



Exceptional Dispatch Report

Table 1: December 2019

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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 2019.

The Nature of Exceptional Dispatch

The CAISO can issue exceptional dispatch instructions for a resource as a pre-day-ahead unit commitment, which may also include an indicative exceptional dispatch energy schedule, a post-day-ahead unit commitment, or a real-time exceptional dispatch.¹ A pre-day-ahead commitment is an exceptional dispatch instruction that commits a resource at or above its physical minimum operating level in the day-ahead market. A post-day-ahead market commitment is an exceptional dispatch instruction that commits a resource at or above its physical minimum operating level in the real-time market. A real-time exceptional dispatch instruction is a dispatch of a resource at or above its physical minimum operating point. A real-time exceptional dispatch above the resource day-ahead award is an incremental exceptional dispatch instruction and an exceptional dispatch below the day-ahead award is a decremental dispatch instruction.

The CAISO issues exceptional dispatch instructions to maintain the reliability of the grid when the market software cannot do so. Whenever the CAISO issues an exceptional dispatch instruction, the operator logs the dispatch and the associated reason.

Many of the exceptional dispatches listed below in Table 1, were to satisfy either a local area or system reliability requirements, and are classified into local generation requirements, transmission management requirements, non-modeled transmission outages or other non-modeled constraints or requirements and intertie emergency assistance. All of the transmission procedures are available on the CAISO website.²

The following reason for exceptional dispatch instructions in December 2019 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 2019, 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 288 exceptional dispatches in December 2019, as compared to 245 exceptional dispatches in November 2019. Exceptional dispatches issued for the following reasons accounted for approximately 84 percent of the total exceptional dispatches during the reporting period: planned

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.

transmission outages, reliability assement, 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 7720 and 7820).

Table 1: Exceptional Dispatches in December 2019

**California Independent System Operator Corporation
Exceptional Dispatch Report
February 18, 2020**

Chart 1: Table of Exceptional Dispatches for Period 01/December/2019 - 31/December/2019

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	Bay Area	12/23/2019	0	No	INC	2	2:15	3:20
2	RT	Fast Start Unit Management	PGAE	Bay Area	12/26/2019	0	No	INC	2	4:00	5:05
3	RT	Fast Start Unit Management	SCE	LA Basin	12/23/2019	0	No	INC	1	0:15	0:45
4	RT	Fast Start Unit Management	SDGE	San Diego-IV	12/15/2019	0	No	INC	5	19:45	0:00
5	RT	Gas Limitations	PGAE	Bay Area	12/14/2019	120	No	INC	1	23:05	23:20
6	RT	Gas Limitations	SCE	LA Basin	12/14/2019	5 - 48.64	No	INC	1	23:05	23:20
7	RT	Gas Limitations	SCE	LA Basin	12/22/2019	5 - 44.89	No	INC	1	21:00	21:50
8	RT	Gas Limitations	SDGE	San Diego-IV	12/14/2019	30	No	INC	1	23:05	23:20
9	RT	Incomplete or Inaccurate Transmission	PGAE	Humboldt	12/16/2019	15 - 30	No	DEC	14	5:00	18:15
10	RT	Incomplete or Inaccurate Transmission	PGAE	Humboldt	12/16/2019	15 - 45	No	INC	20	4:00	0:00
11	RT	Incomplete or Inaccurate Transmission	PGAE	Humboldt	12/17/2019	45	No	INC	24	0:00	0:00
12	RT	Incomplete or Inaccurate Transmission	PGAE	Humboldt	12/18/2019	45	No	INC	1	0:00	0:30
13	RT	Incomplete or Inaccurate Transmission	SDGE	San Diego-IV	12/11/2019	50 - 317	No	DEC	4	16:00	20:00
14	RT	Incomplete or Inaccurate Transmission	SDGE	San Diego-IV	12/11/2019	50 - 317	No	INC	10	12:05	22:00
15	RT	Load Forecast Uncertainty	PGAE	NA	12/26/2019	98	No	DEC	1	11:30	12:30
16	RT	Load Forecast Uncertainty	SCE	LA Basin	12/17/2019	255	No	INC	4	17:00	21:00
17	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	12/17/2019	161	No	INC	7	15:30	22:00
18	RT	Other Reliability Requirement	PGAE	Bay Area	12/26/2019	120 - 135	No	INC	1	1:35	2:35
19	RT	Other Reliability Requirement	PGAE	Fresno	12/22/2019	407	No	INC	1	21:00	21:10
20	RT	Other Reliability Requirement	SCE	LA Basin	12/26/2019	47 - 150	No	INC	1	1:30	1:45

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	12/2/2019	32	No	INC	7	17:40	0:00
22	RT	Planned Transmission Outage	PGAE	Humboldt	12/3/2019	32 - 47	No	DEC	3	5:00	8:00
23	RT	Planned Transmission Outage	PGAE	Humboldt	12/3/2019	32	No	INC	5	0:00	5:00
24	RT	Planned Transmission Outage	PGAE	Humboldt	12/6/2019	15 - 30	No	DEC	15	5:35	20:00
25	RT	Planned Transmission Outage	PGAE	Humboldt	12/6/2019	15 - 30	No	INC	10	5:40	15:00
26	RT	Planned Transmission Outage	PGAE	Humboldt	12/13/2019	30	No	INC	1	23:25	0:00
27	RT	Planned Transmission Outage	PGAE	Humboldt	12/14/2019	30 - 45	No	INC	24	0:00	0:00
28	RT	Planned Transmission Outage	PGAE	Humboldt	12/15/2019	15 - 32	No	DEC	8	16:00	0:00
29	RT	Planned Transmission Outage	PGAE	Humboldt	12/15/2019	32 - 48	No	INC	24	0:00	0:00
30	RT	Planned Transmission Outage	PGAE	Humboldt	12/16/2019	15 - 64	No	INC	24	0:00	0:00
31	RT	Planned Transmission Outage	PGAE	Humboldt	12/17/2019	32 - 62	No	INC	24	0:00	0:00
32	RT	Planned Transmission Outage	PGAE	Humboldt	12/18/2019	48	No	INC	1	0:00	0:15
33	RT	Planned Transmission Outage	PGAE	Humboldt	12/19/2019	32 - 48	No	DEC	8	15:00	23:00
34	RT	Planned Transmission Outage	PGAE	Humboldt	12/19/2019	16 - 48	No	INC	19	5:35	0:00
35	RT	Planned Transmission Outage	PGAE	Humboldt	12/20/2019	16	No	DEC	1	1:30	2:30
36	RT	Planned Transmission Outage	PGAE	Humboldt	12/20/2019	16 - 48	No	INC	24	0:00	0:00
37	RT	Planned Transmission Outage	PGAE	Humboldt	12/21/2019	15 - 16	No	DEC	24	0:30	0:00
38	RT	Planned Transmission Outage	PGAE	Humboldt	12/21/2019	15 - 45	No	INC	24	0:00	0:00
39	RT	Planned Transmission Outage	PGAE	Humboldt	12/22/2019	16	No	DEC	6	0:00	5:45
40	RT	Planned Transmission Outage	PGAE	Humboldt	12/22/2019	16 - 32	No	INC	13	0:00	12:45
41	RT	Planned Transmission Outage	PGAE	Stockton	12/1/2019	90	No	DEC	24	0:00	0:00
42	RT	Planned Transmission Outage	PGAE	Stockton	12/2/2019	90	No	DEC	24	0:00	0:00
43	RT	Planned Transmission Outage	PGAE	Stockton	12/3/2019	90	No	DEC	24	0:00	0:00
44	RT	Planned Transmission Outage	PGAE	Stockton	12/4/2019	90	No	DEC	24	0:00	0:00
45	RT	Planned Transmission Outage	PGAE	Stockton	12/5/2019	90	No	DEC	24	0:00	0:00
46	RT	Planned Transmission Outage	PGAE	Stockton	12/6/2019	90	No	DEC	24	0:00	0:00
47	RT	Planned Transmission Outage	PGAE	Stockton	12/7/2019	90	No	DEC	24	0:00	0:00
48	RT	Planned Transmission Outage	PGAE	Stockton	12/8/2019	90	No	DEC	24	0:00	0:00
49	RT	Planned Transmission Outage	PGAE	Stockton	12/8/2019	90	No	INC	11	3:00	14:00

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	12/9/2019	90	No	DEC	24	0:00	0:00
51	RT	Planned Transmission Outage	PGAE	Stockton	12/9/2019	90	No	INC	1	12:00	13:00
52	RT	Planned Transmission Outage	PGAE	Stockton	12/10/2019	90	No	DEC	24	0:00	0:00
53	RT	Planned Transmission Outage	PGAE	Stockton	12/11/2019	90	No	DEC	24	0:00	0:00
54	RT	Planned Transmission Outage	PGAE	Stockton	12/12/2019	90	No	DEC	24	0:00	0:00
55	RT	Planned Transmission Outage	PGAE	Stockton	12/13/2019	90	No	DEC	24	0:00	0:00
56	RT	Planned Transmission Outage	PGAE	Stockton	12/14/2019	90	No	DEC	24	0:00	0:00
57	RT	Planned Transmission Outage	PGAE	Stockton	12/14/2019	90	No	INC	11	3:00	14:00
58	RT	Planned Transmission Outage	PGAE	Stockton	12/15/2019	90	No	DEC	21	3:00	0:00
59	RT	Planned Transmission Outage	PGAE	Stockton	12/15/2019	90	No	INC	15	0:00	15:00
60	RT	Planned Transmission Outage	PGAE	Stockton	12/16/2019	90	No	DEC	24	0:00	0:00
61	RT	Planned Transmission Outage	PGAE	Stockton	12/17/2019	90	No	DEC	24	0:00	0:00
62	RT	Planned Transmission Outage	PGAE	Stockton	12/18/2019	90	No	DEC	24	0:00	0:00
63	RT	Planned Transmission Outage	PGAE	Stockton	12/19/2019	90	No	DEC	24	0:00	0:00
64	RT	Planned Transmission Outage	PGAE	Stockton	12/20/2019	90	No	DEC	24	0:00	0:00
65	RT	Planned Transmission Outage	PGAE	Stockton	12/21/2019	90	No	DEC	24	0:00	0:00
66	RT	Planned Transmission Outage	PGAE	Stockton	12/21/2019	90	No	INC	4	10:00	14:00
67	RT	Planned Transmission Outage	PGAE	Stockton	12/22/2019	90	No	DEC	24	0:00	0:00
68	RT	Planned Transmission Outage	PGAE	Stockton	12/23/2019	90	No	DEC	24	0:00	0:00
69	RT	Planned Transmission Outage	PGAE	Stockton	12/24/2019	90	No	DEC	24	0:00	0:00
70	RT	Planned Transmission Outage	PGAE	Stockton	12/25/2019	90	No	DEC	24	0:00	0:00
71	RT	Planned Transmission Outage	PGAE	Stockton	12/26/2019	90	No	DEC	24	0:00	0:00
72	RT	Planned Transmission Outage	PGAE	Stockton	12/27/2019	90	No	DEC	24	0:00	0:00
73	RT	Planned Transmission Outage	PGAE	Stockton	12/27/2019	90	No	INC	5	10:00	15:00
74	RT	Planned Transmission Outage	PGAE	Stockton	12/28/2019	90	No	DEC	24	0:00	0:00
75	RT	Planned Transmission Outage	PGAE	Stockton	12/28/2019	90	No	INC	6	9:00	15:00
76	RT	Planned Transmission Outage	PGAE	Stockton	12/29/2019	90	No	DEC	24	0:00	0:00
77	RT	Planned Transmission Outage	PGAE	Stockton	12/29/2019	90	No	INC	4	10:00	14:00
78	RT	Planned Transmission Outage	PGAE	Stockton	12/30/2019	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	12/31/2019	90	No	DEC	24	0:00	0:00
80	RT	Planned Transmission Outage	PGAE	Stockton	12/31/2019	90	No	INC	4	10:00	14:00
81	RT	Planned Transmission Outage	PGAE	NA	12/11/2019	103	No	DEC	6	0:05	5:30
82	RT	Planned Transmission Outage	SCE	LA Basin	12/1/2019	300	No	DEC	7	11:15	17:30
83	RT	Planned Transmission Outage	SCE	LA Basin	12/2/2019	261 - 264	No	DEC	13	7:00	20:00
84	RT	Planned Transmission Outage	SCE	LA Basin	12/2/2019	98 - 210	No	INC	3	21:45	0:00
85	RT	Planned Transmission Outage	SCE	LA Basin	12/7/2019	261	No	DEC	14	8:00	22:00
86	RT	Planned Transmission Outage	SCE	LA Basin	12/7/2019	98 - 261	No	INC	3	5:00	8:00
87	RT	Planned Transmission Outage	SCE	LA Basin	12/8/2019	98 - 264	No	INC	12	8:00	20:00
88	RT	Planned Transmission Outage	SCE	LA Basin	12/10/2019	350	No	DEC	1	16:45	17:15
89	RT	Planned Transmission Outage	SCE	LA Basin	12/10/2019	536	No	INC	10	7:35	16:45
90	RT	Planned Transmission Outage	SCE	LA Basin	12/11/2019	390	No	DEC	4	12:00	16:00
91	RT	Planned Transmission Outage	SCE	LA Basin	12/11/2019	530	No	INC	5	11:30	16:00
92	RT	Planned Transmission Outage	SCE	LA Basin	12/12/2019	98	No	INC	1	5:00	6:00
93	RT	Planned Transmission Outage	SCE	LA Basin	12/13/2019	210 - 251	No	INC	15	6:00	21:00
94	RT	Planned Transmission Outage	SCE	LA Basin	12/14/2019	98 - 251	No	INC	17	4:00	21:00
95	RT	Planned Transmission Outage	SCE	LA Basin	12/15/2019	98	No	INC	10	6:00	16:00
96	RT	Planned Transmission Outage	SCE	LA Basin	12/20/2019	10	No	INC	11	13:00	0:00
97	RT	Planned Transmission Outage	SCE	NA	12/9/2019	180 - 239	No	DEC	8	16:00	0:00
98	RT	Planned Transmission Outage	SCE	NA	12/10/2019	239	No	DEC	8	0:00	8:00
99	RT	Planned Transmission Outage	SCE	NA	12/20/2019	300 - 360	No	DEC	7	17:00	0:00
100	RT	Planned Transmission Outage	SCE	NA	12/21/2019	360	No	DEC	7	0:00	7:00
101	RT	Planned Transmission Outage	SCE	NA	12/21/2019	360	No	INC	1	7:00	8:00
102	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/11/2019	162 - 228	No	DEC	1	7:30	8:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
103	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/11/2019	162 - 228	No	INC	3	8:00	10:45
104	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/12/2019	72	No	DEC	1	17:00	18:00
105	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/12/2019	72	No	INC	6	13:00	19:00
106	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/13/2019	314	No	DEC	2	17:00	19:00
107	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/13/2019	200 - 314	No	INC	8	12:30	20:00
108	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/14/2019	375	No	DEC	3	16:00	19:00
109	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/14/2019	375	No	INC	9	11:45	20:00
110	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/18/2019	155 - 603	No	INC	8	12:00	20:00
111	RT	Planned Transmission Outage	SDGE	San Diego-IV	12/19/2019	40	No	INC	13	9:40	22:00
112	RT	Reliability Assessment	PGAE	Humboldt	12/3/2019	15 - 30	No	INC	4	20:00	23:45
113	RT	Reliability Assessment	PGAE	Humboldt	12/4/2019	16 - 32	No	INC	18	6:15	23:45
114	RT	Reliability Assessment	PGAE	Humboldt	12/5/2019	15 - 30	No	INC	17	6:15	22:30
115	RT	Reliability Assessment	PGAE	Humboldt	12/7/2019	15	No	DEC	12	8:50	20:00
116	RT	Reliability Assessment	PGAE	Humboldt	12/7/2019	15	No	INC	19	1:00	20:00
117	RT	Reliability Assessment	PGAE	Humboldt	12/9/2019	15	No	INC	2	22:00	0:00
118	RT	Reliability Assessment	PGAE	Humboldt	12/10/2019	15	No	DEC	8	15:00	23:00
119	RT	Reliability Assessment	PGAE	Humboldt	12/10/2019	15	No	INC	24	0:00	0:00
120	RT	Reliability Assessment	PGAE	Humboldt	12/11/2019	16	No	DEC	1	21:35	22:00
121	RT	Reliability Assessment	PGAE	Humboldt	12/11/2019	15 - 30	No	INC	24	0:00	0:00
122	RT	Reliability Assessment	PGAE	Humboldt	12/12/2019	15 - 16	No	INC	24	0:00	0:00
123	RT	Reliability Assessment	PGAE	Humboldt	12/13/2019	15	No	DEC	1	6:00	6:55
124	RT	Reliability Assessment	PGAE	Humboldt	12/13/2019	15 - 45	No	INC	24	0:00	0:00
125	RT	Reliability Assessment	PGAE	Humboldt	12/14/2019	15	No	DEC	1	0:15	0:45
126	RT	Reliability Assessment	PGAE	Humboldt	12/14/2019	30 - 45	No	INC	21	0:00	20:45
127	RT	Reliability Assessment	PGAE	Humboldt	12/18/2019	32 - 48	No	DEC	7	15:00	22:00
128	RT	Reliability Assessment	PGAE	Humboldt	12/18/2019	32 - 48	No	INC	24	0:15	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
129	RT	Reliability Assessment	PGAE	Humboldt	12/19/2019	16	No	DEC	4	2:45	6:00
130	RT	Reliability Assessment	PGAE	Humboldt	12/19/2019	0 - 48	No	INC	3	0:00	2:45
131	RT	Reliability Assessment	PGAE	Humboldt	12/22/2019	15	No	DEC	1	12:45	13:00
132	RT	Reliability Assessment	PGAE	Humboldt	12/22/2019	30	No	INC	3	17:00	20:00
133	RT	Reliability Assessment	PGAE	Humboldt	12/23/2019	15 - 45	No	INC	3	21:00	0:00
134	RT	Reliability Assessment	PGAE	Humboldt	12/24/2019	15	No	INC	2	0:00	2:00
135	RT	Reliability Assessment	PGAE	Humboldt	12/26/2019	30 - 45	No	INC	17	7:25	0:00
136	RT	Reliability Assessment	PGAE	Humboldt	12/27/2019	15 - 30	No	INC	22	0:00	22:00
137	RT	Reliability Assessment	PGAE	Humboldt	12/28/2019	0 - 16	No	INC	6	18:20	23:45
138	RT	Reliability Assessment	PGAE	Humboldt	12/29/2019	16	No	INC	4	18:00	21:15
139	RT	Reliability Assessment	PGAE	Humboldt	12/30/2019	14 - 16	No	INC	20	4:45	0:00
140	RT	Reliability Assessment	PGAE	NCNB	12/12/2019	22	No	DEC	1	9:30	9:55
141	RT	Reliability Assessment	SCE	Big Creek-Ventura	12/18/2019	650 - 700	No	DEC	6	18:35	0:00
142	RT	Reliability Assessment	SCE	Big Creek-Ventura	12/19/2019	650 - 750	No	DEC	7	0:00	7:00
143	RT	Reliability Assessment	SCE	LA Basin	12/5/2019	20	No	INC	8	12:40	20:00
144	RT	Reliability Assessment	SCE	LA Basin	12/10/2019	380	No	DEC	3	14:15	16:30
145	RT	Reliability Assessment	SCE	NA	12/6/2019	350 - 400	No	DEC	8	16:05	0:00
146	RT	Reliability Assessment	SCE	NA	12/7/2019	350	No	DEC	7	0:00	7:00
147	RT	Reliability Assessment	SCE	NA	12/7/2019	350	No	INC	1	7:00	8:00
148	RT	Reliability Assessment	SCE	NA	12/10/2019	50 - 325	No	DEC	16	8:20	0:00
149	RT	Reliability Assessment	SCE	NA	12/10/2019	50 - 125	No	INC	6	8:30	14:30
150	RT	Reliability Assessment	SCE	NA	12/11/2019	325	No	DEC	2	6:00	8:00
151	RT	Reliability Assessment	SCE	NA	12/11/2019	180 - 325	No	INC	10	0:00	10:00
152	RT	Reliability Assessment	SCE	NA	12/16/2019	300 - 350	No	DEC	8	16:00	0:00
153	RT	Reliability Assessment	SCE	NA	12/16/2019	300	No	INC	1	15:45	16:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
154	RT	Reliability Assessment	SCE	NA	12/17/2019	350 - 400	No	DEC	8	0:00	8:00
155	RT	Reliability Assessment	SCE	NA	12/21/2019	360	No	INC	7	17:00	0:00
156	RT	Reliability Assessment	SCE	NA	12/22/2019	360	No	INC	12	0:00	12:00
157	RT	Reliability Assessment	SCE	NA	12/27/2019	350	No	DEC	7	17:10	0:00
158	RT	Reliability Assessment	SCE	NA	12/28/2019	350	No	DEC	6	0:00	6:00
159	RT	Reliability Assessment	SCE	NA	12/28/2019	350	No	INC	2	6:00	8:00
160	RT	Reliability Assessment	SCE	NA	12/30/2019	390 - 410	No	DEC	7	17:00	0:00
161	RT	Reliability Assessment	SCE	NA	12/31/2019	390 - 410	No	DEC	7	0:00	7:00
162	RT	Reliability Assessment	SCE	NA	12/31/2019	410	No	INC	1	7:00	8:00
163	RT	Reliability Assessment	SDGE	San Diego-IV	12/1/2019	72 - 100	No	INC	4	12:25	16:00
164	RT	Reliability Assessment	SDGE	San Diego-IV	12/4/2019	0	No	DEC	9	9:20	18:00
165	RT	Reliability Assessment	SDGE	San Diego-IV	12/4/2019	0 - 317	No	INC	5	17:00	22:00
166	RT	Reliability Assessment	SDGE	San Diego-IV	12/5/2019	40 - 350	No	INC	11	9:10	20:00
167	RT	Reliability Assessment	SDGE	San Diego-IV	12/6/2019	24	No	DEC	4	16:00	20:00
168	RT	Reliability Assessment	SDGE	San Diego-IV	12/6/2019	24 - 47.01	No	INC	10	10:40	20:00
169	RT	Reliability Assessment	SDGE	San Diego-IV	12/7/2019	48	No	INC	5	9:40	14:15
170	RT	Reliability Assessment	SDGE	San Diego-IV	12/18/2019	40 - 320	No	INC	14	7:40	21:15
171	RT	Reliability Assessment	SDGE	San Diego-IV	12/19/2019	212	No	INC	13	7:15	20:00
172	RT	Reliability Assessment	SDGE	San Diego-IV	12/20/2019	40	No	INC	6	6:35	12:30
173	RT	Reliability Assessment	SDGE	San Diego-IV	12/23/2019	40	No	INC	12	8:45	20:00
174	RT	Reliability Assessment	SDGE	San Diego-IV	12/30/2019	40	No	INC	10	14:15	0:00
175	RT	Reliability Assessment	SDGE	San Diego-IV	12/31/2019	40	No	INC	1	0:00	1:00
176	RT	Software Limitation	PGAE	Bay Area	12/15/2019	0	No	INC	2	1:45	2:50
177	RT	Software Limitation	PGAE	Bay Area	12/19/2019	0	No	INC	2	11:45	13:20
178	RT	Software Limitation	PGAE	Bay Area	12/22/2019	120	No	INC	1	21:00	21:50

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
179	RT	Software Limitation	PGAE	Humboldt	12/3/2019	0	No	INC	1	23:45	0:00
180	RT	Software Limitation	PGAE	Humboldt	12/4/2019	0	No	INC	1	0:00	0:45
181	RT	Software Limitation	PGAE	Humboldt	12/6/2019	60	No	INC	1	23:15	0:00
182	RT	Software Limitation	PGAE	Humboldt	12/7/2019	60	No	INC	1	0:00	1:00
183	RT	Software Limitation	PGAE	Humboldt	12/16/2019	0	No	INC	1	1:30	2:30
184	RT	Software Limitation	PGAE	Humboldt	12/22/2019	0	No	INC	1	10:45	11:15
185	RT	Software Limitation	SCE	LA Basin	12/6/2019	194	No	INC	5	15:00	20:00
186	RT	Software Limitation	SCE	LA Basin	12/15/2019	0	No	INC	3	1:45	4:00
187	RT	Software Limitation	SCE	LA Basin	12/19/2019	0	No	INC	2	15:30	17:30
188	RT	Software Limitation	SCE	LA Basin	12/22/2019	48.04 - 48.39	No	INC	1	21:00	21:50
189	RT	Software Limitation	SCE	LA Basin	12/24/2019	0	No	INC	3	9:00	11:30
190	RT	Software Limitation	SDGE	San Diego-IV	12/12/2019	0	No	INC	3	9:35	12:10
191	RT	Software Limitation	SDGE	San Diego-IV	12/20/2019	0	No	INC	1	6:40	7:40
192	RT	Software Limitation	SDGE	San Diego-IV	12/22/2019	24	No	INC	13	9:20	22:00
193	RT	Unit Testing	Intertie	NA	12/4/2019	5 - 17	No	INC	6	10:00	16:00
194	RT	Unit Testing	Intertie	NA	12/5/2019	8 - 28	No	INC	10	6:00	16:00
195	RT	Unit Testing	Intertie	NA	12/6/2019	39 - 49	No	INC	10	6:00	16:00
196	RT	Unit Testing	Intertie	NA	12/7/2019	49	No	INC	10	6:00	16:00
197	RT	Unit Testing	Intertie	NA	12/8/2019	49	Yes	INC	5	6:00	11:00
198	RT	Unit Testing	Intertie	NA	12/9/2019	49	No	INC	10	6:00	16:00
199	RT	Unit Testing	Intertie	NA	12/10/2019	49	No	INC	10	6:00	16:00
200	RT	Unit Testing	Intertie	NA	12/11/2019	49	Yes	INC	10	6:00	16:00
201	RT	Unit Testing	Intertie	NA	12/13/2019	10 - 41	No	INC	10	6:00	16:00
202	RT	Unit Testing	Intertie	NA	12/14/2019	10 - 41	No	INC	10	6:00	16:00
203	RT	Unit Testing	Intertie	NA	12/15/2019	10 - 40	No	INC	10	6:00	16:00
204	RT	Unit Testing	Intertie	NA	12/17/2019	25 - 100	No	INC	10	6:00	16:00
205	RT	Unit Testing	Intertie	NA	12/18/2019	25 - 100	No	INC	10	6:00	16:00
206	RT	Unit Testing	Intertie	NA	12/19/2019	25 - 104	No	INC	10	6:00	16:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
207	RT	Unit Testing	Intertie	NA	12/20/2019	25 - 100	No	INC	5	6:00	11:00
208	RT	Unit Testing	Intertie	NA	12/21/2019	34 - 129	No	INC	10	6:00	16:00
209	RT	Unit Testing	Intertie	NA	12/22/2019	34 - 129	No	INC	10	6:00	16:00
210	RT	Unit Testing	Intertie	NA	12/23/2019	34 - 138	No	INC	10	6:00	16:00
211	RT	Unit Testing	Intertie	NA	12/24/2019	150	Yes	INC	9	7:00	16:00
212	RT	Unit Testing	Intertie	NA	12/25/2019	150	No	INC	9	7:00	16:00
213	RT	Unit Testing	Intertie	NA	12/26/2019	100	No	DEC	7	6:00	12:15
214	RT	Unit Testing	Intertie	NA	12/27/2019	34 - 138	No	INC	10	6:00	16:00
215	RT	Unit Testing	Intertie	NA	12/28/2019	34 - 134	No	INC	5	6:00	11:00
216	RT	Unit Testing	Intertie	NA	12/29/2019	34 - 138	No	INC	10	6:00	16:00
217	RT	Unit Testing	Intertie	NA	12/30/2019	34 - 138	No	INC	10	6:00	16:00
218	RT	Unit Testing	PGAE	Bay Area	12/16/2019	46	No	INC	2	14:50	16:00
219	RT	Unit Testing	PGAE	Bay Area	12/17/2019	46	No	INC	3	10:00	13:00
220	RT	Unit Testing	PGAE	Bay Area	12/23/2019	0 - 46	No	INC	9	10:05	19:00
221	RT	Unit Testing	PGAE	Bay Area	12/24/2019	0 - 95	No	INC	6	11:00	16:35
222	RT	Unit Testing	PGAE	Stockton	12/18/2019	5 - 72	No	INC	3	12:00	15:00
223	RT	Unit Testing	PGAE	NA	12/21/2019	170	No	INC	14	10:15	0:00
224	RT	Unit Testing	SCE	Big Creek-Ventura	12/14/2019	75	No	INC	5	19:15	0:00
225	RT	Unit Testing	SCE	Big Creek-Ventura	12/15/2019	75	No	INC	4	0:00	4:00
226	RT	Unit Testing	SCE	Big Creek-Ventura	12/18/2019	78	No	INC	10	14:25	0:00
227	RT	Unit Testing	SCE	Big Creek-Ventura	12/19/2019	78	No	INC	16	0:00	16:00
228	RT	Unit Testing	SCE	Big Creek-Ventura	12/20/2019	78	No	DEC	3	8:00	11:00
229	RT	Unit Testing	SCE	Big Creek-Ventura	12/20/2019	78	No	INC	2	11:00	12:45

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
230	RT	Unit Testing	SCE	Big Creek-Ventura	12/22/2019	78	No	DEC	5	19:00	0:00
231	RT	Unit Testing	SCE	Big Creek-Ventura	12/22/2019	78	No	INC	2	17:00	19:00
232	RT	Unit Testing	SCE	Big Creek-Ventura	12/23/2019	78	No	DEC	2	0:00	2:00
233	RT	Unit Testing	SCE	LA Basin	12/16/2019	15	No	INC	1	11:20	11:25
234	RT	Unit Testing	SCE	NA	12/5/2019	380	No	INC	5	19:10	0:00
235	RT	Unit Testing	SCE	NA	12/6/2019	265 - 570	No	INC	24	0:00	0:00
236	RT	Unit Testing	SCE	NA	12/7/2019	300 - 660	No	INC	24	0:00	0:00
237	RT	Unit Testing	SCE	NA	12/8/2019	150 - 430	No	INC	14	0:00	14:00
238	RT	Unit Testing	SCE	NA	12/9/2019	200 - 670	No	INC	16	8:05	0:00
239	RT	Unit Testing	SCE	NA	12/10/2019	144 - 340	No	INC	24	0:00	0:00
240	RT	Unit Testing	SCE	NA	12/11/2019	143 - 675	Yes	INC	24	0:00	0:00
241	RT	Unit Testing	SCE	NA	12/12/2019	200 - 650	No	INC	24	0:00	0:00
242	RT	Unit Testing	SCE	NA	12/13/2019	200 - 640	No	INC	24	0:00	0:00
243	RT	Unit Testing	SCE	NA	12/14/2019	250 - 674	Yes	INC	24	0:00	23:45
244	RT	Unit Testing	SCE	NA	12/16/2019	143 - 650	No	INC	12	12:50	0:00
245	RT	Unit Testing	SCE	NA	12/17/2019	385 - 675	No	INC	24	0:00	0:00
246	RT	Unit Testing	SCE	NA	12/18/2019	180 - 677	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
247	RT	Unit Testing	SCE	NA	12/19/2019	190 - 675	No	INC	24	0:00	0:00
248	RT	Unit Testing	SCE	NA	12/20/2019	480	No	INC	10	0:00	10:00
249	RT	Unit Testing	SCE	NA	12/22/2019	0 - 670	Yes	INC	12	12:40	0:00
250	RT	Unit Testing	SCE	NA	12/23/2019	670	No	INC	21	3:05	0:00
251	RT	Unit Testing	SCE	NA	12/24/2019	0 - 670	No	INC	22	0:00	21:30
252	RT	Unit Testing	SCE	NA	12/27/2019	185 - 670	No	INC	17	7:50	0:00
253	RT	Unit Testing	SCE	NA	12/28/2019	300 - 500	No	INC	3	0:00	2:15
254	RT	Unit Testing	SCE	NA	12/29/2019	144 - 670	No	INC	16	8:00	0:00
255	RT	Unit Testing	SCE	NA	12/30/2019	670 - 674	No	INC	24	0:00	0:00
256	RT	Unit Testing	SCE	NA	12/31/2019	300 - 674	No	INC	24	0:00	0:00
257	RT	Unplanned Outage	PGAE	Bay Area	12/14/2019	120 - 516	No	INC	1	23:20	0:00
258	RT	Unplanned Outage	PGAE	Bay Area	12/19/2019	120	No	INC	1	9:55	10:50
259	RT	Unplanned Outage	PGAE	Fresno	12/14/2019	83 - 300	No	INC	1	23:20	0:00
260	RT	Unplanned Outage	SCE	LA Basin	12/14/2019	5 - 147	No	INC	1	23:15	0:00
261	RT	Unplanned Outage	SCE	LA Basin	12/15/2019	147	No	INC	2	0:00	1:15
262	RT	Unplanned Outage	SCE	LA Basin	12/19/2019	5 - 48.69	No	INC	1	9:55	10:50
263	RT	Unplanned Outage	SDGE	San Diego-IV	12/14/2019	30	No	INC	1	23:20	23:55
264	RT	Voltage Support	PGAE	Fresno	12/1/2019	-303	No	DEC	8	1:20	9:00
265	RT	Voltage Support	PGAE	Fresno	12/2/2019	-304	No	DEC	6	0:15	5:45
266	RT	Voltage Support	PGAE	Fresno	12/7/2019	-303	No	DEC	23	1:50	0:00
267	RT	Voltage Support	PGAE	Fresno	12/8/2019	-303	No	DEC	7	0:00	7:00
268	RT	Voltage Support	PGAE	Fresno	12/9/2019	-303	No	DEC	5	0:00	5:00
269	RT	Voltage Support	PGAE	Fresno	12/10/2019	-303	No	DEC	5	1:00	5:30

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
270	RT	Voltage Support	PGAE	Fresno	12/11/2019	-304	No	DEC	4	1:45	5:30
271	RT	Voltage Support	PGAE	Fresno	12/14/2019	-303	No	DEC	5	3:00	8:00
272	RT	Voltage Support	PGAE	Fresno	12/15/2019	-303	No	DEC	6	2:15	8:00
273	RT	Voltage Support	PGAE	Fresno	12/18/2019	83	No	DEC	1	0:50	1:00
274	RT	Voltage Support	PGAE	Fresno	12/18/2019	83	No	INC	4	1:00	5:00
275	RT	Voltage Support	PGAE	Fresno	12/19/2019	-312	No	DEC	5	0:00	4:45
276	RT	Voltage Support	PGAE	Fresno	12/23/2019	-304	No	DEC	4	3:15	6:30
277	RT	Voltage Support	PGAE	Fresno	12/24/2019	-310	No	DEC	3	2:15	5:00
278	RT	Voltage Support	PGAE	Fresno	12/25/2019	-310	No	DEC	6	1:30	7:00
279	RT	Voltage Support	PGAE	Fresno	12/26/2019	-310	No	DEC	4	1:30	5:00
280	RT	Voltage Support	PGAE	Fresno	12/27/2019	-310	No	DEC	4	1:30	5:00
281	RT	Voltage Support	PGAE	Fresno	12/30/2019	83	No	INC	6	2:30	8:00
282	RT	Voltage Support	PGAE	NA	12/9/2019	48.95	No	DEC	1	23:35	0:00
283	RT	Voltage Support	PGAE	NA	12/10/2019	48.95 - 100	No	DEC	24	0:00	0:00
284	RT	Voltage Support	PGAE	NA	12/11/2019	100	No	DEC	1	0:00	0:30
285	RT	Voltage Support	PGAE	NA	12/13/2019	49	No	DEC	1	5:00	5:30
286	RT	Voltage Support	PGAE	NA	12/13/2019	49	No	INC	5	0:15	5:00
287	RT	Voltage Support	SCE	LA Basin	12/18/2019	46	No	DEC	2	17:00	19:00
288	RT	Voltage Support	SCE	LA Basin	12/18/2019	46	No	INC	15	6:00	21:00

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