



Exceptional Dispatch Report

Table 1: January 2023

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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 January 2023.

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 January 2023 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.aiso.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 2023, 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 253 exceptional dispatches in January 2023, as compared to 193 exceptional dispatches in December 2022. There were 14 exceptional dispatches issued as a pre-day-ahead commitment, 10 of these pre-

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.

day-ahead commitments were also issued as real-time exceptional dispatches. However, 4 of these did not translate into real-time exception dispatch.

Exceptional dispatches issued for the following reasons accounted for approximately 74 percent of the total exceptional dispatches during the reporting period: market disruption, planned transmission outages, reliability assessment 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. 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 January 2023

**California Independent System Operator Corporation
Exceptional Dispatch Report
March 15, 2023**

Chart 1: Table of Exceptional Dispatches for Period 01/January/2023 – 31/January/2023

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	Bridging Schedules	SCE	LA Basin	1/28/2023	132.76	No	INC	2	14:30	16:00
2	RT	Bridging Schedules	SCE	NA	1/10/2023	125	No	INC	2	22:00	0:00
3	RT	Conditions beyond the control of the CAISO	SCE	NA	1/11/2023	125	No	DEC	8	14:00	22:00
4	RT	Conditions beyond the control of the CAISO	SCE	NA	1/11/2023	125	No	INC	15	9:40	0:00
5	RT	Conditions beyond the control of the CAISO	SCE	NA	1/12/2023	125	No	DEC	24	0:00	0:00
6	RT	Conditions beyond the control of the CAISO	SCE	NA	1/12/2023	125	No	INC	3	11:00	14:00
7	RT	Conditions beyond the control of the CAISO	SCE	NA	1/13/2023	125	No	DEC	24	0:00	0:00
8	RT	Conditions beyond the control of the CAISO	SCE	NA	1/14/2023	125	No	DEC	24	0:00	0:00
9	RT	Conditions beyond the control of the CAISO	SCE	NA	1/15/2023	125	No	DEC	24	0:00	0:00
10	RT	Conditions beyond the control of the CAISO	SCE	NA	1/15/2023	125	No	INC	5	9:00	14:00
11	RT	Conditions beyond the control of the CAISO	SCE	NA	1/16/2023	125	No	DEC	24	0:00	23:20
12	RT	Conditions beyond the control of the CAISO	SCE	NA	1/16/2023	125	No	INC	5	10:00	15:00
13	RT	Conditions beyond the control of the CAISO	SCE	NA	1/17/2023	125	No	DEC	24	0:00	0:00
14	RT	Conditions beyond the control of the CAISO	SCE	NA	1/17/2023	125	No	INC	6	9:00	15:00
15	RT	Conditions beyond the control of the CAISO	SCE	NA	1/18/2023	125	No	DEC	24	0:00	0:00
16	RT	Conditions beyond the control of the CAISO	SCE	NA	1/18/2023	125	No	INC	5	9:00	14:00
17	RT	Fast Start Unit Management	PGAE	Fresno	1/5/2023	0	No	INC	1	2:20	3:20
18	RT	Fast Start Unit Management	PGAE	Fresno	1/23/2023	0	No	INC	1	0:30	1:00
19	RT	Fast Start Unit Management	PGAE	Fresno	1/24/2023	0	No	INC	1	4:55	5:55
20	RT	Load Forecast Uncertainty	PGAE	Bay Area	1/30/2023	54	No	INC	11	13:00	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
21	RT	Load Forecast Uncertainty	SCE	LA Basin	1/1/2023	150 - 194	No	INC	4	16:45	20:00
22	RT	Load Forecast Uncertainty	SCE	LA Basin	1/30/2023	20 - 98	No	INC	12	12:00	0:00
23	RT	Load Forecast Uncertainty	SCE	LA Basin	1/31/2023	20	No	INC	24	0:00	0:00
24	RT	Load Forecast Uncertainty	SCE	NA	1/19/2023	125	No	DEC	24	0:00	0:00
25	RT	Load Forecast Uncertainty	SCE	NA	1/19/2023	125	No	INC	5	10:00	15:00
26	RT	Planned Transmission Outage	PGAE	Fresno	1/28/2023	-330	No	DEC	2	22:00	0:00
27	RT	Planned Transmission Outage	PGAE	Fresno	1/29/2023	-330	No	DEC	7	0:00	6:30
28	RT	Planned Transmission Outage	PGAE	Humboldt	1/26/2023	14 - 15	No	DEC	14	10:00	0:00
29	RT	Planned Transmission Outage	PGAE	Humboldt	1/27/2023	15	No	DEC	22	0:00	22:00
30	RT	Planned Transmission Outage	PGAE	Humboldt	1/27/2023	15 - 30	No	INC	17	7:05	0:00
31	RT	Planned Transmission Outage	PGAE	Humboldt	1/28/2023	15 - 30	No	INC	24	0:00	0:00
32	RT	Planned Transmission Outage	PGAE	Humboldt	1/29/2023	15	No	DEC	4	20:55	0:00
33	RT	Planned Transmission Outage	PGAE	Humboldt	1/29/2023	30 - 60	No	INC	24	0:00	0:00
34	RT	Planned Transmission Outage	PGAE	Humboldt	1/30/2023	15 - 60	No	DEC	24	0:00	0:00
35	RT	Planned Transmission Outage	PGAE	Humboldt	1/30/2023	15 - 60	No	INC	16	0:00	16:00
36	RT	Planned Transmission Outage	PGAE	Humboldt	1/31/2023	15 - 30	No	DEC	24	0:00	0:00
37	RT	Planned Transmission Outage	PGAE	NCNB	1/17/2023	50	No	INC	1	8:00	8:15
38	RT	Planned Transmission Outage	PGAE	NCNB	1/20/2023	75	No	INC	4	8:20	12:00
39	RT	Planned Transmission Outage	PGAE	NCNB	1/24/2023	30	No	DEC	4	19:00	23:00
40	RT	Planned Transmission Outage	PGAE	NCNB	1/30/2023	70 - 72	No	DEC	17	7:15	0:00
41	RT	Planned Transmission Outage	PGAE	NCNB	1/31/2023	70 - 72	No	DEC	19	0:00	19:00
42	RT	Planned Transmission Outage	PGAE	NCNB	1/31/2023	70	No	INC	16	0:00	16:00
43	RT	Planned Transmission Outage	PGAE	Sierra	1/17/2023	20	No	DEC	11	9:00	20:00
44	RT	Planned Transmission Outage	PGAE	Sierra	1/17/2023	20	No	INC	9	7:55	16:00
45	RT	Planned Transmission Outage	PGAE	Sierra	1/18/2023	20	No	DEC	4	16:00	20:00
46	RT	Planned Transmission Outage	PGAE	Sierra	1/18/2023	20 - 42	No	INC	8	8:45	16:00
47	RT	Planned Transmission Outage	PGAE	Sierra	1/23/2023	20	No	DEC	8	16:00	0:00
48	RT	Planned Transmission Outage	PGAE	Sierra	1/23/2023	20	No	INC	8	8:25	16:00
49	RT	Planned Transmission Outage	PGAE	Sierra	1/24/2023	20	No	DEC	23	0:00	23:00

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	Sierra	1/24/2023	20	No	INC	16	8:30	0:00
51	RT	Planned Transmission Outage	PGAE	Sierra	1/25/2023	20	No	DEC	17	5:00	22:00
52	RT	Planned Transmission Outage	PGAE	Sierra	1/25/2023	20	No	INC	24	0:00	0:00
53	RT	Planned Transmission Outage	PGAE	Sierra	1/26/2023	20	No	INC	24	0:00	0:00
54	RT	Planned Transmission Outage	PGAE	Sierra	1/27/2023	20	No	INC	10	0:00	10:00
55	RT	Planned Transmission Outage	PGAE	Sierra	1/30/2023	0	No	DEC	8	16:45	0:00
56	RT	Planned Transmission Outage	PGAE	Sierra	1/30/2023	42	No	INC	8	8:55	16:45
57	RT	Planned Transmission Outage	PGAE	Sierra	1/31/2023	0 - 20	No	DEC	19	0:00	19:00
58	RT	Planned Transmission Outage	PGAE	Sierra	1/31/2023	0 - 20	No	INC	10	6:00	16:00
59	RT	Planned Transmission Outage	SDGE	San Diego-IV	1/14/2023	37	No	INC	1	7:15	8:00
60	RT	Pump Management	PGAE	Fresno	1/2/2023	0	No	INC	1	22:00	23:00
61	RT	Ramping Capacity	PGAE	Fresno	1/24/2023	0	No	INC	3	4:55	7:55
62	RT	Ramping Capacity	SCE	LA Basin	1/4/2023	194	No	INC	18	4:00	22:00
63	RT	Ramping Capacity	SCE	LA Basin	1/5/2023	190 - 194	No	INC	16	6:30	22:00
64	RT	Reliability Assessment	PGAE	Fresno	1/10/2023	83	No	INC	2	10:35	12:00
65	RT	Reliability Assessment	PGAE	Fresno	1/26/2023	23	No	INC	1	17:45	18:30
66	RT	Reliability Assessment	PGAE	Humboldt	1/1/2023	15	No	DEC	24	0:00	0:00
67	RT	Reliability Assessment	PGAE	Humboldt	1/1/2023	15	No	INC	24	0:00	0:00
68	RT	Reliability Assessment	PGAE	Humboldt	1/2/2023	15	No	DEC	24	0:00	0:00
69	RT	Reliability Assessment	PGAE	Humboldt	1/2/2023	15	No	INC	15	0:00	15:00
70	RT	Reliability Assessment	PGAE	Humboldt	1/3/2023	15	No	DEC	24	0:00	0:00
71	RT	Reliability Assessment	PGAE	Humboldt	1/4/2023	15 - 45	No	DEC	23	0:00	23:00
72	RT	Reliability Assessment	PGAE	Humboldt	1/4/2023	15 - 56	No	INC	24	0:00	0:00
73	RT	Reliability Assessment	PGAE	Humboldt	1/5/2023	30 - 60	No	DEC	19	4:00	23:00
74	RT	Reliability Assessment	PGAE	Humboldt	1/5/2023	30 - 56	No	INC	24	0:00	0:00
75	RT	Reliability Assessment	PGAE	Humboldt	1/6/2023	45	No	DEC	10	14:00	0:00
76	RT	Reliability Assessment	PGAE	Humboldt	1/6/2023	30 - 45	No	INC	24	0:00	0:00
77	RT	Reliability Assessment	PGAE	Humboldt	1/7/2023	30 - 45	No	INC	24	0:00	0:00
78	RT	Reliability Assessment	PGAE	Humboldt	1/8/2023	30 - 45	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
79	RT	Reliability Assessment	PGAE	Humboldt	1/9/2023	30 - 45	No	DEC	15	6:00	21:00
80	RT	Reliability Assessment	PGAE	Humboldt	1/9/2023	30 - 45	No	INC	24	0:00	0:00
81	RT	Reliability Assessment	PGAE	Humboldt	1/10/2023	30 - 60	No	INC	24	0:00	0:00
82	RT	Reliability Assessment	PGAE	Humboldt	1/11/2023	30 - 45	No	INC	24	0:00	0:00
83	RT	Reliability Assessment	PGAE	Humboldt	1/12/2023	45	No	DEC	1	17:00	18:00
84	RT	Reliability Assessment	PGAE	Humboldt	1/12/2023	30 - 45	No	INC	24	0:00	0:00
85	RT	Reliability Assessment	PGAE	Humboldt	1/13/2023	30 - 45	No	INC	24	0:00	0:00
86	RT	Reliability Assessment	PGAE	Humboldt	1/14/2023	30 - 45	No	INC	24	0:00	0:00
87	RT	Reliability Assessment	PGAE	Humboldt	1/15/2023	30 - 45	No	INC	24	0:00	0:00
88	RT	Reliability Assessment	PGAE	Humboldt	1/16/2023	30 - 45	No	INC	19	0:00	18:30
89	RT	Reliability Assessment	PGAE	Sierra	1/5/2023	44 - 48.9	No	DEC	6	18:40	0:00
90	RT	Reliability Assessment	PGAE	Sierra	1/6/2023	43 - 44	No	INC	18	0:00	17:30
91	RT	Reliability Assessment	SCE	NA	1/4/2023	125	No	INC	16	8:00	0:00
92	RT	Reliability Assessment	SCE	NA	1/5/2023	125	No	DEC	24	0:00	0:00
93	RT	Reliability Assessment	SCE	NA	1/6/2023	125	No	DEC	24	0:00	0:00
94	RT	Reliability Assessment	SCE	NA	1/6/2023	125	No	INC	6	9:00	15:00
95	RT	Reliability Assessment	SCE	NA	1/7/2023	125	No	DEC	12	0:05	12:00
96	RT	Reliability Assessment	SCE	NA	1/8/2023	0	No	DEC	1	13:45	14:10
97	RT	Reliability Assessment	SCE	NA	1/9/2023	10	No	INC	1	16:10	16:45
98	RT	Reliability Assessment	SCE	NA	1/11/2023	0 - 125	No	DEC	14	6:00	20:00
99	RT	Reliability Assessment	SCE	NA	1/11/2023	0 - 125	No	INC	23	0:00	22:30
100	RT	Reliability Assessment	SCE	NA	1/22/2023	375 - 440	No	DEC	5	19:30	0:00
101	RT	Reliability Assessment	SCE	NA	1/22/2023	475	No	INC	2	18:05	19:30
102	RT	Reliability Assessment	SCE	NA	1/23/2023	375 - 390	No	DEC	7	0:00	7:00
103	RT	Reliability Assessment	SCE	NA	1/23/2023	390	No	INC	1	7:00	8:00
104	RT	Reliability Assessment	SCE	NA	1/31/2023	380 - 390	No	DEC	8	16:45	0:00
105	RT	Reliability Assessment	SDGE	San Diego-IV	1/11/2023	-60	No	DEC	1	14:40	15:15
106	RT	Reliability Assessment	SDGE	NA	1/4/2023	50	No	DEC	1	11:30	12:00
107	RT	Software Limitation	PGAE	Fresno	1/12/2023	200	No	INC	1	18:45	18:50

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
108	RT	Software Limitation	PGAE	Fresno	1/14/2023	83	No	INC	1	19:00	19:30
109	RT	Software Limitation	PGAE	Fresno	1/22/2023	25.44	No	INC	1	19:10	20:05
110	RT	Software Limitation	PGAE	Fresno	1/24/2023	14 - 35	No	INC	1	2:10	3:05
111	RT	Software Limitation	PGAE	Fresno	1/29/2023	0	No	INC	4	10:45	14:15
112	RT	Software Limitation	SCE	Big Creek-Ventura	1/31/2023	0	No	INC	1	2:45	3:45
113	RT	Software Limitation	SCE	LA Basin	1/12/2023	500	No	DEC	2	18:40	20:00
114	RT	Software Limitation	SCE	LA Basin	1/18/2023	0	No	INC	13	4:15	17:00
115	RT	Software Limitation	SDGE	San Diego-IV	1/24/2023	30	No	INC	1	2:10	3:05
116	RT	Unit Testing	PGAE	Bay Area	1/4/2023	615	No	INC	1	0:25	0:55
117	RT	Unit Testing	PGAE	Bay Area	1/10/2023	0 - 529.51	No	INC	12	0:15	11:20
118	RT	Unit Testing	PGAE	Fresno	1/5/2023	68	No	INC	1	1:10	1:45
119	RT	Unit Testing	PGAE	Fresno	1/11/2023	59	No	INC	1	7:15	7:55
120	RT	Unit Testing	PGAE	Fresno	1/21/2023	404	No	INC	1	6:25	7:10
121	RT	Unit Testing	PGAE	NA	1/4/2023	49.76 - 621	No	INC	2	3:15	5:15
122	RT	Unit Testing	PGAE	NA	1/5/2023	244	No	DEC	1	23:45	0:00
123	RT	Unit Testing	PGAE	NA	1/6/2023	244	No	DEC	1	0:00	0:15
124	RT	Unit Testing	PGAE	NA	1/6/2023	55.18	No	INC	1	4:35	5:15
125	RT	Unit Testing	PGAE	NA	1/10/2023	458.3	No	DEC	1	15:35	16:20
126	RT	Unit Testing	PGAE	NA	1/19/2023	49.76	No	INC	1	8:45	9:25
127	RT	Unit Testing	SCE	Big Creek-Ventura	1/6/2023	46.27	No	INC	1	17:20	18:05
128	RT	Unit Testing	SCE	Big Creek-Ventura	1/11/2023	99.41	No	INC	1	5:20	6:00
129	RT	Unit Testing	SCE	Big Creek-Ventura	1/13/2023	4.76	No	INC	1	15:20	16:00
130	RT	Unit Testing	SCE	Big Creek-Ventura	1/31/2023	43.5	No	INC	1	0:50	1:35
131	RT	Unit Testing	SCE	LA Basin	1/4/2023	368.1	No	DEC	1	10:20	11:00
132	RT	Unit Testing	SCE	LA Basin	1/12/2023	43 - 556.7	No	INC	12	0:30	11:50
133	RT	Unit Testing	SCE	San Diego-IV	1/5/2023	2	No	INC	1	22:45	23:05
134	RT	Unit Testing	SCE	San Diego-IV	1/10/2023	3.4	No	DEC	1	7:00	7:15
135	RT	Unit Testing	SCE	San Diego-IV	1/10/2023	0 - 3.4	No	INC	6	1:15	7:00
136	RT	Unit Testing	SCE	San Diego-IV	1/28/2023	4	No	INC	1	23:20	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
137	RT	Unit Testing	SCE	NA	1/7/2023	39.88	No	INC	1	7:15	7:55
138	RT	Unit Testing	SCE	NA	1/18/2023	25	No	INC	1	17:15	17:55
139	RT	Unit Testing	SDGE	San Diego-IV	1/11/2023	247.4	No	INC	1	15:15	15:50
140	RT	Unit Testing	SDGE	San Diego-IV	1/12/2023	263.93	No	INC	1	1:30	2:10
141	RT	Unit Testing	SDGE	San Diego-IV	1/14/2023	7.5	No	INC	1	22:25	22:55
142	RT	Unplanned Outage	PGAE	Stockton	1/19/2023	65	No	DEC	4	16:55	20:00
143	RT	Unplanned Outage	SDGE	San Diego-IV	1/1/2023	155	No	INC	9	7:45	16:00
144	RT	Voltage Support	PGAE	Bay Area	1/25/2023	142	No	INC	5	10:00	15:00
145	RT	Voltage Support	PGAE	Bay Area	1/26/2023	141.02	No	INC	5	10:00	15:00
146	RT	Voltage Support	PGAE	Fresno	1/1/2023	-330	No	DEC	14	0:00	14:00
147	RT	Voltage Support	PGAE	Fresno	1/1/2023	83 - 85	Yes	INC	7	15:50	22:00
148	RT	Voltage Support	PGAE	Fresno	1/2/2023	-330	No	DEC	24	0:00	0:00
149	RT	Voltage Support	PGAE	Fresno	1/3/2023	-20	No	DEC	24	0:00	0:00
150	RT	Voltage Support	PGAE	Fresno	1/4/2023	-20	No	DEC	24	0:00	0:00
151	RT	Voltage Support	PGAE	Fresno	1/4/2023	83	Yes	INC	12	5:15	17:00
152	RT	Voltage Support	PGAE	Fresno	1/5/2023	-330	No	DEC	15	0:00	15:00
153	RT	Voltage Support	PGAE	Fresno	1/6/2023	-330	No	DEC	15	0:30	15:00
154	RT	Voltage Support	PGAE	Fresno	1/7/2023	-330	No	DEC	24	0:45	0:00
155	RT	Voltage Support	PGAE	Fresno	1/7/2023	0	No	INC	1	21:30	22:30
156	RT	Voltage Support	PGAE	Fresno	1/8/2023	-330	No	DEC	15	0:00	15:00
157	RT	Voltage Support	PGAE	Fresno	1/9/2023	-330	No	DEC	24	0:30	0:00
158	RT	Voltage Support	PGAE	Fresno	1/9/2023	0	No	INC	1	0:00	1:00
159	RT	Voltage Support	PGAE	Fresno	1/10/2023	-330	No	DEC	24	0:00	0:00
160	RT	Voltage Support	PGAE	Fresno	1/11/2023	-330	No	DEC	10	0:00	10:00
161	RT	Voltage Support	PGAE	Fresno	1/11/2023	0	No	INC	1	23:30	0:00
162	RT	Voltage Support	PGAE	Fresno	1/12/2023	-330	No	DEC	24	0:00	0:00
163	RT	Voltage Support	PGAE	Fresno	1/12/2023	0	No	INC	1	0:00	0:30
164	RT	Voltage Support	PGAE	Fresno	1/13/2023	-330	No	DEC	6	0:00	5:30
165	RT	Voltage Support	PGAE	Fresno	1/14/2023	-330	No	DEC	15	0:15	15:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
166	RT	Voltage Support	PGAE	Fresno	1/15/2023	-330	No	DEC	15	0:45	15:00
167	RT	Voltage Support	PGAE	Fresno	1/16/2023	-330	No	DEC	6	0:30	6:00
168	RT	Voltage Support	PGAE	Fresno	1/17/2023	-330	No	DEC	24	0:30	0:00
169	RT	Voltage Support	PGAE	Fresno	1/18/2023	-330	No	DEC	24	0:00	0:00
170	RT	Voltage Support	PGAE	Fresno	1/19/2023	-330	No	DEC	24	0:00	0:00
171	RT	Voltage Support	PGAE	Fresno	1/20/2023	-330	No	DEC	24	0:00	0:00
172	RT	Voltage Support	PGAE	Fresno	1/20/2023	0	No	INC	2	21:00	22:30
173	RT	Voltage Support	PGAE	Fresno	1/21/2023	-330	No	DEC	24	0:00	0:00
174	RT	Voltage Support	PGAE	Fresno	1/21/2023	-413	Yes	INC	8	14:55	22:00
175	RT	Voltage Support	PGAE	Fresno	1/22/2023	-330	No	DEC	17	0:00	16:30
176	RT	Voltage Support	PGAE	Fresno	1/22/2023	-330	No	INC	1	15:30	16:00
177	RT	Voltage Support	PGAE	Fresno	1/23/2023	-330	No	DEC	5	0:45	5:30
178	RT	Voltage Support	PGAE	Fresno	1/24/2023	-330	No	DEC	2	2:55	4:30
179	RT	Voltage Support	PGAE	Fresno	1/26/2023	-330	No	DEC	24	0:45	0:00
180	RT	Voltage Support	PGAE	Fresno	1/26/2023	23	No	INC	6	18:10	0:00
181	RT	Voltage Support	PGAE	Fresno	1/27/2023	-330	No	DEC	6	0:00	5:30
182	RT	Voltage Support	PGAE	Fresno	1/27/2023	23	No	INC	10	0:00	10:00
183	RT	Voltage Support	PGAE	Fresno	1/28/2023	-330	No	DEC	9	0:10	9:00
184	RT	Voltage Support	PGAE	Fresno	1/28/2023	21 - 83	Yes	INC	17	0:10	17:00
185	RT	Voltage Support	PGAE	Fresno	1/29/2023	-330	No	DEC	23	1:00	0:00
186	RT	Voltage Support	PGAE	Fresno	1/29/2023	-413	No	INC	11	13:45	0:00
187	RT	Voltage Support	PGAE	Fresno	1/30/2023	-330	No	DEC	5	0:00	5:00
188	RT	Voltage Support	PGAE	Fresno	1/31/2023	-330	No	DEC	4	0:45	4:45
189	RT	Voltage Support	PGAE	Humboldt	1/16/2023	15 - 30	No	DEC	6	18:30	0:00
190	RT	Voltage Support	PGAE	Humboldt	1/16/2023	15 - 45	No	INC	18	6:25	0:00
191	RT	Voltage Support	PGAE	Humboldt	1/17/2023	15 - 30	No	DEC	24	0:00	0:00
192	RT	Voltage Support	PGAE	Humboldt	1/17/2023	15 - 30	No	INC	24	0:00	0:00
193	RT	Voltage Support	PGAE	Humboldt	1/18/2023	15	No	DEC	24	0:00	0:00
194	RT	Voltage Support	PGAE	Humboldt	1/18/2023	15 - 30	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
195	RT	Voltage Support	PGAE	Humboldt	1/19/2023	15	No	DEC	24	0:00	0:00
196	RT	Voltage Support	PGAE	Humboldt	1/19/2023	15 - 32	No	INC	24	0:00	0:00
197	RT	Voltage Support	PGAE	Humboldt	1/20/2023	15 - 30	No	DEC	23	0:00	23:00
198	RT	Voltage Support	PGAE	Humboldt	1/20/2023	15 - 30	No	INC	24	0:00	0:00
199	RT	Voltage Support	PGAE	Humboldt	1/21/2023	15	No	DEC	15	9:45	0:00
200	RT	Voltage Support	PGAE	Humboldt	1/21/2023	15 - 30	No	INC	24	0:00	0:00
201	RT	Voltage Support	PGAE	Humboldt	1/22/2023	15	No	DEC	24	0:00	0:00
202	RT	Voltage Support	PGAE	Humboldt	1/22/2023	15	No	INC	24	0:00	0:00
203	RT	Voltage Support	PGAE	Humboldt	1/23/2023	15 - 30	No	DEC	24	0:00	0:00
204	RT	Voltage Support	PGAE	Humboldt	1/23/2023	15 - 30	No	INC	16	0:00	16:00
205	RT	Voltage Support	PGAE	Humboldt	1/24/2023	15 - 30	No	DEC	24	0:00	0:00
206	RT	Voltage Support	PGAE	Humboldt	1/24/2023	30	No	INC	16	8:00	0:00
207	RT	Voltage Support	PGAE	Humboldt	1/25/2023	15 - 45	No	DEC	22	0:00	22:00
208	RT	Voltage Support	PGAE	Humboldt	1/25/2023	30 - 45	No	INC	24	0:00	0:00
209	RT	Voltage Support	PGAE	Humboldt	1/26/2023	14 - 30	No	INC	24	0:00	0:00
210	RT	Voltage Support	PGAE	Humboldt	1/27/2023	15	No	INC	7	0:00	7:00
211	RT	Voltage Support	PGAE	Kern	1/1/2023	32	Yes	INC	24	0:00	0:00
212	RT	Voltage Support	PGAE	Kern	1/2/2023	32	No	INC	7	0:00	7:00
213	RT	Voltage Support	PGAE	Kern	1/14/2023	32	Yes	INC	4	5:30	9:30
214	RT	Voltage Support	PGAE	Kern	1/21/2023	32	Yes	INC	20	4:50	0:00
215	RT	Voltage Support	PGAE	Kern	1/22/2023	32	No	INC	24	0:00	0:00
216	RT	Voltage Support	PGAE	Kern	1/23/2023	32 - 38	No	INC	24	0:00	0:00
217	RT	Voltage Support	PGAE	Kern	1/24/2023	32 - 37	Yes	INC	7	0:00	7:00
218	RT	Voltage Support	PGAE	Kern	1/26/2023	32.01	No	INC	6	18:45	0:00
219	RT	Voltage Support	PGAE	Kern	1/27/2023	32.01	No	INC	7	0:00	7:00
220	RT	Voltage Support	PGAE	Kern	1/28/2023	32	No	INC	22	2:45	0:00
221	RT	Voltage Support	PGAE	Kern	1/29/2023	32	No	INC	24	0:00	0:00
222	RT	Voltage Support	PGAE	Kern	1/30/2023	32	No	INC	7	0:00	7:00
223	RT	Voltage Support	PGAE	Sierra	1/1/2023	20	No	DEC	1	21:00	22:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
224	RT	Voltage Support	PGAE	Sierra	1/1/2023	20	No	INC	6	18:10	0:00
225	RT	Voltage Support	PGAE	Sierra	1/2/2023	20	No	DEC	3	21:00	0:00
226	RT	Voltage Support	PGAE	Sierra	1/2/2023	20	No	INC	24	0:00	0:00
227	RT	Voltage Support	PGAE	Sierra	1/3/2023	20	Yes	DEC	24	0:00	0:00
228	RT	Voltage Support	PGAE	Sierra	1/3/2023	20	Yes	INC	18	3:00	21:00
229	RT	Voltage Support	PGAE	Sierra	1/4/2023	20	No	INC	24	0:00	0:00
230	RT	Voltage Support	PGAE	Sierra	1/5/2023	20	No	DEC	17	5:00	22:00
231	RT	Voltage Support	PGAE	Sierra	1/5/2023	20	No	INC	24	0:00	0:00
232	RT	Voltage Support	PGAE	Sierra	1/6/2023	20	No	DEC	1	5:00	6:00
233	RT	Voltage Support	PGAE	Sierra	1/6/2023	20	No	INC	8	0:00	8:00
234	RT	Voltage Support	PGAE	Sierra	1/14/2023	20	No	INC	10	0:40	10:00
235	RT	Voltage Support	PGAE	Sierra	1/18/2023	20	No	DEC	18	5:00	23:00
236	RT	Voltage Support	PGAE	Sierra	1/18/2023	20	No	INC	24	0:00	0:00
237	RT	Voltage Support	PGAE	Sierra	1/19/2023	20	No	DEC	17	5:00	22:00
238	RT	Voltage Support	PGAE	Sierra	1/19/2023	20	No	INC	24	0:00	0:00
239	RT	Voltage Support	PGAE	Sierra	1/20/2023	20	No	DEC	19	5:00	0:00
240	RT	Voltage Support	PGAE	Sierra	1/20/2023	20	No	INC	21	0:00	21:00
241	RT	Voltage Support	PGAE	Sierra	1/21/2023	20	No	DEC	23	0:00	23:00
242	RT	Voltage Support	PGAE	Sierra	1/21/2023	20	No	INC	23	1:00	0:00
243	RT	Voltage Support	PGAE	Sierra	1/22/2023	20	No	DEC	6	17:00	23:00
244	RT	Voltage Support	PGAE	Sierra	1/22/2023	20	No	INC	24	0:00	0:00
245	RT	Voltage Support	PGAE	Sierra	1/23/2023	20	No	DEC	1	5:00	6:00
246	RT	Voltage Support	PGAE	Sierra	1/23/2023	20	No	INC	7	0:00	7:00
247	RT	Voltage Support	PGAE	Sierra	1/27/2023	42	No	INC	4	20:45	0:00
248	RT	Voltage Support	PGAE	Sierra	1/28/2023	20 - 42	Yes	INC	24	0:00	0:00
249	RT	Voltage Support	PGAE	Sierra	1/29/2023	20 - 42	No	INC	24	0:00	0:00
250	RT	Voltage Support	PGAE	Sierra	1/30/2023	20	No	DEC	1	21:00	22:00
251	RT	Voltage Support	PGAE	Sierra	1/30/2023	20 - 42	No	INC	24	0:00	0:00
252	RT	Voltage Support	PGAE	Sierra	1/31/2023	20	No	DEC	1	5:00	6:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
253	RT	Voltage Support	PGAE	Sierra	1/31/2023	20	No	INC	5	0:00	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