



Exceptional Dispatch Report

Table 1: June 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 June 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 June 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 June 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 423 exceptional dispatches in June 2019, as compared to 325 exceptional dispatches in May 2019. Exceptional dispatches issued for the following reasons accounted for approximately 39 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 7230, 7430, and 7720). Many of the exceptional

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.

dispatches with the reason “Other Reliability Requirement” were due to Real Time Contingency Analysis.

Table 1: Exceptional Dispatches in May 2019

**California Independent System Operator Corporation
Exceptional Dispatch Report
August 15, 2019**

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

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	Contingency Dispatch	PGAE	Fresno	6/10/2019	83 - 157	No	DEC	3	18:00	20:50
2	RT	Fast Start Unit Management	PGAE	Bay Area	6/4/2019	0	No	INC	1	23:00	0:00
3	RT	Fast Start Unit Management	PGAE	Bay Area	6/5/2019	0	No	INC	1	0:00	0:05
4	RT	Fast Start Unit Management	PGAE	Bay Area	6/10/2019	0	No	INC	1	23:10	0:00
5	RT	Fast Start Unit Management	PGAE	Bay Area	6/11/2019	0	No	INC	1	0:00	0:55
6	RT	Fast Start Unit Management	PGAE	Fresno	6/10/2019	0	No	INC	1	22:00	23:00
7	RT	Fast Start Unit Management	PGAE	Fresno	6/11/2019	0	No	INC	3	1:05	4:05
8	RT	Fast Start Unit Management	SCE	LA Basin	6/3/2019	0	No	INC	1	1:00	1:25
9	RT	Fast Start Unit Management	SCE	LA Basin	6/4/2019	0	No	INC	1	22:20	23:00
10	RT	Fast Start Unit Management	SCE	LA Basin	6/11/2019	0	No	INC	5	0:05	4:50
11	RT	Load Forecast Uncertainty	Intertie	NA	6/10/2019	50 - 57	No	DEC	3	16:00	19:00
12	RT	Load Forecast Uncertainty	Intertie	NA	6/10/2019	76 - 150	No	INC	3	16:00	19:00
13	RT	Load Forecast Uncertainty	Intertie	NA	6/12/2019	100 - 196	No	INC	2	19:00	21:00
14	RT	Load Forecast Uncertainty	PGAE	Bay Area	6/10/2019	21 - 120	No	INC	6	14:45	20:15
15	RT	Load Forecast Uncertainty	PGAE	Bay Area	6/11/2019	20	No	DEC	1	18:00	19:00
16	RT	Load Forecast Uncertainty	PGAE	Bay Area	6/11/2019	20	No	INC	6	15:40	21:00
17	RT	Load Forecast Uncertainty	PGAE	Bay Area	6/18/2019	54 - 175	No	INC	7	15:00	22:00
18	RT	Load Forecast Uncertainty	PGAE	Fresno	6/4/2019	45	No	INC	2	19:45	21:00
19	RT	Load Forecast Uncertainty	PGAE	Fresno	6/5/2019	83	No	DEC	1	18:00	18:50
20	RT	Load Forecast Uncertainty	PGAE	Fresno	6/5/2019	83	No	INC	1	17:45	18:00

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	Fresno	6/10/2019	21	No	DEC	1	19:00	20:00
22	RT	Load Forecast Uncertainty	PGAE	Fresno	6/10/2019	14 - 83	No	INC	9	11:15	20:15
23	RT	Load Forecast Uncertainty	PGAE	Fresno	6/11/2019	20	No	DEC	3	18:00	21:00
24	RT	Load Forecast Uncertainty	PGAE	Fresno	6/11/2019	20	No	INC	2	16:40	18:00
25	RT	Load Forecast Uncertainty	PGAE	Fresno	6/12/2019	100	No	DEC	2	19:10	21:00
26	RT	Load Forecast Uncertainty	PGAE	NA	6/5/2019	301	No	DEC	3	18:00	20:30
27	RT	Load Forecast Uncertainty	PGAE	NA	6/5/2019	301	No	INC	1	17:55	18:00
28	RT	Load Forecast Uncertainty	PGAE	NA	6/10/2019	22	No	DEC	1	19:00	20:00
29	RT	Load Forecast Uncertainty	PGAE	NA	6/10/2019	22	No	INC	7	14:30	21:00
30	RT	Load Forecast Uncertainty	PGAE	NA	6/11/2019	21	No	DEC	2	18:00	20:00
31	RT	Load Forecast Uncertainty	PGAE	NA	6/11/2019	21	No	INC	8	13:40	21:00
32	RT	Load Forecast Uncertainty	PGAE	NA	6/12/2019	44	No	DEC	3	18:00	21:00
33	RT	Load Forecast Uncertainty	PGAE	NA	6/12/2019	21 - 44	No	INC	3	15:45	18:00
34	RT	Load Forecast Uncertainty	PGAE	Stockton	6/18/2019	88.8	No	INC	3	17:45	20:00
35	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	6/10/2019	0 - 221.23	No	DEC	1	19:25	20:15
36	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	6/10/2019	47.1 - 400	No	INC	9	15:30	0:00
37	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	6/11/2019	50 - 405	No	INC	22	0:00	22:00
38	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	6/12/2019	50 - 399.99	No	INC	24	0:00	0:00
39	RT	Load Forecast Uncertainty	SCE	LA Basin	6/4/2019	70 - 80	No	DEC	2	19:45	21:00
40	RT	Load Forecast Uncertainty	SCE	LA Basin	6/4/2019	150	No	INC	2	19:40	21:00
41	RT	Load Forecast Uncertainty	SCE	LA Basin	6/5/2019	194	No	INC	3	18:35	20:45
42	RT	Load Forecast Uncertainty	SCE	LA Basin	6/10/2019	20 - 65	No	DEC	4	17:00	21:00
43	RT	Load Forecast Uncertainty	SCE	LA Basin	6/10/2019	5 - 194	No	INC	10	14:00	0:00
44	RT	Load Forecast Uncertainty	SCE	LA Basin	6/11/2019	65 - 255	No	DEC	7	15:00	22:00
45	RT	Load Forecast Uncertainty	SCE	LA Basin	6/11/2019	10 - 245	Yes	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
46	RT	Load Forecast Uncertainty	SCE	LA Basin	6/12/2019	65 - 250	No	DEC	8	14:00	22:00
47	RT	Load Forecast Uncertainty	SCE	LA Basin	6/12/2019	10 - 241	No	INC	24	0:00	0:00
48	RT	Load Forecast Uncertainty	SCE	LA Basin	6/13/2019	130	No	INC	12	0:00	12:00
49	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	6/10/2019	50	No	DEC	1	19:00	20:00
50	RT	Load Forecast Uncertainty	SDGE	San Diego-IV	6/10/2019	21 - 290	No	INC	10	14:00	0:00
51	RT	Load Pull	PGAE	Bay Area	6/13/2019	330	No	DEC	5	17:45	22:00
52	RT	Load Pull	SCE	LA Basin	6/13/2019	147.1	No	DEC	3	17:10	20:00
53	RT	Market Disruption	PGAE	Fresno	6/20/2019	83	No	INC	2	16:40	18:00
54	RT	Market Disruption	PGAE	Fresno	6/29/2019	0	No	INC	1	12:45	13:45
55	RT	Market Disruption	SDGE	San Diego-IV	6/29/2019	310	No	DEC	2	11:10	12:40
56	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	6/15/2019	32	No	INC	1	23:00	0:00
57	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	6/16/2019	14 - 32	No	INC	24	0:00	0:00
58	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	6/17/2019	14	No	INC	1	0:00	1:00
59	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	6/18/2019	14	No	DEC	1	21:55	22:00
60	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	6/18/2019	14	No	INC	2	22:00	0:00
61	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	6/21/2019	14 - 15	No	INC	13	11:45	0:00
62	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	6/22/2019	14	No	INC	2	0:00	2:00
63	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	6/23/2019	16	No	INC	3	21:25	0:00
64	RT	Operating Procedure Number and Constraint (7110)	PGAE	Humboldt	6/27/2019	14	No	INC	5	7:00	12:00
65	RT	Operating Procedure Number and Constraint (7230)	PGAE	Sierra	6/20/2019	20	No	INC	3	21:50	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
66	RT	Operating Procedure Number and Constraint (7230)	PGAE	Sierra	6/29/2019	20	No	INC	5	19:05	0:00
67	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	6/16/2019	66	No	DEC	2	18:00	20:00
68	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	6/16/2019	66 - 70	No	INC	11	7:40	18:00
69	RT	Operating Procedure Number and Constraint (7430)	PGAE	Fresno	6/29/2019	60	No	INC	2	12:45	14:00
70	RT	Operating Procedure Number and Constraint (7720)	SCE	NA	6/10/2019	350	No	DEC	4	19:55	23:00
71	RT	Operating Procedure Number and Constraint (7720)	SCE	NA	6/11/2019	420	No	DEC	1	19:00	20:00
72	RT	Operating Procedure Number and Constraint (7720)	SCE	NA	6/11/2019	420 - 475	No	INC	11	10:00	21:00
73	RT	Operating Procedure Number and Constraint (7720)	SCE	NA	6/12/2019	460	No	DEC	4	17:00	21:00
74	RT	Operating Procedure Number and Constraint (7720)	SCE	NA	6/12/2019	460 - 470	No	INC	16	7:00	23:00
75	RT	Operating Procedure Number and Constraint (7720)	SCE	NA	6/13/2019	460	No	INC	18	5:45	23:00
76	RT	Other Reliability Requirement	PGAE	Bay Area	6/4/2019	120 - 180	No	INC	5	14:40	19:00
77	RT	Other Reliability Requirement	PGAE	Bay Area	6/5/2019	120	No	INC	5	16:00	21:00
78	RT	Other Reliability Requirement	PGAE	Bay Area	6/10/2019	120	No	INC	4	15:10	19:00
79	RT	Other Reliability Requirement	PGAE	Fresno	6/1/2019	4 - 12	No	DEC	11	7:00	18:00
80	RT	Other Reliability Requirement	PGAE	Fresno	6/1/2019	4 - 12	No	INC	14	6:00	20:00
81	RT	Other Reliability Requirement	PGAE	Fresno	6/2/2019	4 - 12	No	DEC	10	8:00	18:00
82	RT	Other Reliability Requirement	PGAE	Fresno	6/2/2019	4 - 12	No	INC	14	6:00	20:00
83	RT	Other Reliability Requirement	PGAE	Fresno	6/3/2019	4 - 12	No	DEC	11	7:00	18:00
84	RT	Other Reliability Requirement	PGAE	Fresno	6/3/2019	4 - 12	No	INC	14	6:00	20:00
85	RT	Other Reliability Requirement	PGAE	Fresno	6/4/2019	4 - 12	No	DEC	11	7:00	18:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
86	RT	Other Reliability Requirement	PGAE	Fresno	6/4/2019	4 - 12	No	INC	14	6:00	20:00
87	RT	Other Reliability Requirement	PGAE	Fresno	6/5/2019	4 - 12	No	DEC	11	7:00	18:00
88	RT	Other Reliability Requirement	PGAE	Fresno	6/5/2019	4 - 12	No	INC	14	6:00	20:00
89	RT	Other Reliability Requirement	PGAE	Fresno	6/6/2019	4 - 12	No	DEC	11	8:00	19:00
90	RT	Other Reliability Requirement	PGAE	Fresno	6/6/2019	4 - 12	No	INC	14	6:00	20:00
91	RT	Other Reliability Requirement	PGAE	Fresno	6/7/2019	4 - 12	No	DEC	12	7:00	19:00
92	RT	Other Reliability Requirement	PGAE	Fresno	6/7/2019	4 - 12	No	INC	14	6:00	20:00
93	RT	Other Reliability Requirement	PGAE	Fresno	6/8/2019	4 - 12	No	DEC	12	7:00	19:00
94	RT	Other Reliability Requirement	PGAE	Fresno	6/8/2019	4 - 12	No	INC	24	0:00	0:00
95	RT	Other Reliability Requirement	PGAE	Fresno	6/9/2019	4 - 12	No	DEC	11	7:00	18:00
96	RT	Other Reliability Requirement	PGAE	Fresno	6/9/2019	4 - 12	No	INC	24	0:00	0:00
97	RT	Other Reliability Requirement	PGAE	Fresno	6/10/2019	4 - 12	No	DEC	11	8:00	19:00
98	RT	Other Reliability Requirement	PGAE	Fresno	6/10/2019	4 - 12	No	INC	24	0:00	0:00
99	RT	Other Reliability Requirement	PGAE	Fresno	6/11/2019	4 - 83	No	DEC	12	7:00	19:00
100	RT	Other Reliability Requirement	PGAE	Fresno	6/11/2019	4 - 12	No	INC	24	0:00	0:00
101	RT	Other Reliability Requirement	PGAE	Fresno	6/12/2019	4 - 12	No	DEC	12	7:00	19:00
102	RT	Other Reliability Requirement	PGAE	Fresno	6/12/2019	4 - 12	No	INC	24	0:00	0:00
103	RT	Other Reliability Requirement	PGAE	Fresno	6/13/2019	4 - 11	No	DEC	11	7:00	18:00
104	RT	Other Reliability Requirement	PGAE	Fresno	6/13/2019	4 - 12	No	INC	24	0:00	0:00
105	RT	Other Reliability Requirement	PGAE	Fresno	6/14/2019	4 - 11	No	DEC	12	7:00	19:00
106	RT	Other Reliability Requirement	PGAE	Fresno	6/14/2019	4 - 12	No	INC	24	0:00	0:00
107	RT	Other Reliability Requirement	PGAE	Fresno	6/15/2019	4 - 11	No	DEC	11	7:00	18:00
108	RT	Other Reliability Requirement	PGAE	Fresno	6/15/2019	4 - 12	No	INC	24	0:00	0:00
109	RT	Other Reliability Requirement	PGAE	Fresno	6/16/2019	4 - 11	No	DEC	12	7:00	19:00
110	RT	Other Reliability Requirement	PGAE	Fresno	6/16/2019	4 - 12	No	INC	24	0:00	0:00
111	RT	Other Reliability Requirement	PGAE	Fresno	6/17/2019	4 - 11	No	DEC	11	7:00	18:00
112	RT	Other Reliability Requirement	PGAE	Fresno	6/17/2019	4 - 12	No	INC	24	0:00	0:00
113	RT	Other Reliability Requirement	PGAE	Fresno	6/18/2019	4 - 11	No	DEC	12	7:00	19:00
114	RT	Other Reliability Requirement	PGAE	Fresno	6/18/2019	4 - 12	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
115	RT	Other Reliability Requirement	PGAE	Fresno	6/19/2019	4 - 11	No	DEC	12	7:00	19:00
116	RT	Other Reliability Requirement	PGAE	Fresno	6/19/2019	4 - 12	No	INC	24	0:00	0:00
117	RT	Other Reliability Requirement	PGAE	Fresno	6/20/2019	4 - 11	No	DEC	12	7:00	19:00
118	RT	Other Reliability Requirement	PGAE	Fresno	6/20/2019	4 - 12	No	INC	24	0:00	0:00
119	RT	Other Reliability Requirement	PGAE	Fresno	6/21/2019	4 - 11	No	DEC	12	7:00	19:00
120	RT	Other Reliability Requirement	PGAE	Fresno	6/21/2019	4 - 12	No	INC	24	0:00	0:00
121	RT	Other Reliability Requirement	PGAE	Fresno	6/22/2019	4 - 12	No	INC	24	0:00	0:00
122	RT	Other Reliability Requirement	PGAE	Fresno	6/23/2019	-314	No	DEC	1	7:00	8:00
123	RT	Other Reliability Requirement	PGAE	Fresno	6/23/2019	4 - 12	No	INC	24	0:00	0:00
124	RT	Other Reliability Requirement	PGAE	Fresno	6/24/2019	4 - 12	No	INC	24	0:00	0:00
125	RT	Other Reliability Requirement	PGAE	Fresno	6/25/2019	4 - 12	No	INC	24	0:00	0:00
126	RT	Other Reliability Requirement	PGAE	Fresno	6/26/2019	4 - 12	No	INC	24	0:00	0:00
127	RT	Other Reliability Requirement	PGAE	Fresno	6/27/2019	4 - 12	No	INC	24	0:00	0:00
128	RT	Other Reliability Requirement	PGAE	Fresno	6/28/2019	4 - 12	No	INC	24	0:00	0:00
129	RT	Other Reliability Requirement	PGAE	Fresno	6/29/2019	4 - 12	No	INC	24	0:00	0:00
130	RT	Other Reliability Requirement	PGAE	Fresno	6/30/2019	4 - 12	No	INC	24	0:00	0:00
131	RT	Other Reliability Requirement	PGAE	Kern	6/18/2019	32	No	INC	5	19:45	0:00
132	RT	Other Reliability Requirement	PGAE	Kern	6/19/2019	32	No	INC	6	17:35	23:00
133	RT	Other Reliability Requirement	PGAE	NA	6/1/2019	38	No	DEC	2	9:00	11:00
134	RT	Other Reliability Requirement	PGAE	NA	6/1/2019	38	No	INC	14	6:00	20:00
135	RT	Other Reliability Requirement	PGAE	NA	6/2/2019	38	No	DEC	4	9:00	13:00
136	RT	Other Reliability Requirement	PGAE	NA	6/2/2019	38	No	INC	14	6:00	20:00
137	RT	Other Reliability Requirement	PGAE	NA	6/3/2019	38	No	DEC	7	9:00	16:00
138	RT	Other Reliability Requirement	PGAE	NA	6/3/2019	38	No	INC	14	6:00	20:00
139	RT	Other Reliability Requirement	PGAE	NA	6/4/2019	38	No	DEC	9	8:00	17:00
140	RT	Other Reliability Requirement	PGAE	NA	6/4/2019	38	No	INC	14	6:00	20:00
141	RT	Other Reliability Requirement	PGAE	NA	6/5/2019	38	No	DEC	5	8:00	13:00
142	RT	Other Reliability Requirement	PGAE	NA	6/5/2019	38	No	INC	14	6:00	20:00
143	RT	Other Reliability Requirement	PGAE	NA	6/6/2019	38	No	DEC	4	9:00	13:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
144	RT	Other Reliability Requirement	PGAE	NA	6/6/2019	38	No	INC	14	6:00	20:00
145	RT	Other Reliability Requirement	PGAE	NA	6/7/2019	38	No	DEC	10	8:00	18:00
146	RT	Other Reliability Requirement	PGAE	NA	6/7/2019	38	No	INC	14	6:00	20:00
147	RT	Other Reliability Requirement	PGAE	NA	6/8/2019	38	No	INC	24	0:00	0:00
148	RT	Other Reliability Requirement	PGAE	NA	6/9/2019	38	No	INC	24	0:00	0:00
149	RT	Other Reliability Requirement	PGAE	NA	6/10/2019	38	No	INC	24	0:00	0:00
150	RT	Other Reliability Requirement	PGAE	NA	6/11/2019	350	No	DEC	6	15:05	21:00
151	RT	Other Reliability Requirement	PGAE	NA	6/11/2019	38	No	INC	24	0:00	0:00
152	RT	Other Reliability Requirement	PGAE	NA	6/12/2019	38	No	DEC	1	16:00	17:00
153	RT	Other Reliability Requirement	PGAE	NA	6/12/2019	38	No	INC	24	0:00	0:00
154	RT	Other Reliability Requirement	PGAE	NA	6/13/2019	38	No	DEC	1	17:00	18:00
155	RT	Other Reliability Requirement	PGAE	NA	6/13/2019	38	No	INC	24	0:00	0:00
156	RT	Other Reliability Requirement	PGAE	NA	6/14/2019	38	No	DEC	1	17:00	18:00
157	RT	Other Reliability Requirement	PGAE	NA	6/14/2019	38	No	INC	24	0:00	0:00
158	RT	Other Reliability Requirement	PGAE	NA	6/15/2019	38	No	DEC	1	17:00	18:00
159	RT	Other Reliability Requirement	PGAE	NA	6/15/2019	38	No	INC	24	0:00	0:00
160	RT	Other Reliability Requirement	PGAE	NA	6/16/2019	38	No	DEC	10	8:00	18:00
161	RT	Other Reliability Requirement	PGAE	NA	6/16/2019	38	No	INC	24	0:00	0:00
162	RT	Other Reliability Requirement	PGAE	NA	6/17/2019	38	No	DEC	7	9:00	16:00
163	RT	Other Reliability Requirement	PGAE	NA	6/17/2019	38	No	INC	24	0:00	0:00
164	RT	Other Reliability Requirement	PGAE	NA	6/18/2019	38	No	DEC	2	13:00	15:00
165	RT	Other Reliability Requirement	PGAE	NA	6/18/2019	38	No	INC	24	0:00	0:00
166	RT	Other Reliability Requirement	PGAE	NA	6/19/2019	38	No	DEC	8	9:00	17:00
167	RT	Other Reliability Requirement	PGAE	NA	6/19/2019	38	No	INC	24	0:00	0:00
168	RT	Other Reliability Requirement	PGAE	NA	6/20/2019	38	No	DEC	9	9:00	18:00
169	RT	Other Reliability Requirement	PGAE	NA	6/20/2019	38	No	INC	24	0:00	0:00
170	RT	Other Reliability Requirement	PGAE	NA	6/21/2019	38	No	DEC	10	8:00	18:00
171	RT	Other Reliability Requirement	PGAE	NA	6/21/2019	38	No	INC	24	0:00	0:00
172	RT	Other Reliability Requirement	PGAE	NA	6/22/2019	38	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
173	RT	Other Reliability Requirement	PGAE	NA	6/23/2019	38	No	INC	24	0:00	0:00
174	RT	Other Reliability Requirement	PGAE	NA	6/24/2019	38	No	INC	24	0:00	0:00
175	RT	Other Reliability Requirement	PGAE	NA	6/25/2019	38	No	INC	24	0:00	0:00
176	RT	Other Reliability Requirement	PGAE	NA	6/26/2019	38	No	INC	24	0:00	0:00
177	RT	Other Reliability Requirement	PGAE	NA	6/27/2019	38	No	INC	24	0:00	0:00
178	RT	Other Reliability Requirement	PGAE	NA	6/28/2019	38	No	INC	24	0:00	0:00
179	RT	Other Reliability Requirement	PGAE	NA	6/29/2019	38	No	INC	24	0:00	0:00
180	RT	Other Reliability Requirement	PGAE	NA	6/30/2019	38	No	INC	24	0:00	0:00
181	RT	Other Reliability Requirement	PGAE	NCNB	6/29/2019	63 - 73	No	DEC	2	18:25	19:30
182	RT	Other Reliability Requirement	PGAE	Sierra	6/15/2019	25	No	DEC	1	20:35	21:00
183	RT	Other Reliability Requirement	PGAE	Stockton	6/1/2019	50	No	DEC	22	1:00	23:00
184	RT	Other Reliability Requirement	PGAE	Stockton	6/1/2019	50	No	INC	24	0:00	0:00
185	RT	Other Reliability Requirement	PGAE	Stockton	6/3/2019	40 - 50	No	DEC	21	2:00	23:00
186	RT	Other Reliability Requirement	PGAE	Stockton	6/3/2019	40 - 50	No	INC	18	1:45	19:00
187	RT	Other Reliability Requirement	PGAE	Stockton	6/4/2019	33 - 40	No	DEC	10	10:50	20:00
188	RT	Other Reliability Requirement	PGAE	Stockton	6/4/2019	38 - 40	No	INC	7	12:00	19:00
189	RT	Other Reliability Requirement	PGAE	Stockton	6/5/2019	40	No	DEC	10	10:25	20:00
190	RT	Other Reliability Requirement	PGAE	Stockton	6/5/2019	40	No	INC	1	12:00	13:00
191	RT	Other Reliability Requirement	PGAE	Stockton	6/6/2019	40 - 50	No	DEC	11	10:45	21:00
192	RT	Other Reliability Requirement	PGAE	Stockton	6/6/2019	30 - 50	No	INC	22	0:15	22:00
193	RT	Other Reliability Requirement	PGAE	Stockton	6/7/2019	15 - 50	No	DEC	21	2:00	23:00
194	RT	Other Reliability Requirement	PGAE	Stockton	6/7/2019	15 - 50	No	INC	23	1:35	0:00
195	RT	Other Reliability Requirement	PGAE	Stockton	6/8/2019	12 - 40	No	DEC	24	0:20	0:00
196	RT	Other Reliability Requirement	PGAE	Stockton	6/8/2019	25 - 50	No	INC	16	0:00	16:00
197	RT	Other Reliability Requirement	PGAE	Stockton	6/9/2019	10 - 16	No	DEC	4	0:00	4:00
198	RT	Other Reliability Requirement	PGAE	Stockton	6/9/2019	12 - 50	No	INC	20	4:00	0:00
199	RT	Other Reliability Requirement	PGAE	Stockton	6/10/2019	35 - 50	No	DEC	24	0:00	0:00
200	RT	Other Reliability Requirement	PGAE	Stockton	6/10/2019	35	No	INC	11	3:00	14:00
201	RT	Other Reliability Requirement	PGAE	Stockton	6/11/2019	35 - 50	No	DEC	9	0:00	9:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
202	RT	Other Reliability Requirement	PGAE	Stockton	6/11/2019	50	No	INC	3	9:00	12:00
203	RT	Other Reliability Requirement	PGAE	Stockton	6/12/2019	50	No	DEC	8	0:40	8:00
204	RT	Other Reliability Requirement	PGAE	Stockton	6/13/2019	50 - 55	No	DEC	13	3:20	20:00
205	RT	Other Reliability Requirement	PGAE	Stockton	6/14/2019	20 - 60	No	DEC	13	4:10	17:00
206	RT	Other Reliability Requirement	PGAE	Stockton	6/14/2019	20 - 65	No	INC	19	5:15	0:00
207	RT	Other Reliability Requirement	PGAE	Stockton	6/15/2019	38	No	DEC	10	14:00	0:00
208	RT	Other Reliability Requirement	PGAE	Stockton	6/15/2019	38 - 65	No	INC	23	0:00	23:00
209	RT	Other Reliability Requirement	PGAE	Stockton	6/16/2019	10 - 45	No	DEC	20	0:00	20:00
210	RT	Other Reliability Requirement	PGAE	Stockton	6/16/2019	10 - 45	No	INC	9	6:00	15:00
211	RT	Other Reliability Requirement	PGAE	Stockton	6/17/2019	40 - 55	No	DEC	19	5:00	0:00
212	RT	Other Reliability Requirement	PGAE	Stockton	6/17/2019	50	No	INC	1	4:15	5:00
213	RT	Other Reliability Requirement	PGAE	Stockton	6/18/2019	40 - 60	No	DEC	24	0:00	0:00
214	RT	Other Reliability Requirement	PGAE	Stockton	6/18/2019	40	No	INC	2	6:00	8:00
215	RT	Other Reliability Requirement	PGAE	Stockton	6/19/2019	40 - 50	No	DEC	24	0:00	0:00
216	RT	Other Reliability Requirement	PGAE	Stockton	6/19/2019	45	No	INC	4	9:00	13:00
217	RT	Other Reliability Requirement	PGAE	Stockton	6/20/2019	20 - 40	No	DEC	20	0:00	20:00
218	RT	Other Reliability Requirement	PGAE	Stockton	6/20/2019	20 - 40	No	INC	8	4:00	12:00
219	RT	Other Reliability Requirement	PGAE	Stockton	6/21/2019	45	No	DEC	1	5:00	6:00
220	RT	Other Reliability Requirement	PGAE	Stockton	6/21/2019	45	No	INC	7	5:20	11:30
221	RT	Other Reliability Requirement	PGAE	Stockton	6/25/2019	45	No	INC	2	5:00	7:00
222	RT	Other Reliability Requirement	PGAE	Stockton	6/26/2019	50	No	DEC	1	19:00	20:00
223	RT	Other Reliability Requirement	PGAE	Stockton	6/26/2019	35 - 50	No	INC	13	6:15	19:00
224	RT	Other Reliability Requirement	PGAE	Stockton	6/29/2019	40 - 50	No	DEC	11	12:25	23:00
225	RT	Other Reliability Requirement	PGAE	Stockton	6/29/2019	35 - 70	No	INC	7	17:50	0:00
226	RT	Other Reliability Requirement	PGAE	Stockton	6/30/2019	35 - 60	No	DEC	17	0:00	17:00
227	RT	Other Reliability Requirement	PGAE	Stockton	6/30/2019	40 - 60	No	INC	24	0:40	0:00
228	RT	Other Reliability Requirement	SCE	LA Basin	6/19/2019	190 - 194	No	INC	8	14:40	22:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
229	RT	Other Reliability Requirement	SCE	LA Basin	6/24/2019	190 - 194	No	INC	4	16:00	20:00
230	RT	Other Reliability Requirement	SDGE	San Diego-IV	6/1/2019	20 - 44	No	INC	3	20:50	23:00
231	RT	Planned Transmission Outage	PGAE	Bay Area	6/1/2019	22	No	INC	12	8:35	20:00
232	RT	Planned Transmission Outage	PGAE	Bay Area	6/20/2019	40 - 50	No	INC	10	7:45	17:00
233	RT	Planned Transmission Outage	PGAE	Fresno	6/11/2019	83	No	DEC	4	17:25	21:00
234	RT	Planned Transmission Outage	PGAE	Humboldt	6/3/2019	14	No	DEC	1	21:30	22:00
235	RT	Planned Transmission Outage	PGAE	Humboldt	6/3/2019	14 - 48	No	INC	20	4:20	0:00
236	RT	Planned Transmission Outage	PGAE	Humboldt	6/4/2019	14 - 42	No	INC	24	0:00	0:00
237	RT	Planned Transmission Outage	PGAE	Humboldt	6/5/2019	14 - 46	No	INC	24	0:00	0:00
238	RT	Planned Transmission Outage	PGAE	Humboldt	6/6/2019	14 - 46	No	INC	24	0:00	0:00
239	RT	Planned Transmission Outage	PGAE	Humboldt	6/7/2019	14	No	DEC	20	0:00	19:40
240	RT	Planned Transmission Outage	PGAE	Humboldt	6/7/2019	14 - 42	No	INC	24	0:00	0:00
241	RT	Planned Transmission Outage	PGAE	Humboldt	6/8/2019	14 - 32	No	INC	24	0:00	0:00
242	RT	Planned Transmission Outage	PGAE	Humboldt	6/9/2019	14 - 32	No	INC	24	0:00	0:00
243	RT	Planned Transmission Outage	PGAE	Humboldt	6/10/2019	42	No	DEC	4	17:30	21:00
244	RT	Planned Transmission Outage	PGAE	Humboldt	6/10/2019	14 - 64	No	INC	24	0:00	0:00
245	RT	Planned Transmission Outage	PGAE	Humboldt	6/11/2019	32	No	DEC	4	12:00	16:00
246	RT	Planned Transmission Outage	PGAE	Humboldt	6/11/2019	16 - 65	No	INC	24	0:00	0:00
247	RT	Planned Transmission Outage	PGAE	Humboldt	6/12/2019	28 - 65	No	DEC	12	11:00	23:00
248	RT	Planned Transmission Outage	PGAE	Humboldt	6/12/2019	16 - 65	No	INC	24	0:00	0:00
249	RT	Planned Transmission Outage	PGAE	Humboldt	6/13/2019	32 - 56	No	DEC	9	14:00	23:00
250	RT	Planned Transmission Outage	PGAE	Humboldt	6/13/2019	16 - 65	No	INC	24	0:00	0:00
251	RT	Planned Transmission Outage	PGAE	Humboldt	6/14/2019	14	No	DEC	1	14:40	15:00
252	RT	Planned Transmission Outage	PGAE	Humboldt	6/14/2019	14 - 42	No	INC	24	0:00	0:00
253	RT	Planned Transmission Outage	PGAE	Humboldt	6/15/2019	14	No	DEC	9	6:30	15:15
254	RT	Planned Transmission Outage	PGAE	Humboldt	6/15/2019	14 - 60	No	INC	23	0:00	23:00
255	RT	Planned Transmission Outage	PGAE	Humboldt	6/17/2019	16	No	DEC	4	16:00	20:00
256	RT	Planned Transmission Outage	PGAE	Humboldt	6/17/2019	16 - 32	No	INC	17	7:35	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
257	RT	Planned Transmission Outage	PGAE	Humboldt	6/18/2019	14 - 32	No	INC	24	0:00	0:00
258	RT	Planned Transmission Outage	PGAE	Humboldt	6/19/2019	16 - 30	No	DEC	5	16:30	21:00
259	RT	Planned Transmission Outage	PGAE	Humboldt	6/19/2019	16 - 32	No	INC	24	0:00	0:00
260	RT	Planned Transmission Outage	PGAE	Humboldt	6/20/2019	14 - 15	No	DEC	7	16:00	23:00
261	RT	Planned Transmission Outage	PGAE	Humboldt	6/20/2019	14 - 30	No	INC	24	0:00	0:00
262	RT	Planned Transmission Outage	PGAE	Humboldt	6/21/2019	14 - 30	No	INC	19	0:00	18:25
263	RT	Planned Transmission Outage	PGAE	Humboldt	6/22/2019	30	No	INC	3	21:15	0:00
264	RT	Planned Transmission Outage	PGAE	Humboldt	6/23/2019	16	No	DEC	1	19:00	20:00
265	RT	Planned Transmission Outage	PGAE	Humboldt	6/23/2019	16 - 30	No	INC	19	0:00	19:00
266	RT	Planned Transmission Outage	PGAE	Humboldt	6/24/2019	15	No	INC	16	8:15	0:00
267	RT	Planned Transmission Outage	PGAE	Humboldt	6/25/2019	15	No	INC	1	0:00	1:00
268	RT	Planned Transmission Outage	PGAE	Humboldt	6/28/2019	16	No	INC	12	8:05	20:00
269	RT	Planned Transmission Outage	PGAE	Humboldt	6/30/2019	16 - 32	No	INC	19	5:45	0:00
270	RT	Planned Transmission Outage	PGAE	NCNB	6/3/2019	50 - 60	No	DEC	9	8:15	17:00
271	RT	Planned Transmission Outage	PGAE	NCNB	6/10/2019	65	No	DEC	4	18:00	22:00
272	RT	Planned Transmission Outage	PGAE	Sierra	6/10/2019	32	No	INC	1	19:55	20:45
273	RT	Planned Transmission Outage	PGAE	Stockton	6/7/2019	30	No	INC	1	1:25	1:35
274	RT	Planned Transmission Outage	PGAE	Stockton	6/23/2019	45 - 50	No	DEC	18	6:00	0:00
275	RT	Planned Transmission Outage	PGAE	Stockton	6/23/2019	45	No	INC	14	1:10	15:00
276	RT	Planned Transmission Outage	PGAE	Stockton	6/24/2019	50	No	DEC	6	14:00	20:00
277	RT	Planned Transmission Outage	PGAE	Stockton	6/24/2019	50	No	INC	16	0:00	16:00
278	RT	Planned Transmission Outage	SCE	NA	6/1/2019	200	No	INC	1	0:00	1:00
279	RT	Planned Transmission Outage	SCE	NA	6/2/2019	125	No	INC	15	1:00	16:00
280	RT	Planned Transmission Outage	SCE	NA	6/7/2019	125	No	INC	22	2:00	0:00
281	RT	Planned Transmission Outage	SCE	NA	6/8/2019	125	No	DEC	24	0:00	0:00
282	RT	Planned Transmission Outage	SCE	NA	6/8/2019	125	No	INC	16	1:00	17:00
283	RT	Planned Transmission Outage	SCE	NA	6/9/2019	125 - 200	No	DEC	24	0:00	0:00
284	RT	Planned Transmission Outage	SCE	NA	6/9/2019	125	No	INC	11	4:00	15:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
285	RT	Planned Transmission Outage	SCE	NA	6/10/2019	125 - 200	No	DEC	24	0:00	0:00
286	RT	Planned Transmission Outage	SCE	NA	6/10/2019	125	No	INC	5	7:00	12:00
287	RT	Planned Transmission Outage	SCE	NA	6/11/2019	200	No	DEC	8	16:00	0:00
288	RT	Planned Transmission Outage	SCE	NA	6/12/2019	200	No	DEC	24	0:00	0:00
289	RT	Planned Transmission Outage	SCE	NA	6/13/2019	200	No	DEC	8	16:00	0:00
290	RT	Planned Transmission Outage	SCE	NA	6/14/2019	200	No	DEC	8	16:00	0:00
291	RT	Planned Transmission Outage	SCE	NA	6/15/2019	200	No	DEC	8	16:00	0:00
292	RT	Planned Transmission Outage	SCE	NA	6/16/2019	200	No	DEC	8	16:00	0:00
293	RT	Planned Transmission Outage	SCE	NA	6/17/2019	200	No	DEC	8	16:00	0:00
294	RT	Planned Transmission Outage	SCE	NA	6/18/2019	200	No	DEC	8	16:00	0:00
295	RT	Planned Transmission Outage	SCE	NA	6/19/2019	200	No	DEC	8	16:00	0:00
296	RT	Planned Transmission Outage	SCE	NA	6/20/2019	200	No	DEC	5	19:00	0:00
297	RT	Planned Transmission Outage	SCE	NA	6/20/2019	200	No	INC	3	16:00	19:00
298	RT	Planned Transmission Outage	SCE	NA	6/21/2019	200	No	DEC	3	19:00	22:00
299	RT	Planned Transmission Outage	SCE	NA	6/21/2019	200	No	INC	8	16:00	0:00
300	RT	Planned Transmission Outage	SCE	NA	6/22/2019	200	No	DEC	8	16:00	0:00
301	RT	Planned Transmission Outage	SCE	NA	6/23/2019	200	No	DEC	8	16:00	0:00
302	RT	Planned Transmission Outage	SCE	NA	6/24/2019	200	No	DEC	8	16:00	0:00
303	RT	Planned Transmission Outage	SCE	NA	6/25/2019	200	No	DEC	8	16:00	0:00
304	RT	Planned Transmission Outage	SCE	NA	6/26/2019	200	No	DEC	4	18:00	22:00
305	RT	Planned Transmission Outage	SCE	NA	6/26/2019	200	No	INC	8	16:00	0:00
306	RT	Planned Transmission Outage	SCE	NA	6/27/2019	200	No	DEC	3	19:00	22:00
307	RT	Planned Transmission Outage	SCE	NA	6/27/2019	200	No	INC	8	16:00	0:00
308	RT	Planned Transmission Outage	SCE	NA	6/28/2019	200	No	DEC	3	18:00	21:00
309	RT	Planned Transmission Outage	SCE	NA	6/28/2019	200	No	INC	8	16:00	0:00
310	RT	Planned Transmission Outage	SCE	NA	6/29/2019	200	No	DEC	8	16:00	0:00
311	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/4/2019	7 - 125	No	DEC	12	6:00	18:00
312	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/4/2019	7 - 160	No	INC	18	6:00	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
313	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/5/2019	23 - 125	No	DEC	7	7:00	14:00
314	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/5/2019	23 - 125	No	INC	14	0:00	14:00
315	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/10/2019	400	No	INC	2	20:30	22:00
316	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/12/2019	39	No	DEC	7	14:00	21:00
317	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/12/2019	39	No	INC	1	15:00	16:00
318	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/26/2019	400	No	DEC	3	14:20	17:00
319	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/26/2019	37	No	INC	13	7:35	20:00
320	RT	Ramping Capacity	SDGE	San Diego-IV	6/30/2019	290	No	INC	8	16:00	23:15
321	RT	Reverse Commitment Instruction	PGAE	Fresno	6/10/2019	154 - 157	No	DEC	1	20:45	21:15
322	RT	Software Limitation	PGAE	Bay Area	6/10/2019	120	No	INC	1	19:45	20:15
323	RT	Software Limitation	PGAE	Bay Area	6/12/2019	141.02	No	DEC	1	11:00	11:45
324	RT	Software Limitation	PGAE	Bay Area	6/19/2019	500	No	INC	2	22:05	0:00
325	RT	Software Limitation	PGAE	Fresno	6/11/2019	0	No	INC	1	0:20	1:20
326	RT	Software Limitation	PGAE	Fresno	6/12/2019	400	No	INC	1	18:40	19:05
327	RT	Software Limitation	PGAE	Humboldt	6/10/2019	42 - 56	No	INC	3	7:55	10:00
328	RT	Software Limitation	PGAE	Stockton	6/19/2019	1.5	No	DEC	3	20:45	23:00
329	RT	Software Limitation	PGAE	Stockton	6/19/2019	1.5	No	INC	1	23:00	0:00
330	RT	Software Limitation	SCE	Big Creek-Ventura	6/6/2019	198	No	INC	1	18:45	19:15
331	RT	Software Limitation	SCE	LA Basin	6/10/2019	0	No	INC	13	0:00	12:45
332	RT	Software Limitation	SCE	LA Basin	6/11/2019	48.46	No	INC	1	22:45	23:00
333	RT	Software Limitation	SCE	LA Basin	6/19/2019	0	No	INC	8	16:00	0:00
334	RT	Software Limitation	SCE	LA Basin	6/20/2019	0	No	DEC	9	0:00	8:05
335	RT	Software Limitation	SDGE	San Diego-IV	6/13/2019	200 - 310	No	DEC	1	20:30	21:00
336	RT	SOL	PGAE	Stockton	6/14/2019	25 - 40	No	DEC	3	4:55	7:15
337	RT	Unit Testing	Intertie	NA	6/1/2019	92	No	INC	24	0:00	0:00
338	RT	Unit Testing	Intertie	NA	6/2/2019	1 - 92	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
339	RT	Unit Testing	Intertie	NA	6/3/2019	2 - 50	No	INC	24	0:00	0:00
340	RT	Unit Testing	Intertie	NA	6/4/2019	108	No	INC	24	0:00	0:00
341	RT	Unit Testing	Intertie	NA	6/5/2019	113	No	INC	24	0:00	0:00
342	RT	Unit Testing	Intertie	NA	6/6/2019	5 - 113	No	INC	24	0:00	0:00
343	RT	Unit Testing	Intertie	NA	6/7/2019	0 - 113	No	INC	24	0:00	0:00
344	RT	Unit Testing	Intertie	NA	6/8/2019	50 - 113	No	INC	24	0:00	0:00
345	RT	Unit Testing	Intertie	NA	6/9/2019	15 - 113	No	INC	24	0:00	0:00
346	RT	Unit Testing	Intertie	NA	6/10/2019	113	Yes	INC	1	0:00	1:00
347	RT	Unit Testing	Intertie	NA	6/11/2019	60 - 113	No	INC	24	0:00	0:00
348	RT	Unit Testing	Intertie	NA	6/12/2019	13	No	INC	24	0:00	0:00
349	RT	Unit Testing	Intertie	NA	6/13/2019	53	No	INC	24	0:00	23:10
350	RT	Unit Testing	Intertie	NA	6/14/2019	50	Yes	INC	24	0:00	0:00
351	RT	Unit Testing	Intertie	NA	6/15/2019	15 - 79	No	INC	24	0:00	0:00
352	RT	Unit Testing	Intertie	NA	6/16/2019	79	No	INC	24	0:00	0:00
353	RT	Unit Testing	Intertie	NA	6/17/2019	79	No	INC	24	0:00	0:00
354	RT	Unit Testing	Intertie	NA	6/18/2019	92	Yes	INC	24	0:00	0:00
355	RT	Unit Testing	Intertie	NA	6/19/2019	92	No	INC	24	0:00	0:00
356	RT	Unit Testing	Intertie	NA	6/20/2019	92	No	INC	24	0:00	0:00
357	RT	Unit Testing	Intertie	NA	6/21/2019	92	Yes	INC	24	0:00	0:00
358	RT	Unit Testing	Intertie	NA	6/22/2019	105	No	INC	24	0:00	0:00
359	RT	Unit Testing	Intertie	NA	6/23/2019	105	No	INC	24	0:00	0:00
360	RT	Unit Testing	Intertie	NA	6/24/2019	118	Yes	INC	24	0:00	0:00
361	RT	Unit Testing	Intertie	NA	6/25/2019	118	No	INC	24	0:00	0:00
362	RT	Unit Testing	Intertie	NA	6/26/2019	92	No	INC	24	0:00	0:00
363	RT	Unit Testing	Intertie	NA	6/27/2019	92	Yes	INC	24	0:00	0:00
364	RT	Unit Testing	Intertie	NA	6/28/2019	118	No	INC	24	0:00	0:00
365	RT	Unit Testing	Intertie	NA	6/29/2019	118	No	INC	24	0:00	0:00
366	RT	Unit Testing	Intertie	NA	6/30/2019	118	Yes	INC	24	0:00	0:00
367	RT	Unit Testing	PGAE	Fresno	6/11/2019	90	No	INC	11	7:00	18:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
368	RT	Unit Testing	PGAE	Kern	6/5/2019	0	No	DEC	1	15:05	16:05
369	RT	Unit Testing	PGAE	NA	6/5/2019	0 - 100	No	INC	10	7:00	16:05
370	RT	Unit Testing	PGAE	NA	6/26/2019	204.9 - 549.99	No	INC	6	18:10	0:00
371	RT	Unit Testing	PGAE	NA	6/29/2019	550	No	INC	1	1:05	1:45
372	RT	Unit Testing	PGAE	Sierra	6/5/2019	46	No	INC	4	18:20	22:00
373	RT	Unit Testing	PGAE	Sierra	6/10/2019	46	No	INC	2	19:40	20:45
374	RT	Unit Testing	SCE	Big Creek-Ventura	6/5/2019	435	No	DEC	1	4:10	4:20
375	RT	Unit Testing	SCE	Big Creek-Ventura	6/5/2019	735	No	INC	1	4:20	4:30
376	RT	Unit Testing	SCE	Big Creek-Ventura	6/10/2019	78	No	INC	11	6:00	17:00
377	RT	Unit Testing	SCE	Big Creek-Ventura	6/11/2019	67 - 73	No	INC	13	5:00	17:45
378	RT	Unit Testing	SCE	Big Creek-Ventura	6/20/2019	47.1	No	INC	1	10:30	11:00
379	RT	Unit Testing	SCE	LA Basin	6/2/2019	96	No	INC	1	22:20	23:05
380	RT	Unit Testing	SCE	NA	6/21/2019	41.4	No	INC	1	6:25	7:00
381	RT	Voltage Support	PGAE	Fresno	6/2/2019	83	Yes	INC	2	16:45	18:00
382	RT	Voltage Support	SCE	NA	6/2/2019	125	No	INC	8	16:00	0:00
383	RT	Voltage Support	SCE	NA	6/3/2019	125	No	INC	16	0:00	16:00
384	RT	Voltage Support	SCE	NA	6/4/2019	125	No	INC	13	1:00	14:00
385	RT	Voltage Support	SCE	NA	6/5/2019	125	No	INC	21	3:00	0:00
386	RT	Voltage Support	SCE	NA	6/6/2019	125	No	INC	16	0:00	16:00
387	RT	Voltage Support	SCE	NA	6/12/2019	125	No	DEC	24	0:00	0:00
388	RT	Voltage Support	SCE	NA	6/13/2019	125	No	DEC	24	0:00	0:00
389	RT	Voltage Support	SCE	NA	6/13/2019	125	No	INC	11	3:00	14:00
390	RT	Voltage Support	SCE	NA	6/14/2019	125	No	DEC	24	0:00	0:00
391	RT	Voltage Support	SCE	NA	6/14/2019	125	No	INC	14	2:00	16:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
392	RT	Voltage Support	SCE	NA	6/15/2019	125	No	DEC	24	0:00	0:00
393	RT	Voltage Support	SCE	NA	6/15/2019	125	No	INC	11	6:00	17:00
394	RT	Voltage Support	SCE	NA	6/16/2019	125	No	DEC	24	0:00	0:00
395	RT	Voltage Support	SCE	NA	6/16/2019	125	No	INC	14	3:00	17:00
396	RT	Voltage Support	SCE	NA	6/17/2019	125	No	DEC	24	0:00	0:00
397	RT	Voltage Support	SCE	NA	6/17/2019	125	No	INC	4	15:00	19:00
398	RT	Voltage Support	SCE	NA	6/18/2019	125	No	DEC	24	0:00	0:00
399	RT	Voltage Support	SCE	NA	6/18/2019	125	No	INC	5	8:00	13:00
400	RT	Voltage Support	SCE	NA	6/19/2019	125	No	DEC	24	0:00	0:00
401	RT	Voltage Support	SCE	NA	6/19/2019	125	No	INC	5	8:00	13:00
402	RT	Voltage Support	SCE	NA	6/20/2019	125	No	DEC	24	0:00	0:00
403	RT	Voltage Support	SCE	NA	6/20/2019	125	No	INC	15	3:00	18:00
404	RT	Voltage Support	SCE	NA	6/21/2019	125	No	DEC	24	0:00	0:00
405	RT	Voltage Support	SCE	NA	6/21/2019	125	No	INC	11	7:00	18:00
406	RT	Voltage Support	SCE	NA	6/22/2019	125	No	DEC	24	0:00	0:00
407	RT	Voltage Support	SCE	NA	6/22/2019	125	No	INC	10	6:00	16:00
408	RT	Voltage Support	SCE	NA	6/23/2019	125	No	DEC	24	0:00	0:00
409	RT	Voltage Support	SCE	NA	6/23/2019	125	No	INC	8	7:00	15:00
410	RT	Voltage Support	SCE	NA	6/24/2019	125	No	DEC	24	0:00	0:00
411	RT	Voltage Support	SCE	NA	6/24/2019	125	No	INC	6	7:00	13:00
412	RT	Voltage Support	SCE	NA	6/25/2019	125	No	DEC	24	0:00	0:00
413	RT	Voltage Support	SCE	NA	6/25/2019	125	No	INC	5	8:00	13:00
414	RT	Voltage Support	SCE	NA	6/26/2019	125	No	DEC	24	0:00	0:00
415	RT	Voltage Support	SCE	NA	6/26/2019	125	No	INC	14	3:00	17:00
416	RT	Voltage Support	SCE	NA	6/27/2019	125	No	DEC	24	0:00	0:00
417	RT	Voltage Support	SCE	NA	6/27/2019	125	No	INC	11	7:00	18:00
418	RT	Voltage Support	SCE	NA	6/28/2019	125	No	DEC	24	0:00	0:00
419	RT	Voltage Support	SCE	NA	6/28/2019	125	No	INC	5	8:00	13:00
420	RT	Voltage Support	SCE	NA	6/29/2019	125	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
421	RT	Voltage Support	SCE	NA	6/29/2019	125	No	INC	4	8:00	12:00
422	RT	Voltage Support	SCE	NA	6/30/2019	125	No	DEC	24	0:00	0:00
423	RT	Voltage Support	SCE	NA	6/30/2019	125	No	INC	8	7:00	15:00

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