24	0:00	0:00
56	RT	Planned Transmission Outage	PGAE	Stockton	1/5/2020	90	No	INC	6	9:00	15:00
57	RT	Planned Transmission Outage	PGAE	Stockton	1/6/2020	90	No	DEC	24	0:00	0:00
58	RT	Planned Transmission Outage	PGAE	Stockton	1/6/2020	90	No	INC	14	1:00	15:00
59	RT	Planned Transmission Outage	PGAE	Stockton	1/7/2020	90	No	DEC	24	0:00	0:00
60	RT	Planned Transmission Outage	PGAE	Stockton	1/7/2020	90	No	INC	14	1:00	15:00
61	RT	Planned Transmission Outage	PGAE	Stockton	1/8/2020	90	No	DEC	19	5:00	0:00
62	RT	Planned Transmission Outage	PGAE	Stockton	1/8/2020	90	No	INC	15	0:00	15:00
63	RT	Planned Transmission Outage	PGAE	Stockton	1/9/2020	90	No	DEC	20	4:00	0:00
64	RT	Planned Transmission Outage	PGAE	Stockton	1/9/2020	90	No	INC	15	0:00	15:00
65	RT	Planned Transmission Outage	PGAE	Stockton	1/10/2020	90	No	DEC	24	0:00	0:00
66	RT	Planned Transmission Outage	PGAE	Stockton	1/10/2020	90	No	INC	3	12:00	15:00
67	RT	Planned Transmission Outage	PGAE	Stockton	1/11/2020	90	No	DEC	24	0:00	0:00
68	RT	Planned Transmission Outage	PGAE	Stockton	1/11/2020	90	No	INC	6	9:00	15:00
69	RT	Planned Transmission Outage	PGAE	Stockton	1/12/2020	90	No	DEC	24	0:00	0:00
70	RT	Planned Transmission Outage	PGAE	Stockton	1/12/2020	90	No	INC	6	9:00	15:00
71	RT	Planned Transmission Outage	PGAE	Stockton	1/13/2020	90	No	DEC	20	4:00	0:00
72	RT	Planned Transmission Outage	PGAE	Stockton	1/13/2020	90	No	INC	15	0:00	15:00
73	RT	Planned Transmission Outage	PGAE	Stockton	1/14/2020	90	No	DEC	20	4:00	0:00
74	RT	Planned Transmission Outage	PGAE	Stockton	1/14/2020	90	No	INC	15	0:00	15:00
75	RT	Planned Transmission Outage	PGAE	Stockton	1/15/2020	90	No	DEC	24	0:00	0:00
76	RT	Planned Transmission Outage	PGAE	Stockton	1/15/2020	90	No	INC	1	1:00	2:00
77	RT	Planned Transmission Outage	PGAE	Stockton	1/16/2020	90	No	DEC	24	0:00	0:00
78	RT	Planned Transmission Outage	PGAE	Stockton	1/17/2020	90	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
79	RT	Planned Transmission Outage	PGAE	Stockton	1/17/2020	90	No	INC	3	1:00	4:00
80	RT	Planned Transmission Outage	PGAE	Stockton	1/18/2020	90	No	DEC	24	0:00	0:00
81	RT	Planned Transmission Outage	PGAE	Stockton	1/18/2020	90	No	INC	6	9:00	15:00
82	RT	Planned Transmission Outage	PGAE	Stockton	1/19/2020	90	No	DEC	24	0:00	0:00
83	RT	Planned Transmission Outage	PGAE	Stockton	1/19/2020	90	No	INC	6	9:00	15:00
84	RT	Planned Transmission Outage	PGAE	Stockton	1/20/2020	90	No	DEC	24	0:00	0:00
85	RT	Planned Transmission Outage	PGAE	Stockton	1/20/2020	90	No	INC	2	2:00	4:00
86	RT	Planned Transmission Outage	PGAE	Stockton	1/21/2020	90	No	DEC	23	0:00	23:00
87	RT	Planned Transmission Outage	PGAE	Stockton	1/21/2020	90	No	INC	22	2:00	0:00
88	RT	Planned Transmission Outage	PGAE	Stockton	1/22/2020	90	No	DEC	19	5:00	0:00
89	RT	Planned Transmission Outage	PGAE	Stockton	1/22/2020	90	No	INC	15	0:00	15:00
90	RT	Planned Transmission Outage	PGAE	Stockton	1/23/2020	90	No	DEC	24	0:00	0:00
91	RT	Planned Transmission Outage	PGAE	Stockton	1/23/2020	90	No	INC	14	1:00	15:00
92	RT	Planned Transmission Outage	PGAE	Stockton	1/24/2020	90	No	INC	16	0:00	15:30
93	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	1/10/2020	650 - 750	No	DEC	8	0:20	8:00
94	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	1/10/2020	750	No	INC	2	8:00	10:00
95	RT	Planned Transmission Outage	SCE	LA Basin	1/6/2020	98	No	INC	14	10:45	0:00
96	RT	Planned Transmission Outage	SCE	LA Basin	1/7/2020	98 - 250	No	INC	20	0:00	20:00
97	RT	Planned Transmission Outage	SCE	LA Basin	1/8/2020	20	No	DEC	4	16:00	20:00
98	RT	Planned Transmission Outage	SCE	LA Basin	1/8/2020	20 - 255	No	INC	15	5:00	20:00
99	RT	Planned Transmission Outage	SCE	LA Basin	1/9/2020	98	No	INC	15	5:00	20:00
100	RT	Planned Transmission Outage	SCE	LA Basin	1/10/2020	147	No	DEC	1	16:55	17:30
101	RT	Planned Transmission Outage	SCE	LA Basin	1/10/2020	47.5 - 147	No	INC	18	6:00	0:00
102	RT	Planned Transmission Outage	SCE	LA Basin	1/11/2020	47.5 - 147	Yes	INC	20	0:00	20:00
103	RT	Planned Transmission Outage	SCE	LA Basin	1/12/2020	98	No	INC	15	5:00	20:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
104	RT	Planned Transmission Outage	SCE	LA Basin	1/13/2020	10	No	INC	17	7:00	0:00
105	RT	Planned Transmission Outage	SCE	LA Basin	1/14/2020	10	Yes	INC	24	0:00	0:00
106	RT	Planned Transmission Outage	SCE	LA Basin	1/15/2020	200 - 250	No	DEC	11	10:25	20:35
107	RT	Planned Transmission Outage	SCE	LA Basin	1/15/2020	10	Yes	INC	24	0:00	0:00
108	RT	Planned Transmission Outage	SCE	LA Basin	1/26/2020	251 - 525	No	INC	11	9:00	20:00
109	RT	Planned Transmission Outage	SCE	LA Basin	1/31/2020	20 - 190	No	INC	16	8:00	0:00
110	RT	Planned Transmission Outage	SCE	NA	1/30/2020	100	No	DEC	3	13:50	16:00
111	RT	Planned Transmission Outage	SCE	NA	1/30/2020	100	No	INC	2	13:50	15:00
112	RT	Planned Transmission Outage	SCE	NA	1/31/2020	60	No	DEC	1	15:00	16:00
113	RT	Planned Transmission Outage	SCE	NA	1/31/2020	60	No	INC	2	13:20	15:00
114	RT	Planned Transmission Outage	SDGE	San Diego-IV	1/21/2020	40	No	INC	11	9:40	20:00
115	RT	Planned Transmission Outage	SDGE	San Diego-IV	1/22/2020	40	No	INC	15	9:45	0:00
116	RT	Planned Transmission Outage	SDGE	San Diego-IV	1/23/2020	40	No	INC	23	0:00	23:00
117	RT	Planned Transmission Outage	SDGE	San Diego-IV	1/26/2020	40	No	INC	2	19:40	21:00
118	RT	Planned Transmission Outage	SDGE	San Diego-IV	1/28/2020	40	No	INC	3	19:45	22:00
119	RT	Planned Transmission Outage	SDGE	San Diego-IV	1/29/2020	40	No	INC	15	6:45	21:00
120	RT	Planned Transmission Outage	SDGE	San Diego-IV	1/30/2020	40	No	INC	4	8:05	12:00
121	RT	Planned Transmission Outage	SDGE	San Diego-IV	1/31/2020	24 - 40	No	INC	10	10:50	20:00
122	RT	Ramping Capacity	SCE	LA Basin	1/6/2020	251	No	INC	7	13:00	20:00
123	RT	Reliability Assessment	PGAE	Bay Area	1/7/2020	15	No	INC	12	8:10	20:00
124	RT	Reliability Assessment	PGAE	Fresno	1/20/2020	83	No	INC	1	23:50	0:00
125	RT	Reliability Assessment	PGAE	Fresno	1/21/2020	83	No	INC	24	0:00	0:00
126	RT	Reliability Assessment	PGAE	Fresno	1/22/2020	83	Yes	INC	6	0:00	6:00
127	RT	Reliability Assessment	PGAE	Humboldt	1/2/2020	32	No	DEC	7	15:00	21:50
128	RT	Reliability Assessment	PGAE	Humboldt	1/2/2020	32	No	INC	15	9:15	0:00
129	RT	Reliability Assessment	PGAE	Humboldt	1/3/2020	14 - 32	No	INC	21	0:00	21:00
130	RT	Reliability Assessment	PGAE	Humboldt	1/4/2020	16	No	INC	6	16:30	22:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
131	RT	Reliability Assessment	PGAE	Humboldt	1/5/2020	15	No	DEC	1	16:55	17:00
132	RT	Reliability Assessment	PGAE	Humboldt	1/5/2020	30	No	INC	5	17:00	22:00
133	RT	Reliability Assessment	PGAE	Humboldt	1/6/2020	16	No	DEC	4	6:35	9:40
134	RT	Reliability Assessment	PGAE	Humboldt	1/6/2020	16 - 32	No	INC	18	6:35	0:00
135	RT	Reliability Assessment	PGAE	Humboldt	1/7/2020	15 - 16	No	DEC	9	0:45	9:00
136	RT	Reliability Assessment	PGAE	Humboldt	1/7/2020	15 - 32	No	INC	20	0:00	20:00
137	RT	Reliability Assessment	PGAE	Humboldt	1/8/2020	14	No	INC	16	7:30	23:00
138	RT	Reliability Assessment	PGAE	Humboldt	1/9/2020	14 - 30	No	INC	16	7:25	23:00
139	RT	Reliability Assessment	PGAE	Humboldt	1/10/2020	14	No	INC	18	6:30	0:00
140	RT	Reliability Assessment	PGAE	Humboldt	1/11/2020	14 - 15	No	INC	24	0:00	0:00
141	RT	Reliability Assessment	PGAE	Humboldt	1/12/2020	14 - 15	No	INC	23	0:15	23:00
142	RT	Reliability Assessment	PGAE	Humboldt	1/13/2020	16 - 64	No	INC	17	7:15	0:00
143	RT	Reliability Assessment	PGAE	Humboldt	1/14/2020	16	No	DEC	1	8:45	9:00
144	RT	Reliability Assessment	PGAE	Humboldt	1/14/2020	15 - 48	No	INC	24	0:00	0:00
145	RT	Reliability Assessment	PGAE	Humboldt	1/15/2020	15 - 64	No	INC	20	0:00	20:00
146	RT	Reliability Assessment	PGAE	Humboldt	1/20/2020	30	No	INC	16	7:30	23:00
147	RT	Reliability Assessment	PGAE	Humboldt	1/26/2020	14	No	INC	5	17:45	22:30
148	RT	Reliability Assessment	PGAE	Humboldt	1/29/2020	15	No	DEC	2	22:15	0:00
149	RT	Reliability Assessment	PGAE	Humboldt	1/29/2020	30 - 32	No	INC	2	20:25	22:15
150	RT	Reliability Assessment	PGAE	Humboldt	1/30/2020	30	No	INC	3	7:30	9:45
151	RT	Reliability Assessment	SCE	LA Basin	1/9/2020	148 - 150	No	DEC	10	12:00	22:00
152	RT	Reliability Assessment	SCE	LA Basin	1/13/2020	40 - 60	No	INC	4	18:20	21:30
153	RT	Reliability Assessment	SCE	NA	1/3/2020	60	No	INC	2	15:15	17:00
154	RT	Reliability Assessment	SCE	NA	1/5/2020	40 - 100	No	DEC	2	13:35	15:00
155	RT	Reliability Assessment	SCE	NA	1/5/2020	40 - 100	No	INC	5	13:35	18:00
156	RT	Reliability Assessment	SCE	NA	1/7/2020	50	No	DEC	6	9:10	15:00
157	RT	Reliability Assessment	SCE	NA	1/7/2020	50	No	INC	1	15:00	16:00
158	RT	Reliability Assessment	SCE	NA	1/8/2020	50	No	DEC	6	9:10	15:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
159	RT	Reliability Assessment	SCE	NA	1/8/2020	50	No	INC	1	15:00	16:00
160	RT	Reliability Assessment	SCE	NA	1/15/2020	65 - 70	No	INC	7	10:10	17:00
161	RT	Reliability Assessment	SCE	NA	1/16/2020	50	No	DEC	4	11:00	15:00
162	RT	Reliability Assessment	SCE	NA	1/16/2020	50	No	INC	1	10:55	11:00
163	RT	Reliability Assessment	SCE	NA	1/17/2020	50	No	DEC	4	9:15	13:00
164	RT	Reliability Assessment	SCE	NA	1/17/2020	50	No	INC	2	13:00	15:00
165	RT	Reliability Assessment	SCE	NA	1/18/2020	50	No	DEC	6	9:45	15:00
166	RT	Reliability Assessment	SCE	NA	1/18/2020	50	No	INC	1	15:00	16:00
167	RT	Reliability Assessment	SCE	NA	1/19/2020	50	No	DEC	5	9:00	14:00
168	RT	Reliability Assessment	SCE	NA	1/19/2020	50	No	INC	8	8:50	16:00
169	RT	Reliability Assessment	SCE	NA	1/21/2020	60 - 70	No	DEC	2	14:00	16:00
170	RT	Reliability Assessment	SCE	NA	1/21/2020	70	No	INC	1	13:35	14:00
171	RT	Reliability Assessment	SCE	NA	1/22/2020	60	No	DEC	4	12:00	16:00
172	RT	Reliability Assessment	SCE	NA	1/22/2020	60	No	INC	1	11:35	12:00
173	RT	Reliability Assessment	SCE	NA	1/23/2020	60	No	INC	7	9:10	16:00
174	RT	Reliability Assessment	SCE	NA	1/24/2020	60	No	DEC	7	9:00	16:00
175	RT	Reliability Assessment	SCE	NA	1/25/2020	60	No	DEC	7	9:00	16:00
176	RT	Reliability Assessment	SCE	NA	1/25/2020	60	No	INC	1	8:45	9:00
177	RT	Reliability Assessment	SCE	NA	1/26/2020	70	No	DEC	6	9:35	15:00
178	RT	Reliability Assessment	SCE	NA	1/26/2020	70	No	INC	6	11:00	16:30
179	RT	Reliability Assessment	SCE	NA	1/27/2020	80	No	INC	9	8:55	17:00
180	RT	Reliability Assessment	SDGE	San Diego-IV	1/1/2020	40	No	INC	5	17:30	22:00
181	RT	Reliability Assessment	SDGE	San Diego-IV	1/2/2020	40	No	INC	13	10:00	23:00
182	RT	Reliability Assessment	SDGE	San Diego-IV	1/3/2020	24	No	INC	5	18:30	23:30
183	RT	Reliability Assessment	SDGE	San Diego-IV	1/6/2020	40	No	INC	17	7:40	0:00
184	RT	Reliability Assessment	SDGE	San Diego-IV	1/7/2020	25	No	INC	11	9:40	20:00
185	RT	Reliability Assessment	SDGE	San Diego-IV	1/8/2020	24	No	INC	8	12:15	20:00
186	RT	Reliability Assessment	SDGE	San Diego-IV	1/9/2020	40	No	INC	4	10:15	14:15
187	RT	Reliability Assessment	SDGE	San Diego-IV	1/10/2020	40	No	INC	5	17:25	22:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
188	RT	Reliability Assessment	SDGE	San Diego-IV	1/12/2020	40	No	INC	4	18:50	22:00
189	RT	Software Limitation	PGAE	Bay Area	1/1/2020	0	No	INC	5	9:20	13:25
190	RT	Software Limitation	PGAE	Bay Area	1/31/2020	331	No	DEC	2	17:15	18:45
191	RT	Software Limitation	PGAE	Fresno	1/24/2020	83	No	INC	1	8:00	9:00
192	RT	Software Limitation	PGAE	Fresno	1/30/2020	83	No	DEC	1	19:20	20:00
193	RT	Software Limitation	PGAE	NA	1/8/2020	0	No	INC	5	19:00	0:00
194	RT	Software Limitation	PGAE	NA	1/12/2020	0	No	INC	6	11:00	16:30
195	RT	Software Limitation	SCE	Big Creek-Ventura	1/10/2020	0	No	INC	1	22:45	23:40
196	RT	Software Limitation	SCE	LA Basin	1/6/2020	20	No	DEC	3	17:00	20:00
197	RT	Software Limitation	SCE	LA Basin	1/6/2020	20	No	INC	8	9:00	17:00
198	RT	Software Limitation	SCE	LA Basin	1/8/2020	255	No	INC	1	14:30	15:00
199	RT	Software Limitation	SCE	LA Basin	1/30/2020	300	No	DEC	1	19:30	20:00
200	RT	Software Limitation	SCE	NA	1/30/2020	0	No	INC	1	23:35	0:00
201	RT	Software Limitation	SCE	NA	1/31/2020	0	No	INC	1	0:00	0:30
202	RT	Software Limitation	SDGE	San Diego-IV	1/17/2020	21 - 22.4	No	INC	1	0:00	1:00
203	RT	Software Limitation	SDGE	San Diego-IV	1/25/2020	0	No	INC	1	0:00	1:00
204	RT	Unit Testing	PGAE	Bay Area	1/6/2020	288 - 395	No	DEC	6	10:30	16:30
205	RT	Unit Testing	PGAE	Bay Area	1/7/2020	540	No	DEC	8	9:00	16:15
206	RT	Unit Testing	PGAE	Bay Area	1/7/2020	46 - 540	No	INC	7	12:00	19:00
207	RT	Unit Testing	PGAE	Bay Area	1/8/2020	46 - 195	No	INC	7	12:00	19:00
208	RT	Unit Testing	PGAE	Bay Area	1/9/2020	46 - 93	No	INC	4	14:00	18:00
209	RT	Unit Testing	PGAE	Bay Area	1/10/2020	540	No	DEC	1	16:00	16:15
210	RT	Unit Testing	PGAE	Bay Area	1/10/2020	46 - 540	No	INC	8	9:15	17:00
211	RT	Unit Testing	PGAE	Bay Area	1/11/2020	46 - 70	No	INC	11	7:45	18:15
212	RT	Unit Testing	PGAE	Bay Area	1/12/2020	46	No	INC	2	14:05	16:00
213	RT	Unit Testing	PGAE	Bay Area	1/13/2020	46	No	INC	2	11:00	13:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
214	RT	Unit Testing	PGAE	Bay Area	1/19/2020	125 - 150	Yes	INC	7	14:00	20:15
215	RT	Unit Testing	PGAE	Fresno	1/3/2020	22	No	INC	1	14:25	15:00
216	RT	Unit Testing	PGAE	Fresno	1/10/2020	22.5	No	INC	1	15:25	15:55
217	RT	Unit Testing	PGAE	Kern	1/16/2020	50	No	INC	2	12:15	13:30
218	RT	Unit Testing	PGAE	Sierra	1/3/2020	100	No	INC	1	9:30	10:30
219	RT	Unit Testing	PGAE	NA	1/10/2020	190	No	INC	10	14:00	0:00
220	RT	Unit Testing	PGAE	NA	1/11/2020	130 - 190	No	INC	17	0:00	16:30
221	RT	Unit Testing	SCE	Big Creek-Ventura	1/10/2020	48	No	INC	1	21:20	22:20
222	RT	Unit Testing	SCE	Big Creek-Ventura	1/26/2020	76 - 80	No	INC	6	18:30	0:00
223	RT	Unit Testing	SCE	Big Creek-Ventura	1/27/2020	76	No	INC	2	0:00	2:00
224	RT	Unit Testing	SCE	LA Basin	1/25/2020	46.9 - 47	No	INC	1	4:20	5:00
225	RT	Unit Testing	SCE	LA Basin	1/31/2020	97	No	INC	1	7:30	8:30
226	RT	Unit Testing	SCE	NA	1/1/2020	650 - 674	No	INC	24	0:00	0:00
227	RT	Unit Testing	SCE	NA	1/2/2020	480 - 674	No	INC	24	0:00	0:00
228	RT	Unit Testing	SCE	NA	1/3/2020	480 - 677	No	INC	21	0:00	21:00
229	RT	Unit Testing	SCE	NA	1/4/2020	143 - 612	No	INC	16	8:35	0:00
230	RT	Unit Testing	SCE	NA	1/5/2020	143 - 677	No	INC	14	0:00	13:30
231	RT	Unit Testing	SCE	NA	1/7/2020	260 - 475	No	INC	14	10:00	0:00
232	RT	Unit Testing	SCE	NA	1/8/2020	150 - 475	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
233	RT	Unit Testing	SCE	NA	1/9/2020	225 - 475	No	INC	24	0:00	0:00
234	RT	Unit Testing	SCE	NA	1/10/2020	260 - 669	No	INC	24	0:35	0:00
235	RT	Unit Testing	SCE	NA	1/11/2020	160 - 669	No	INC	24	0:00	0:00
236	RT	Unit Testing	SCE	NA	1/12/2020	180 - 534	No	INC	24	0:00	0:00
237	RT	Unit Testing	SCE	NA	1/13/2020	300 - 510	No	INC	24	0:00	0:00
238	RT	Unit Testing	SCE	NA	1/14/2020	140 - 680	No	INC	17	7:00	0:00
239	RT	Unit Testing	SCE	NA	1/15/2020	0 - 680	No	INC	24	0:00	0:00
240	RT	Unit Testing	SCE	NA	1/16/2020	400 - 660	No	INC	24	0:00	0:00
241	RT	Unit Testing	SCE	NA	1/17/2020	292 - 669	No	INC	24	0:00	0:00
242	RT	Unit Testing	SCE	NA	1/18/2020	309 - 669	No	INC	24	0:00	0:00
243	RT	Unit Testing	SCE	NA	1/19/2020	309 - 669	No	INC	24	0:00	0:00
244	RT	Unit Testing	SCE	NA	1/20/2020	138 - 678	No	INC	24	0:00	0:00
245	RT	Unit Testing	SCE	NA	1/21/2020	304 - 678	No	INC	24	0:00	0:00
246	RT	Unit Testing	SCE	NA	1/22/2020	200 - 680	No	INC	18	6:15	0:00
247	RT	Unit Testing	SCE	NA	1/23/2020	0 - 680	No	INC	18	6:25	0:00
248	RT	Unit Testing	SCE	NA	1/24/2020	135 - 680	No	INC	16	0:00	15:30
249	RT	Unit Testing	SCE	NA	1/26/2020	304 - 660	No	INC	18	6:05	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
250	RT	Unit Testing	SCE	NA	1/27/2020	142 - 669	No	INC	24	0:00	0:00
251	RT	Unit Testing	SCE	NA	1/28/2020	0 - 660	No	INC	6	5:40	11:00
252	RT	Unit Testing	SCE	NA	1/30/2020	133 - 670	No	INC	9	15:00	0:00
253	RT	Unit Testing	SCE	NA	1/31/2020	285 - 350	No	INC	24	0:00	0:00
254	RT	Unit Testing	SDGE	San Diego-IV	1/10/2020	316	No	INC	1	23:20	23:35
255	RT	Voltage Support	PGAE	Fresno	1/2/2020	-306	No	DEC	2	3:00	5:00
256	RT	Voltage Support	PGAE	Fresno	1/5/2020	-307	No	DEC	4	2:00	6:00
257	RT	Voltage Support	PGAE	Fresno	1/10/2020	-307	No	DEC	2	2:10	4:00
258	RT	Voltage Support	PGAE	Fresno	1/12/2020	-303	No	DEC	8	1:00	9:00
259	RT	Voltage Support	PGAE	Fresno	1/13/2020	-306	No	DEC	4	1:35	5:00
260	RT	Voltage Support	PGAE	Fresno	1/19/2020	83	No	INC	8	0:25	8:00
261	RT	Voltage Support	PGAE	Fresno	1/20/2020	83	No	INC	5	2:05	7:00
262	RT	Voltage Support	PGAE	Fresno	1/23/2020	-310	No	DEC	6	0:15	5:30
263	RT	Voltage Support	PGAE	Fresno	1/24/2020	-313	No	DEC	5	1:10	6:00
264	RT	Voltage Support	PGAE	Fresno	1/30/2020	83	No	INC	3	2:10	5:00
265	RT	Voltage Support	PGAE	Fresno	1/31/2020	83	No	INC	5	1:30	6:00
266	RT	Voltage Support	PGAE	NA	1/14/2020	50	No	INC	5	1:05	6:00
267	RT	Voltage Support	PGAE	NA	1/15/2020	50	No	DEC	1	5:00	6:00
268	RT	Voltage Support	PGAE	NA	1/15/2020	50	No	INC	5	0:15	5:00



## 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