

June 17, 2019

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 Frist Street, NE
Washington, DC 20426

**Re: California Independent System Operator Corporation
Docket Nos. ER08-1178-___ and EL08-88-___
April 2019 Exceptional Dispatch Report (Chart 1 data)**

Dear Secretary Bose:

Pursuant to the Federal Energy Regulatory Commission's (Commission) September 2, 2009 (September 2 Order), and May 4, 2010 (May 4 Order) orders in the above-referenced dockets, the California Independent System Operator Corporation (CAISO) submits the attached report for filing. The attached report provides details concerning Exceptional Dispatches the Commission directed to be included in "Chart 1" as set forth in Appendix A of the September 2 Order, as modified by the CAISO's September 14, 2009, motion for clarification, which the Commission granted in its May 4 Order. The attached report provides Chart 1 data for the month of April 2019.

Respectfully submitted,

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Exceptional Dispatch Report

Table 1: April 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 issued on the 30th of each month. This report provides data on the frequency and reasons for Exceptional Dispatches issued in April 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 April 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 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

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>.

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 April 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 227 exceptional dispatches in April 2019, as compared to 149 exceptional dispatches in March 2019. Exceptional dispatches issued for the following reasons accounted for approximately 53 percent of the total exceptional dispatches during the reporting period: planned transmission outages, software limitations, load forecast uncertainty, and operating procedure number 7110 (along with 7410, 7430, 7450).

³ The data in Table 1 is principally SLIC information supplemented with data from the Market Quality System (MQS). It is the most accurate currently available and it is worth noting that this data has been through the T+38B initial statement process wherein many unresolved issues are fixed. The CAISO believes that this data will correlate well with the settlements data that will be available when the CAISO files the Table 2 report for the reporting period.

Table 1: Exceptional Dispatches in April 2019

**California Independent System Operator Corporation
Exceptional Dispatch Report
June 17, 2019**

Chart 1: Table of Exceptional Dispatches for Period 01/April/2019 - 30/April/2019

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	CP	PGAE	NA	4/3/2019	25 - 35	No	INC	4	14:15	18:00
2	RT	Incomplete or Inaccurate Transmission	PGAE	Fresno	4/15/2019	7	No	DEC	1	16:00	17:00
3	RT	Incomplete or Inaccurate Transmission	PGAE	Fresno	4/15/2019	7 - 10	No	INC	11	8:35	18:45
4	RT	Incomplete or Inaccurate Transmission	PGAE	Fresno	4/16/2019	15	No	INC	1	8:30	9:00
5	RT	Incomplete or Inaccurate Transmission	PGAE	Fresno	4/17/2019	75	No	INC	2	22:35	0:00
6	RT	Incomplete or Inaccurate Transmission	PGAE	NA	4/22/2019	276	No	DEC	1	17:00	18:00
7	RT	Incomplete or Inaccurate Transmission	PGAE	Sierra	4/15/2019	6	No	INC	5	16:30	21:00
8	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/16/2019	35 - 70	No	DEC	9	15:35	0:00
9	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/16/2019	70 - 91	No	INC	8	16:00	0:00
10	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/17/2019	48 - 70	No	DEC	24	0:00	0:00
11	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/17/2019	70 - 236	No	INC	24	0:00	23:30
12	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/18/2019	60	No	DEC	3	6:00	9:00
13	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/18/2019	60 - 212	No	INC	15	0:00	14:30
14	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/26/2019	50	No	DEC	2	22:30	0:00
15	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/27/2019	35 - 60	No	DEC	24	0:00	0:00
16	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/27/2019	35 - 50	No	INC	7	2:00	9:00
17	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/28/2019	65 - 70	No	DEC	4	1:00	5:00
18	RT	Incomplete or Inaccurate Transmission	PGAE	Stockton	4/28/2019	60 - 70	No	INC	7	0:00	6:30
19	RT	Load Forecast Uncertainty	PGAE	Bay Area	4/8/2019	175	No	INC	6	16:00	22:00
20	RT	Load Forecast Uncertainty	PGAE	Bay Area	4/19/2019	175	No	INC	7	15:00	22:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
21	RT	Load Forecast Uncertainty	PGAE	Bay Area	4/28/2019	216	No	INC	6	16:00	22:00
22	RT	Load Forecast Uncertainty	PGAE	Fresno	4/25/2019	83	No	DEC	1	18:00	18:40
23	RT	Load Forecast Uncertainty	PGAE	Fresno	4/25/2019	83	No	INC	1	17:35	18:00
24	RT	Load Forecast Uncertainty	PGAE	Fresno	4/27/2019	83	Yes	INC	2	16:45	18:00
25	RT	Load Forecast Uncertainty	PGAE	Fresno	4/28/2019	83	No	INC	3	15:25	18:00
26	RT	Load Forecast Uncertainty	PGAE	NA	4/28/2019	175 - 350	No	INC	7	15:00	22:00
27	RT	Load Forecast Uncertainty	SCE	LA Basin	4/8/2019	20	No	INC	8	16:00	0:00
28	RT	Load Forecast Uncertainty	SCE	LA Basin	4/19/2019	147	No	INC	5	16:30	21:30
29	RT	Load Forecast Uncertainty	SCE	LA Basin	4/24/2019	20	No	INC	18	6:00	0:00
30	RT	Load Forecast Uncertainty	SCE	LA Basin	4/25/2019	20	No	INC	6	0:00	6:00
31	RT	Load Forecast Uncertainty	SCE	LA Basin	4/28/2019	90	No	INC	1	17:45	18:00
32	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	4/8/2019	225	No	INC	3	17:00	20:00
33	RT	Load Pull	SCE	LA Basin	4/8/2019	65	No	INC	3	17:00	20:00
34	RT	Load Pull	SCE	LA Basin	4/24/2019	65 - 194	No	INC	3	17:00	20:00
35	RT	Market Disruption	PGAE	Bay Area	4/11/2019	175	No	INC	9	7:00	16:00
36	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/1/2019	32	No	INC	13	8:00	21:00
37	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/4/2019	16 - 32	No	INC	17	6:00	23:00
38	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/6/2019	15	No	INC	1	21:45	22:15
39	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/8/2019	32	No	DEC	1	10:00	11:00
40	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/8/2019	32	No	INC	4	7:45	11:30
41	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/9/2019	32	No	INC	19	5:50	0:00
42	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/10/2019	16	No	DEC	4	3:15	6:20

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
43	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/10/2019	30 - 32	No	INC	24	0:00	0:00
44	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/11/2019	30 - 31	No	INC	24	0:25	0:00
45	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/12/2019	16	No	DEC	4	1:45	5:25
46	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/12/2019	16 - 32	No	INC	24	0:00	23:45
47	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/16/2019	16 - 32	No	INC	17	6:40	23:00
48	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/17/2019	30 - 32	No	INC	17	6:55	23:00
49	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/26/2019	14 - 16	No	DEC	2	21:00	22:30
50	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/26/2019	14 - 32	No	INC	2	21:00	22:30
51	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	4/30/2019	28	No	INC	8	12:00	19:30
52	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/13/2019	40	No	DEC	1	0:50	0:55
53	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/19/2019	40	No	DEC	1	23:05	0:00
54	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/20/2019	40 - 80	No	DEC	22	0:00	22:00
55	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/20/2019	40 - 80	No	INC	23	1:00	0:00
56	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/21/2019	45	No	DEC	2	22:40	0:00
57	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/21/2019	80 - 88	No	INC	20	0:00	20:00
58	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/22/2019	20 - 88	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
59	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/22/2019	45 - 88	No	INC	24	0:00	0:00
60	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/23/2019	30 - 60	No	DEC	15	7:00	22:00
61	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/23/2019	30 - 60	No	INC	24	0:00	0:00
62	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/24/2019	35 - 65	No	DEC	15	1:00	16:00
63	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/24/2019	35 - 70	No	INC	24	0:00	0:00
64	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/25/2019	30 - 57	No	DEC	7	0:45	7:00
65	RT	Operating Procedure Number and Constraint (7410)	PGAE	Stockton	4/25/2019	40 - 60	No	INC	7	0:00	7:00
66	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	4/7/2019	65	No	DEC	7	12:25	19:00
67	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	4/7/2019	65	No	INC	2	16:00	18:00
68	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	4/9/2019	32	No	INC	1	5:45	5:50
69	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	4/28/2019	75	No	INC	2	22:55	0:00
70	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	4/29/2019	75	No	INC	5	0:00	5:00
71	RT	Operating Procedure Number and Constraint (7450)	PGAE	Kern	4/9/2019	0	No	INC	2	20:10	22:10
72	RT	Other Reliability Requirement	PGAE	Bay Area	4/21/2019	275	No	INC	6	10:00	16:00
73	RT	Other Reliability Requirement	PGAE	Fresno	4/3/2019	83	No	DEC	1	20:35	21:00
74	RT	Other Reliability Requirement	PGAE	Fresno	4/3/2019	83	No	INC	2	21:00	22:15
75	RT	Other Reliability Requirement	PGAE	Fresno	4/6/2019	73	No	INC	4	19:00	23:00
76	RT	Other Reliability Requirement	PGAE	Fresno	4/9/2019	20	No	DEC	1	6:00	7:00
77	RT	Other Reliability Requirement	PGAE	Fresno	4/9/2019	20	No	INC	3	3:00	6:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
78	RT	Other Reliability Requirement	PGAE	Fresno	4/19/2019	130	No	INC	1	21:25	22:00
79	RT	Other Reliability Requirement	PGAE	Fresno	4/24/2019	5	No	DEC	1	15:15	15:45
80	RT	Other Reliability Requirement	PGAE	Fresno	4/25/2019	13 - 14	No	DEC	1	10:15	11:00
81	RT	Other Reliability Requirement	PGAE	Fresno	4/25/2019	400	No	INC	1	17:45	18:30
82	RT	Other Reliability Requirement	PGAE	Fresno	4/28/2019	0 - 40	No	DEC	7	11:10	18:00
83	RT	Other Reliability Requirement	PGAE	Fresno	4/28/2019	40	No	INC	1	18:00	19:00
84	RT	Other Reliability Requirement	PGAE	Fresno	4/29/2019	12	No	DEC	4	12:55	16:00
85	RT	Other Reliability Requirement	PGAE	Fresno	4/29/2019	12	No	INC	1	16:00	17:00
86	RT	Other Reliability Requirement	PGAE	NA	4/3/2019	25	No	INC	1	11:20	12:00
87	RT	Other Reliability Requirement	PGAE	NA	4/7/2019	0	No	DEC	10	4:00	14:00
88	RT	Other Reliability Requirement	PGAE	Sierra	4/10/2019	22 - 60	No	DEC	6	14:20	20:15
89	RT	Other Reliability Requirement	PGAE	Sierra	4/10/2019	50	No	INC	1	20:00	21:00
90	RT	Other Reliability Requirement	PGAE	Sierra	4/13/2019	50	No	DEC	11	13:20	0:00
91	RT	Other Reliability Requirement	PGAE	Sierra	4/14/2019	50	No	DEC	20	0:00	19:30
92	RT	Other Reliability Requirement	PGAE	Stockton	4/6/2019	50 - 80	No	DEC	24	0:10	0:00
93	RT	Other Reliability Requirement	PGAE	Stockton	4/6/2019	50 - 80	No	INC	7	2:00	9:00
94	RT	Other Reliability Requirement	PGAE	Stockton	4/7/2019	50 - 85	No	DEC	23	1:00	0:00
95	RT	Other Reliability Requirement	PGAE	Stockton	4/7/2019	50 - 85	No	INC	24	0:00	0:00
96	RT	Other Reliability Requirement	PGAE	Stockton	4/8/2019	35 - 191.1	No	DEC	21	0:00	21:00
97	RT	Other Reliability Requirement	PGAE	Stockton	4/8/2019	35 - 72	No	INC	18	0:00	18:00
98	RT	Other Reliability Requirement	PGAE	Stockton	4/9/2019	34 - 61	No	DEC	17	7:20	0:00
99	RT	Other Reliability Requirement	PGAE	Stockton	4/9/2019	34 - 45	No	INC	13	11:00	0:00
100	RT	Other Reliability Requirement	PGAE	Stockton	4/10/2019	30 - 70	No	DEC	24	0:00	0:00
101	RT	Other Reliability Requirement	PGAE	Stockton	4/10/2019	30 - 70	No	INC	24	0:00	0:00
102	RT	Other Reliability Requirement	PGAE	Stockton	4/11/2019	30 - 70	No	DEC	24	0:00	0:00
103	RT	Other Reliability Requirement	PGAE	Stockton	4/11/2019	30 - 70	No	INC	24	0:00	0:00
104	RT	Other Reliability Requirement	PGAE	Stockton	4/12/2019	40 - 70	No	DEC	21	0:00	21:00
105	RT	Other Reliability Requirement	PGAE	Stockton	4/12/2019	70	No	INC	18	0:00	18:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
106	RT	Other Reliability Requirement	PGAE	Stockton	4/15/2019	50 - 80	No	DEC	6	18:50	0:00
107	RT	Other Reliability Requirement	PGAE	Stockton	4/15/2019	65	No	INC	1	23:00	0:00
108	RT	Other Reliability Requirement	PGAE	Stockton	4/16/2019	45 - 65	No	DEC	9	0:00	9:00
109	RT	Other Reliability Requirement	PGAE	Stockton	4/16/2019	65 - 70	No	INC	8	1:00	9:00
110	RT	Other Reliability Requirement	PGAE	Stockton	4/18/2019	236	No	DEC	2	20:00	22:00
111	RT	Other Reliability Requirement	PGAE	Stockton	4/18/2019	236 - 237	No	INC	5	19:10	23:45
112	RT	Other Reliability Requirement	PGAE	Stockton	4/19/2019	60 - 70	No	DEC	14	6:00	20:00
113	RT	Other Reliability Requirement	PGAE	Stockton	4/19/2019	60 - 70	No	INC	13	4:30	17:00
114	RT	Other Reliability Requirement	PGAE	Stockton	4/25/2019	30 - 40	No	DEC	2	8:00	10:00
115	RT	Other Reliability Requirement	PGAE	Stockton	4/28/2019	60 - 65	No	DEC	5	18:10	23:00
116	RT	Other Reliability Requirement	PGAE	Stockton	4/28/2019	65 - 75	No	INC	6	18:25	0:00
117	RT	Other Reliability Requirement	PGAE	Stockton	4/29/2019	30 - 75	No	DEC	20	4:35	0:00
118	RT	Other Reliability Requirement	PGAE	Stockton	4/29/2019	50 - 75	No	INC	24	0:00	0:00
119	RT	Other Reliability Requirement	PGAE	Stockton	4/30/2019	30 - 63	No	DEC	16	6:00	22:00
120	RT	Other Reliability Requirement	PGAE	Stockton	4/30/2019	30 - 63	No	INC	24	0:00	0:00
121	RT	Other Reliability Requirement	SCE	LA Basin	4/23/2019	190	No	INC	1	13:40	14:30
122	RT	Planned Transmission Outage	PGAE	Bay Area	4/11/2019	175	No	INC	9	7:00	16:00
123	RT	Planned Transmission Outage	PGAE	Fresno	4/2/2019	2 - 10	No	DEC	9	9:10	18:00
124	RT	Planned Transmission Outage	PGAE	Fresno	4/3/2019	5	No	DEC	2	9:20	11:00
125	RT	Planned Transmission Outage	PGAE	Fresno	4/9/2019	1 - 3	No	DEC	9	9:25	18:00
126	RT	Planned Transmission Outage	PGAE	Fresno	4/10/2019	3	No	DEC	3	8:30	10:45
127	RT	Planned Transmission Outage	PGAE	Fresno	4/15/2019	10	No	INC	1	9:05	9:30
128	RT	Planned Transmission Outage	PGAE	Fresno	4/30/2019	50 - 60	No	DEC	4	14:25	18:00
129	RT	Planned Transmission Outage	PGAE	Fresno	4/30/2019	50 - 60	No	INC	8	16:00	0:00
130	RT	Planned Transmission Outage	PGAE	Humboldt	4/2/2019	15	No	INC	14	7:15	21:00
131	RT	Planned Transmission Outage	PGAE	Humboldt	4/3/2019	15	No	INC	11	7:15	18:00
132	RT	Planned Transmission Outage	PGAE	Humboldt	4/5/2019	16 - 42	No	INC	19	5:45	0:00
133	RT	Planned Transmission Outage	PGAE	Humboldt	4/6/2019	16 - 42	No	INC	24	0:00	23:15

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
134	RT	Planned Transmission Outage	PGAE	Humboldt	4/7/2019	15 - 42	No	INC	19	4:30	23:00
135	RT	Planned Transmission Outage	PGAE	Humboldt	4/8/2019	32	No	DEC	1	10:00	11:00
136	RT	Planned Transmission Outage	PGAE	Humboldt	4/8/2019	32 - 48	No	INC	13	8:00	21:00
137	RT	Planned Transmission Outage	PGAE	Humboldt	4/9/2019	16	No	INC	18	6:15	0:00
138	RT	Planned Transmission Outage	PGAE	Humboldt	4/10/2019	16	No	INC	24	0:00	0:00
139	RT	Planned Transmission Outage	PGAE	Humboldt	4/11/2019	15	No	INC	18	6:45	0:00
140	RT	Planned Transmission Outage	PGAE	Humboldt	4/12/2019	14	No	INC	6	6:25	12:00
141	RT	Planned Transmission Outage	PGAE	Humboldt	4/13/2019	15 - 30	No	INC	15	7:00	22:00
142	RT	Planned Transmission Outage	PGAE	Humboldt	4/14/2019	30	No	INC	18	6:00	0:00
143	RT	Planned Transmission Outage	PGAE	Humboldt	4/15/2019	30	No	DEC	3	18:00	21:00
144	RT	Planned Transmission Outage	PGAE	Humboldt	4/15/2019	16 - 32	No	INC	24	0:00	0:00
145	RT	Planned Transmission Outage	PGAE	Humboldt	4/18/2019	14	No	INC	1	22:00	23:00
146	RT	Planned Transmission Outage	PGAE	Humboldt	4/21/2019	16	No	DEC	1	23:35	0:00
147	RT	Planned Transmission Outage	PGAE	Humboldt	4/21/2019	15 - 32	No	INC	19	5:00	0:00
148	RT	Planned Transmission Outage	PGAE	Humboldt	4/22/2019	14 - 16	No	DEC	18	0:00	17:20
149	RT	Planned Transmission Outage	PGAE	Humboldt	4/22/2019	14 - 30	No	INC	24	0:00	0:00
150	RT	Planned Transmission Outage	PGAE	Humboldt	4/23/2019	14 - 28	No	DEC	19	3:30	22:00
151	RT	Planned Transmission Outage	PGAE	Humboldt	4/23/2019	14 - 28	No	INC	24	0:00	0:00
152	RT	Planned Transmission Outage	PGAE	Humboldt	4/24/2019	14 - 30	No	INC	24	0:00	0:00
153	RT	Planned Transmission Outage	PGAE	Humboldt	4/25/2019	32	No	DEC	6	16:00	22:00
154	RT	Planned Transmission Outage	PGAE	Humboldt	4/25/2019	30 - 56	No	INC	24	0:00	0:00
155	RT	Planned Transmission Outage	PGAE	Humboldt	4/26/2019	16	No	DEC	14	7:35	21:30
156	RT	Planned Transmission Outage	PGAE	Humboldt	4/26/2019	32 - 56	No	INC	22	0:00	21:30
157	RT	Planned Transmission Outage	PGAE	Humboldt	4/28/2019	32	No	DEC	2	18:00	20:00
158	RT	Planned Transmission Outage	PGAE	Humboldt	4/28/2019	16 - 32	No	INC	19	5:55	0:00
159	RT	Planned Transmission Outage	PGAE	Humboldt	4/29/2019	14 - 28	No	INC	24	0:00	0:00
160	RT	Planned Transmission Outage	PGAE	Humboldt	4/30/2019	28 - 32	No	INC	24	0:00	0:00
161	RT	Planned Transmission Outage	PGAE	Kern	4/25/2019	32	No	INC	4	18:00	22:00
162	RT	Planned Transmission Outage	PGAE	NA	4/25/2019	50	No	DEC	2	5:25	7:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
163	RT	Planned Transmission Outage	PGAE	NA	4/25/2019	50	No	INC	1	6:00	7:00
164	RT	Planned Transmission Outage	PGAE	NA	4/30/2019	500	No	DEC	3	12:55	15:00
165	RT	Planned Transmission Outage	PGAE	NA	4/30/2019	500	No	INC	2	15:00	16:45
166	RT	Planned Transmission Outage	PGAE	Sierra	4/12/2019	47 - 60	No	DEC	9	15:15	0:00
167	RT	Planned Transmission Outage	PGAE	Sierra	4/13/2019	47 - 60	No	DEC	1	0:00	1:00
168	RT	Planned Transmission Outage	PGAE	Sierra	4/15/2019	10 - 45	No	DEC	17	6:00	22:45
169	RT	Planned Transmission Outage	PGAE	Sierra	4/15/2019	0	No	INC	3	20:35	23:00
170	RT	Planned Transmission Outage	PGAE	Sierra	4/19/2019	44 - 48	No	DEC	8	12:10	19:45
171	RT	Planned Transmission Outage	PGAE	Sierra	4/23/2019	0	No	INC	1	12:45	13:45
172	RT	Planned Transmission Outage	PGAE	Stockton	4/15/2019	50	No	DEC	9	14:50	23:30
173	RT	Planned Transmission Outage	PGAE	Stockton	4/20/2019	45 - 80	No	DEC	5	19:00	0:00
174	RT	Planned Transmission Outage	PGAE	Stockton	4/20/2019	80	No	INC	2	22:00	0:00
175	RT	Planned Transmission Outage	PGAE	Stockton	4/21/2019	45 - 60	No	DEC	24	0:00	0:00
176	RT	Planned Transmission Outage	PGAE	Stockton	4/21/2019	45 - 88	No	INC	20	0:00	20:00
177	RT	Planned Transmission Outage	PGAE	Stockton	4/22/2019	30 - 50	No	DEC	3	3:00	5:15
178	RT	Planned Transmission Outage	PGAE	Stockton	4/22/2019	45 - 50	No	INC	3	0:00	3:00
179	RT	Planned Transmission Outage	PGAE	Stockton	4/25/2019	45	No	DEC	2	22:40	0:00
180	RT	Planned Transmission Outage	PGAE	Stockton	4/25/2019	280	No	INC	4	18:50	22:30
181	RT	Planned Transmission Outage	PGAE	Stockton	4/26/2019	45 - 60	No	DEC	23	0:00	22:30
182	RT	Planned Transmission Outage	PGAE	Stockton	4/26/2019	45	No	INC	2	2:00	4:00
183	RT	Pump Management	PGAE	Fresno	4/13/2019	-317 - -312	No	DEC	1	7:00	8:00
184	RT	Pump Management	PGAE	Fresno	4/13/2019	-317	No	INC	2	8:00	10:00
185	RT	Pump Management	PGAE	Fresno	4/19/2019	-317	No	INC	1	13:00	14:00
186	RT	Software Limitation	PGAE	Fresno	4/15/2019	0	No	INC	1	15:55	16:55
187	RT	Software Limitation	PGAE	Humboldt	4/6/2019	15	No	DEC	1	23:45	0:00
188	RT	Software Limitation	PGAE	Sierra	4/9/2019	0	No	DEC	1	19:05	19:35
189	RT	Software Limitation	PGAE	Stockton	4/17/2019	192	No	INC	2	6:35	8:00
190	RT	Software Limitation	SCE	LA Basin	4/15/2019	0	No	DEC	2	19:00	21:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
191	RT	Software Limitation	SCE	LA Basin	4/15/2019	0	No	INC	6	18:45	0:00
192	RT	Software Limitation	SCE	LA Basin	4/24/2019	0	No	INC	1	23:45	0:00
193	RT	Software Limitation	SCE	LA Basin	4/25/2019	0	No	INC	1	0:00	0:50
194	RT	Software Limitation	SDGE	San Diego-IV	4/18/2019	225	No	INC	2	18:00	20:00
195	RT	Software Limitation	SDGE	San Diego-IV	4/28/2019	25	No	DEC	1	19:00	19:30
196	RT	SOL	PGAE	Fresno	4/4/2019	3 - 5	No	DEC	6	11:45	17:00
197	RT	SOL	PGAE	Fresno	4/4/2019	3 - 13	No	INC	8	10:10	18:00
198	RT	SOL	PGAE	Sierra	4/1/2019	30 - 35	No	DEC	10	2:00	12:00
199	RT	SOL	PGAE	Stockton	4/1/2019	80	No	DEC	1	7:40	8:00
200	RT	SOL	PGAE	Stockton	4/1/2019	80 - 85	No	INC	2	8:00	9:15
201	RT	SOL	PGAE	Stockton	4/13/2019	40 - 65	No	DEC	24	0:55	0:00
202	RT	SOL	PGAE	Stockton	4/13/2019	65	No	INC	24	0:50	0:00
203	RT	SOL	PGAE	Stockton	4/14/2019	40 - 65	No	DEC	20	0:00	20:00
204	RT	SOL	PGAE	Stockton	4/14/2019	40 - 65	No	INC	17	1:00	18:00
205	RT	Unit Testing	PGAE	Fresno	4/1/2019	-313	No	DEC	1	14:30	15:30
206	RT	Unit Testing	PGAE	Fresno	4/3/2019	83 - 407	No	INC	5	8:00	13:00
207	RT	Unit Testing	PGAE	Fresno	4/4/2019	407	No	INC	1	7:15	8:00
208	RT	Unit Testing	PGAE	Fresno	4/18/2019	90	No	INC	3	14:00	17:00
209	RT	Unit Testing	PGAE	Fresno	4/23/2019	402	No	INC	2	7:30	9:00
210	RT	Unit Testing	PGAE	Fresno	4/25/2019	31.8 - 48	No	INC	13	7:30	19:35
211	RT	Unit Testing	PGAE	NA	4/10/2019	36.94 - 37.3	No	INC	1	15:30	16:15
212	RT	Unit Testing	SCE	Big Creek-Ventura	4/30/2019	78	No	INC	3	10:00	12:15
213	RT	Unit Testing	SCE	LA Basin	4/23/2019	42 - 44	No	INC	1	20:40	21:30
214	RT	Unit Testing	SCE	NA	4/27/2019	125	No	INC	12	10:00	22:00
215	RT	Unit Testing	SCE	NA	4/28/2019	125	No	INC	12	7:00	19:00
216	RT	Unit Testing	SCE	NA	4/29/2019	125 - 172	No	INC	6	14:45	20:15

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
217	RT	Unit Testing	SDGE	San Diego-IV	4/4/2019	48	No	INC	1	17:00	17:15
218	RT	Unit Testing	SDGE	San Diego-IV	4/19/2019	35.5	No	INC	2	6:00	8:00
219	RT	Voltage Support	PGAE	Fresno	4/1/2019	83	No	INC	4	1:50	5:00
220	RT	Voltage Support	PGAE	Humboldt	4/3/2019	32	No	INC	5	18:45	23:00
221	RT	Voltage Support	PGAE	Humboldt	4/19/2019	16	No	DEC	4	20:00	0:00
222	RT	Voltage Support	PGAE	Humboldt	4/19/2019	16 - 32	No	INC	17	7:35	0:00
223	RT	Voltage Support	PGAE	Humboldt	4/20/2019	16	No	DEC	7	0:00	7:00
224	RT	Voltage Support	PGAE	Humboldt	4/20/2019	15 - 32	No	INC	24	0:00	0:00
225	RT	Voltage Support	PGAE	Humboldt	4/21/2019	16	No	DEC	5	3:15	7:30
226	RT	Voltage Support	PGAE	Humboldt	4/21/2019	15 - 32	No	INC	14	0:00	13:10
227	RT	Weather Concerns	PGAE	Bay Area	4/11/2019	175 - 420	No	INC	1	16:05	16:15

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

CERTIFICATE OF SERVICE

I certify that I have served the foregoing document upon the parties listed on the official service list in the captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California, this 17th day of June, 2019.

Is/ Grace Clark

Grace Clark