

December 15, 2022

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

**Re: California Independent System Operator Corporation
Docket Nos. ER08-1178-000 and EL08-88-000
October 2022 Exceptional Dispatch Reports (Charts 1 and 2)**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) submits both its October 2022 (Chart 1) and October 2022 (Chart 2) Exceptional Dispatch reports as required by the Commission in the September 2, 2009 and May 4, 2010 orders. Because the necessary information is available, the CAISO is issuing the Chart 1 and Chart 2 reports on the 15th of the month. Previously, the Chart 2 report was filed on the 30th of the month.

Each report provides information that the Commission directed be included, as set forth in the September 2, 2009 and May 4, 2010 orders. The Chart 1 report (Attachment A), includes exceptional dispatch information except for cost data and the degree of mitigation and price impact analyses. The Chart 2 report (Attachment B), includes all of the information in the Chart 1 report as well as cost data and the degree of mitigation and price impact analyses.

Respectfully submitted,

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ATTACHMENT A

**October 2022 Exceptional Dispatch Report
Chart 1 data**



Exceptional Dispatch Report

Table 1: October 2022

TABLE OF CONTENTS

Introduction	3
The Nature of Exceptional Dispatch.....	3
Appendix A: Explanation by Example	14
Example 1: Exceptional Dispatch Instructions Prior to DAM	14
Example 2: Incremental Exceptional Dispatch Instructions in RTM.....	15
Example 3: Decremental Exceptional Dispatch Instructions in RTM.....	17

LIST OF TABLES AND FIGURES

Table 1: Exceptional Dispatches in October 2022	6
Table 2: Instructions Prior to Day-Ahead Market	14
Table 3: FERC Summary of Instructions Prior to DAM	15
Table 4: Incremental Exceptional Dispatch Instructions in RTM	15
Table 5: FERC Summary of ED Instructions in RTM	16
Table 6: Decremental Exceptional Dispatch Instructions in RTM	17
Table 7: FERC Summary of Decremental ED Instructions in RTM.....	17

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 October 2022.

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 October 2022 was not related to generation or transmission operating procedures: Software Limitation, when an exceptional dispatch instruction was used to bridge schedules across days for resources with a minimum down time of 24 hours, as the CAISO software does not handle multi day commitment. For instance, a

¹ The CAISO can issue exceptional dispatch instructions subject to authority of the CAISO Tariff Section 34.11 and in accordance with CAISO Operating Procedure 2330 (formerly M-402).

² A list of all of the CAISO's publicly available Operating Procedures are available at the following link: <http://www.caiso.com/thegrid/operations/opsdoc/index.html>

resource has a day-ahead schedule from 0600 till 2300, and then is shut down in 2400. If this resource had a minimum down time of 24 hours and it is required the following day, then the CAISO issues an exceptional dispatch to commit this resource in 2400 so it can be dispatched economically in the following day. Software limitation reason was also used for exceptional dispatches to manually issue shut down instructions to a resource because of a temporary Automatic Dispatch System (“ADS”) failure, or similar issues. Interconnection Reliability Operating Limits (IROL) are system operating limits that are established to prevent instability, uncontrolled separation or cascading as described in operating procedure 3100. System Operating Limit (SOL) are the facility ratings, system voltage limits, transient stability limits, and voltage stability limits that are used in the operating horizon – any of which can be the most restrictive limit at any point in time, pre – or post – contingency. Control Point (CP) are imposed to protect the area transmission network against N – 1 contingencies. There were a few other reasons used to explain exceptional dispatch instructions in October 2022, 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 209 exceptional dispatches in October 2022, as compared to 434 exceptional dispatches in September 2022. There were no exceptional dispatches issued as pre-day-ahead commitments. Exceptional dispatches issued for the following reasons accounted for approximately 83

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.

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 October 2022

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 1: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	Bridging Schedules	SCE	NA	10/24/2022	200	No	DEC	1	16:00	17:00
2	RT	Bridging Schedules	SCE	NA	10/24/2022	200	No	INC	8	8:00	16:00
3	RT	Fast Start Unit Management	SCE	LA Basin	10/9/2022	0	No	INC	2	21:45	23:15
4	RT	Load Forecast Uncertainty	SCE	LA Basin	10/5/2022	10	Yes	INC	1	23:00	0:00
5	RT	Load Forecast Uncertainty	SCE	LA Basin	10/6/2022	10	Yes	INC	1	23:00	0:00
6	RT	Market Disruption	PGAE	Bay Area	10/31/2022	150	No	INC	1	21:05	21:30
7	RT	Market Disruption	PGAE	NA	10/10/2022	205	No	DEC	2	19:35	21:00
8	RT	Market Disruption	SDGE	San Diego-IV	10/31/2022	150	No	INC	1	21:05	21:30
9	RT	Other Reliability Requirement	PGAE	Bay Area	10/31/2022	120	No	INC	1	21:30	22:05
10	RT	Other Reliability Requirement	PGAE	Fresno	10/22/2022	20	No	DEC	1	9:05	9:45
11	RT	Other Reliability Requirement	PGAE	Fresno	10/22/2022	20	No	INC	1	9:05	9:45
12	RT	Planned Transmission Outage	PGAE	Bay Area	10/6/2022	22	No	INC	2	22:20	0:00
13	RT	Planned Transmission Outage	PGAE	Bay Area	10/7/2022	22	No	INC	2	0:00	2:00
14	RT	Planned Transmission Outage	PGAE	Bay Area	10/17/2022	400	No	DEC	4	12:30	16:00
15	RT	Planned Transmission Outage	PGAE	Bay Area	10/19/2022	425	No	DEC	9	7:45	16:30
16	RT	Planned Transmission Outage	PGAE	Bay Area	10/28/2022	0	No	DEC	2	22:30	0:00
17	RT	Planned Transmission Outage	PGAE	Bay Area	10/29/2022	0	No	DEC	12	0:00	12:00
18	RT	Planned Transmission Outage	PGAE	Humboldt	10/1/2022	30	No	INC	24	0:00	0:00
19	RT	Planned Transmission Outage	PGAE	Humboldt	10/2/2022	30	No	INC	24	0:00	0:00
20	RT	Planned Transmission Outage	PGAE	Humboldt	10/3/2022	15 - 30	No	DEC	15	8:25	23:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
21	RT	Planned Transmission Outage	PGAE	Humboldt	10/3/2022	15 - 30	No	INC	24	0:00	0:00
22	RT	Planned Transmission Outage	PGAE	Humboldt	10/4/2022	30	No	DEC	9	14:00	23:00
23	RT	Planned Transmission Outage	PGAE	Humboldt	10/4/2022	30	No	INC	24	0:00	0:00
24	RT	Planned Transmission Outage	PGAE	Humboldt	10/5/2022	15 - 30	No	DEC	18	5:00	23:00
25	RT	Planned Transmission Outage	PGAE	Humboldt	10/5/2022	15 - 30	No	INC	24	0:00	0:00
26	RT	Planned Transmission Outage	PGAE	Humboldt	10/6/2022	15 - 30	No	INC	24	0:00	0:00
27	RT	Planned Transmission Outage	PGAE	Humboldt	10/7/2022	30	No	DEC	12	12:00	0:00
28	RT	Planned Transmission Outage	PGAE	Humboldt	10/7/2022	15 - 30	No	INC	12	0:00	12:00
29	RT	Planned Transmission Outage	PGAE	Humboldt	10/8/2022	15 - 30	No	DEC	22	0:00	22:00
30	RT	Planned Transmission Outage	PGAE	Humboldt	10/8/2022	15 - 30	No	INC	24	0:00	0:00
31	RT	Planned Transmission Outage	PGAE	Humboldt	10/9/2022	15 - 45	No	DEC	24	0:00	0:00
32	RT	Planned Transmission Outage	PGAE	Humboldt	10/9/2022	15 - 45	No	INC	24	0:00	0:00
33	RT	Planned Transmission Outage	PGAE	Humboldt	10/10/2022	15 - 30	No	DEC	24	0:00	0:00
34	RT	Planned Transmission Outage	PGAE	Humboldt	10/10/2022	15 - 45	No	INC	24	0:00	0:00
35	RT	Planned Transmission Outage	PGAE	Humboldt	10/11/2022	15 - 45	No	DEC	22	0:00	22:00
36	RT	Planned Transmission Outage	PGAE	Humboldt	10/11/2022	15 - 45	No	INC	24	0:00	0:00
37	RT	Planned Transmission Outage	PGAE	Humboldt	10/12/2022	15 - 45	No	DEC	9	15:00	0:00
38	RT	Planned Transmission Outage	PGAE	Humboldt	10/12/2022	15 - 45	No	INC	24	0:00	0:00
39	RT	Planned Transmission Outage	PGAE	Humboldt	10/13/2022	15 - 60	No	DEC	22	0:00	22:00
40	RT	Planned Transmission Outage	PGAE	Humboldt	10/13/2022	15 - 60	No	INC	24	0:00	0:00
41	RT	Planned Transmission Outage	PGAE	Humboldt	10/14/2022	15 - 60	No	DEC	8	15:00	23:00
42	RT	Planned Transmission Outage	PGAE	Humboldt	10/14/2022	15 - 60	No	INC	24	0:00	0:00
43	RT	Planned Transmission Outage	PGAE	Humboldt	10/15/2022	15	No	DEC	6	18:00	0:00
44	RT	Planned Transmission Outage	PGAE	Humboldt	10/15/2022	15 - 45	No	INC	24	0:00	0:00
45	RT	Planned Transmission Outage	PGAE	Humboldt	10/16/2022	15 - 30	No	DEC	22	1:00	23:00
46	RT	Planned Transmission Outage	PGAE	Humboldt	10/16/2022	15 - 30	No	INC	24	0:00	0:00
47	RT	Planned Transmission Outage	PGAE	Humboldt	10/17/2022	15 - 30	No	DEC	20	4:00	0:00
48	RT	Planned Transmission Outage	PGAE	Humboldt	10/17/2022	15 - 45	No	INC	24	0:00	0:00
49	RT	Planned Transmission Outage	PGAE	Humboldt	10/18/2022	15 - 45	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	Humboldt	10/18/2022	15 - 45	No	INC	24	0:00	0:00
51	RT	Planned Transmission Outage	PGAE	Humboldt	10/19/2022	15 - 45	No	DEC	18	6:00	0:00
52	RT	Planned Transmission Outage	PGAE	Humboldt	10/19/2022	15 - 45	No	INC	14	0:00	14:00
53	RT	Planned Transmission Outage	PGAE	Humboldt	10/20/2022	15 - 30	No	DEC	24	0:00	0:00
54	RT	Planned Transmission Outage	PGAE	Humboldt	10/21/2022	15 - 30	No	DEC	24	0:00	0:00
55	RT	Planned Transmission Outage	PGAE	Humboldt	10/21/2022	30	No	INC	21	0:00	20:15
56	RT	Planned Transmission Outage	PGAE	Humboldt	10/22/2022	15	No	DEC	24	0:00	0:00
57	RT	Planned Transmission Outage	PGAE	Humboldt	10/23/2022	15 - 30	No	DEC	23	0:00	23:00
58	RT	Planned Transmission Outage	PGAE	Humboldt	10/23/2022	30	No	INC	16	8:35	0:00
59	RT	Planned Transmission Outage	PGAE	Humboldt	10/24/2022	15 - 30	No	DEC	17	7:25	0:00
60	RT	Planned Transmission Outage	PGAE	Humboldt	10/24/2022	30	No	INC	24	0:00	0:00
61	RT	Planned Transmission Outage	PGAE	Humboldt	10/25/2022	15	No	DEC	21	0:00	21:00
62	RT	Planned Transmission Outage	PGAE	Humboldt	10/25/2022	30	No	INC	24	0:00	0:00
63	RT	Planned Transmission Outage	PGAE	Humboldt	10/26/2022	30 - 45	No	INC	24	0:00	0:00
64	RT	Planned Transmission Outage	PGAE	Humboldt	10/27/2022	15	No	DEC	6	17:15	22:30
65	RT	Planned Transmission Outage	PGAE	Humboldt	10/27/2022	30 - 45	No	INC	24	0:00	0:00
66	RT	Planned Transmission Outage	PGAE	Humboldt	10/28/2022	15	No	DEC	13	6:30	18:45
67	RT	Planned Transmission Outage	PGAE	Humboldt	10/28/2022	30	No	INC	24	0:00	0:00
68	RT	Planned Transmission Outage	PGAE	Humboldt	10/29/2022	30	No	DEC	9	15:00	0:00
69	RT	Planned Transmission Outage	PGAE	Humboldt	10/29/2022	30	No	INC	16	0:00	16:00
70	RT	Planned Transmission Outage	PGAE	Humboldt	10/30/2022	30	No	INC	24	0:00	0:00
71	RT	Planned Transmission Outage	PGAE	Humboldt	10/31/2022	14	No	DEC	4	20:00	0:00
72	RT	Planned Transmission Outage	PGAE	Humboldt	10/31/2022	15 - 30	No	INC	24	0:00	0:00
73	RT	Planned Transmission Outage	PGAE	NCNB	10/18/2022	55	No	DEC	1	23:25	0:00
74	RT	Planned Transmission Outage	PGAE	NCNB	10/19/2022	55	No	DEC	16	0:00	16:00
75	RT	Planned Transmission Outage	PGAE	NCNB	10/20/2022	57 - 70	No	DEC	14	6:50	20:00
76	RT	Planned Transmission Outage	PGAE	NCNB	10/20/2022	65	No	INC	1	11:00	12:00
77	RT	Planned Transmission Outage	PGAE	NCNB	10/21/2022	57 - 65	No	DEC	14	8:00	22:00
78	RT	Planned Transmission Outage	PGAE	NCNB	10/21/2022	57 - 60	No	INC	1	16:00	17:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
79	RT	Planned Transmission Outage	PGAE	NCNB	10/25/2022	54 - 65	No	DEC	11	10:00	20:30
80	RT	Planned Transmission Outage	PGAE	NCNB	10/30/2022	45	No	DEC	6	7:10	13:00
81	RT	Planned Transmission Outage	PGAE	Sierra	10/1/2022	20	No	DEC	3	18:00	21:00
82	RT	Planned Transmission Outage	PGAE	Sierra	10/1/2022	20 - 40	No	INC	5	17:10	22:00
83	RT	Planned Transmission Outage	PGAE	Sierra	10/2/2022	0	No	DEC	1	18:35	19:30
84	RT	Planned Transmission Outage	PGAE	Sierra	10/5/2022	6	No	DEC	2	20:15	22:00
85	RT	Planned Transmission Outage	PGAE	Sierra	10/14/2022	20 - 42	No	INC	6	8:00	14:00
86	RT	Planned Transmission Outage	PGAE	Sierra	10/25/2022	20 - 45	No	DEC	12	8:00	19:45
87	RT	Planned Transmission Outage	PGAE	Sierra	10/25/2022	20 - 45	No	INC	10	7:00	17:00
88	RT	Planned Transmission Outage	PGAE	Stockton	10/3/2022	89	No	DEC	1	7:45	8:00
89	RT	Planned Transmission Outage	PGAE	Stockton	10/3/2022	89	No	INC	1	8:00	9:00
90	RT	Planned Transmission Outage	PGAE	Stockton	10/4/2022	89	No	DEC	1	7:55	8:00
91	RT	Planned Transmission Outage	PGAE	Stockton	10/4/2022	89	No	INC	1	8:00	9:00
92	RT	Planned Transmission Outage	PGAE	Stockton	10/5/2022	25 - 88.8	No	INC	8	1:20	9:00
93	RT	Planned Transmission Outage	PGAE	Stockton	10/6/2022	25 - 89	No	INC	13	1:35	14:00
94	RT	Planned Transmission Outage	PGAE	Stockton	10/7/2022	89	No	INC	3	10:15	13:00
95	RT	Planned Transmission Outage	PGAE	Stockton	10/8/2022	88.8 - 250	No	INC	17	6:30	23:00
96	RT	Planned Transmission Outage	PGAE	Stockton	10/27/2022	30 - 60	No	INC	2	7:15	9:15
97	RT	Planned Transmission Outage	PGAE	NA	10/28/2022	19	No	INC	15	9:05	0:00
98	RT	Planned Transmission Outage	PGAE	NA	10/29/2022	19	No	INC	2	0:00	1:30
99	RT	Planned Transmission Outage	PGAE	NA	10/31/2022	17	No	DEC	1	5:50	6:30
100	RT	Planned Transmission Outage	SCE	NA	10/5/2022	460	No	DEC	1	17:00	17:30
101	RT	Planned Transmission Outage	SCE	NA	10/5/2022	460	No	INC	3	14:35	17:00
102	RT	Ramping Capacity	PGAE	NCNB	10/20/2022	67 - 70	No	DEC	1	6:45	7:30
103	RT	Ramping Capacity	SCE	LA Basin	10/3/2022	194	No	INC	5	16:45	21:00
104	RT	Ramping Capacity	SCE	LA Basin	10/5/2022	194	No	INC	5	16:00	21:00
105	RT	Reliability Assessment	PGAE	Bay Area	10/6/2022	22	No	INC	5	11:15	16:00
106	RT	Reliability Assessment	PGAE	Fresno	10/26/2022	325	No	DEC	1	18:05	19:00
107	RT	Reliability Assessment	PGAE	Fresno	10/26/2022	325	No	INC	2	18:05	20:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
108	RT	Reliability Assessment	PGAE	NCNB	10/7/2022	30 - 63	No	DEC	11	9:30	20:00
109	RT	Reliability Assessment	PGAE	NCNB	10/10/2022	60 - 65	No	DEC	6	18:30	0:00
110	RT	Reliability Assessment	PGAE	NCNB	10/11/2022	65 - 70	No	DEC	1	0:00	1:00
111	RT	Reliability Assessment	PGAE	NCNB	10/22/2022	67 - 70	No	DEC	12	8:45	20:00
112	RT	Reliability Assessment	PGAE	NCNB	10/22/2022	77 - 80	No	INC	12	8:45	20:00
113	RT	Reliability Assessment	PGAE	Sierra	10/2/2022	20	No	INC	4	17:10	21:00
114	RT	Reliability Assessment	PGAE	Sierra	10/5/2022	20	No	DEC	2	18:00	20:00
115	RT	Reliability Assessment	PGAE	Sierra	10/5/2022	20	No	INC	1	17:35	18:00
116	RT	Reliability Assessment	PGAE	Sierra	10/6/2022	20	No	DEC	1	18:00	19:00
117	RT	Reliability Assessment	PGAE	Sierra	10/6/2022	20	No	INC	7	15:45	22:00
118	RT	Reliability Assessment	PGAE	Sierra	10/7/2022	20	No	INC	3	18:55	21:00
119	RT	Reliability Assessment	PGAE	Sierra	10/8/2022	20	No	INC	2	19:55	21:00
120	RT	Reliability Assessment	PGAE	Sierra	10/13/2022	20	No	INC	6	16:25	22:00
121	RT	Reliability Assessment	PGAE	Sierra	10/14/2022	42	No	INC	10	12:10	22:00
122	RT	Reliability Assessment	PGAE	Stockton	10/6/2022	191.1	No	DEC	4	18:15	22:00
123	RT	Reliability Assessment	PGAE	Stockton	10/6/2022	15 - 25	No	INC	5	17:15	22:00
124	RT	Reliability Assessment	PGAE	Stockton	10/7/2022	200	No	DEC	4	16:30	20:00
125	RT	Reliability Assessment	SCE	NA	10/5/2022	460	No	DEC	2	17:05	19:00
126	RT	Reliability Assessment	SCE	NA	10/17/2022	25	No	DEC	5	17:00	22:00
127	RT	Reliability Assessment	SCE	NA	10/17/2022	25	No	INC	18	6:50	0:00
128	RT	Reliability Assessment	SCE	NA	10/18/2022	25	No	INC	12	0:00	12:00
129	RT	Reliability Assessment	SDGE	San Diego-IV	10/18/2022	25	No	DEC	2	18:00	20:00
130	RT	Reliability Assessment	SDGE	San Diego-IV	10/18/2022	25	No	INC	16	8:30	0:00
131	RT	Software Limitation	PGAE	Bay Area	10/6/2022	22	No	INC	1	16:10	17:00
132	RT	Software Limitation	PGAE	Bay Area	10/31/2022	0 - 198	No	INC	3	21:05	23:20
133	RT	Software Limitation	PGAE	Fresno	10/9/2022	83	No	DEC	2	18:00	20:00
134	RT	Software Limitation	PGAE	Fresno	10/9/2022	83	No	INC	2	16:45	18:00
135	RT	Software Limitation	PGAE	Fresno	10/31/2022	398 - 404	No	INC	1	21:00	21:15
136	RT	Software Limitation	PGAE	Stockton	10/6/2022	0	No	INC	1	22:35	23:35

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
137	RT	Software Limitation	PGAE	NA	10/9/2022	200	No	DEC	1	17:00	18:00
138	RT	Software Limitation	PGAE	NA	10/9/2022	200	No	INC	1	16:40	17:00
139	RT	Software Limitation	PGAE	NA	10/31/2022	0 - 200	No	DEC	3	21:05	23:45
140	RT	Software Limitation	SCE	LA Basin	10/9/2022	5 - 90.58	No	INC	1	20:00	20:55
141	RT	Software Limitation	SCE	LA Basin	10/16/2022	0 - 90.58	No	INC	5	19:50	0:00
142	RT	Software Limitation	SCE	LA Basin	10/17/2022	0	No	INC	1	0:00	0:20
143	RT	Unit Testing	PGAE	NA	10/20/2022	234	No	INC	3	8:10	11:00
144	RT	Unit Testing	SCE	Big Creek-Ventura	10/4/2022	127	No	INC	1	0:25	1:05
145	RT	Unit Testing	SCE	Big Creek-Ventura	10/5/2022	19.27	No	INC	1	7:30	8:10
146	RT	Unit Testing	SCE	Big Creek-Ventura	10/15/2022	127	No	INC	1	7:45	8:25
147	RT	Unit Testing	SCE	LA Basin	10/4/2022	459.83	No	DEC	1	12:40	13:20
148	RT	Unit Testing	SCE	LA Basin	10/4/2022	48.24 - 49.65	No	INC	1	13:35	14:20
149	RT	Unit Testing	SCE	NA	10/5/2022	17	No	DEC	1	17:15	18:00
150	RT	Unit Testing	SDGE	NA	10/31/2022	1	No	INC	1	15:00	16:00
151	RT	Unplanned Outage	PGAE	Fresno	10/16/2022	83 - 140	No	INC	1	20:00	21:00
152	RT	Unplanned Outage	PGAE	Fresno	10/29/2022	404 - 407	No	INC	1	20:25	20:30
153	RT	Unplanned Outage	PGAE	NA	10/16/2022	196	No	DEC	1	20:15	21:15
154	RT	Unplanned Outage	PGAE	NA	10/16/2022	417	No	INC	1	19:55	20:15
155	RT	Unplanned Outage	SDGE	San Diego-IV	10/16/2022	400	No	INC	1	20:10	21:10
156	RT	Voltage Support	PGAE	Fresno	10/2/2022	-340	No	DEC	3	5:35	8:00
157	RT	Voltage Support	PGAE	Fresno	10/3/2022	-340	No	DEC	3	3:55	6:30
158	RT	Voltage Support	PGAE	Fresno	10/16/2022	-340	No	DEC	4	4:55	8:00
159	RT	Voltage Support	PGAE	Fresno	10/17/2022	-340	No	DEC	20	4:00	0:00
160	RT	Voltage Support	PGAE	Fresno	10/17/2022	0	No	INC	1	22:00	23:00
161	RT	Voltage Support	PGAE	Fresno	10/18/2022	-340	No	DEC	24	0:00	0:00
162	RT	Voltage Support	PGAE	Fresno	10/19/2022	-340	No	DEC	11	0:00	10:30
163	RT	Voltage Support	PGAE	Fresno	10/19/2022	22.37	No	INC	6	1:35	7:00
164	RT	Voltage Support	PGAE	Fresno	10/20/2022	-340	No	DEC	24	0:35	0:00

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
165	RT	Voltage Support	PGAE	Fresno	10/20/2022	0	No	INC	23	1:00	23:30
166	RT	Voltage Support	PGAE	Fresno	10/21/2022	-340	No	DEC	24	0:00	0:00
167	RT	Voltage Support	PGAE	Fresno	10/22/2022	-340	No	DEC	24	0:00	0:00
168	RT	Voltage Support	PGAE	Fresno	10/22/2022	0	No	INC	1	22:00	22:30
169	RT	Voltage Support	PGAE	Fresno	10/23/2022	-340	No	DEC	24	0:00	0:00
170	RT	Voltage Support	PGAE	Fresno	10/23/2022	0 - 83	No	INC	13	10:35	22:45
171	RT	Voltage Support	PGAE	Fresno	10/24/2022	-340	No	DEC	24	0:00	0:00
172	RT	Voltage Support	PGAE	Fresno	10/25/2022	-340	No	DEC	9	0:00	8:15
173	RT	Voltage Support	PGAE	Fresno	10/26/2022	-330	No	INC	6	2:00	8:00
174	RT	Voltage Support	PGAE	Fresno	10/28/2022	-340	No	DEC	5	19:45	0:00
175	RT	Voltage Support	PGAE	Fresno	10/28/2022	-330	No	INC	4	4:45	8:00
176	RT	Voltage Support	PGAE	Fresno	10/29/2022	-340	No	DEC	24	0:00	0:00
177	RT	Voltage Support	PGAE	Fresno	10/29/2022	0	No	INC	2	21:00	22:30
178	RT	Voltage Support	PGAE	Fresno	10/30/2022	-340	No	DEC	16	0:00	16:00
179	RT	Voltage Support	PGAE	Fresno	10/30/2022	-330	No	INC	3	21:45	0:00
180	RT	Voltage Support	PGAE	Fresno	10/31/2022	-330	No	INC	7	0:00	7:00
181	RT	Voltage Support	PGAE	Humboldt	10/28/2022	15	No	DEC	2	18:45	20:30
182	RT	Voltage Support	PGAE	Sierra	10/3/2022	20	No	INC	1	23:45	0:00
183	RT	Voltage Support	PGAE	Sierra	10/4/2022	20	Yes	INC	7	0:00	7:00
184	RT	Voltage Support	PGAE	Sierra	10/13/2022	20	No	INC	3	3:30	6:00
185	RT	Voltage Support	PGAE	Sierra	10/15/2022	20	No	INC	14	3:10	16:30
186	RT	Voltage Support	PGAE	Sierra	10/16/2022	20	No	INC	14	2:15	16:00
187	RT	Voltage Support	PGAE	Sierra	10/17/2022	20	No	INC	5	2:10	7:00
188	RT	Voltage Support	PGAE	Sierra	10/22/2022	20	No	DEC	4	18:00	22:00
189	RT	Voltage Support	PGAE	Sierra	10/22/2022	20	No	INC	20	4:00	0:00
190	RT	Voltage Support	PGAE	Sierra	10/23/2022	20	No	DEC	3	18:00	21:00
191	RT	Voltage Support	PGAE	Sierra	10/23/2022	20	No	INC	24	0:00	0:00
192	RT	Voltage Support	PGAE	Sierra	10/24/2022	20	No	INC	24	0:00	0:00
193	RT	Voltage Support	PGAE	Sierra	10/25/2022	20	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
194	RT	Voltage Support	PGAE	Sierra	10/26/2022	45	No	DEC	11	7:45	18:00
195	RT	Voltage Support	PGAE	Sierra	10/26/2022	20 - 45	Yes	INC	17	0:00	17:00
196	RT	Voltage Support	PGAE	Sierra	10/27/2022	20	No	INC	20	4:15	0:00
197	RT	Voltage Support	PGAE	Sierra	10/28/2022	20	Yes	INC	24	0:00	0:00
198	RT	Voltage Support	PGAE	Sierra	10/29/2022	20	Yes	INC	24	0:00	0:00
199	RT	Voltage Support	PGAE	Sierra	10/30/2022	20	No	DEC	4	19:10	23:00
200	RT	Voltage Support	PGAE	Sierra	10/30/2022	20	No	INC	24	0:00	0:00
201	RT	Voltage Support	PGAE	Sierra	10/31/2022	20	Yes	INC	7	0:00	7:00
202	RT	Voltage Support	PGAE	NA	10/17/2022	49	No	INC	3	4:20	7:00
203	RT	Voltage Support	PGAE	NA	10/19/2022	48.95	No	DEC	5	2:20	7:00
204	RT	Voltage Support	PGAE	NA	10/28/2022	195.8	No	DEC	2	22:30	0:00
205	RT	Voltage Support	PGAE	NA	10/29/2022	147 - 307	No	DEC	24	0:00	0:00
206	RT	Voltage Support	PGAE	NA	10/29/2022	19	No	INC	23	1:30	0:00
207	RT	Voltage Support	PGAE	NA	10/30/2022	19 - 49	No	DEC	18	6:00	0:00
208	RT	Voltage Support	PGAE	NA	10/30/2022	19	No	INC	6	0:00	6:00
209	RT	Voltage Support	PGAE	NA	10/31/2022	49	No	DEC	6	0:00	6:00

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

ATTACHMENT B

**October 2022 Exceptional Dispatch Report
Chart 2 data**



Exceptional Dispatch Report

Table 2: October 2022

Market Analysis and Forecasting

December 15, 2022

TABLE OF CONTENTS

Introduction	3
The Nature of Exceptional Dispatch.....	3
Appendix A: Explanation by Example	19
Example 1: Exceptional Dispatch Instructions Prior to DAM	19
Example 2: Incremental Exceptional Dispatch Instructions in RTM.....	19
Example 3: Decremental Exceptional Dispatch Instructions in RTM	21
Appendix B: Price Impact Analysis	23
Appendix C: Exceptional Dispatch Bid Mitigation Analysis	35

LIST OF TABLES AND FIGURES

Table 1: Exceptional Dispatches in October 2022	7
Table 2: Instructions Prior to Day-Ahead Market	19
Table 3: FERC Summary of Instructions Prior to DAM	19
Table 4: Incremental Exceptional Dispatch Instructions in RTM	20
Table 5: FERC Summary of ED Instructions in RTM	21
Table 6: Decremental Exceptional Dispatch Instructions in RTM	21
Table 7: FERC Summary of Decremental ED Instructions in RTM.....	22
Table 8: Price Impact Analysis Information for Pricing Node A in PG&E LAP	24
Table 9: Price Impact Analysis Information for Pricing Node B in SCE LAP	25
Table 10: Bid Mitigation Analysis for October 2022	35

Introduction

This report is filed pursuant to FERC’s September 2, 2009, and May 4, 2010, orders in 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, reasons and costs for Exceptional Dispatches issued in October 2022.

This report contains a price impact analysis as prescribed by FERC in its September 2 order. The price impact analysis for the month of October is presented in Appendix B. This report also includes mitigation analysis for October 2022 required by section 34.11.4 of the CAISO tariff. This analysis compares those Exceptional Dispatches subject to bid mitigation (i.e. Exceptional Dispatches to address noncompetitive constraints and Delta Dispatch), and determines the cost difference between the Exceptional Dispatch bid mitigation settlement rules and what the settlement amount would have been had the Exceptional Dispatches not been subject to bid mitigation. The Exceptional Dispatch bid mitigation analysis for October is presented in Appendix C.

The Nature of Exceptional Dispatch

The CAISO can issue exceptional dispatch instructions for a resource as a pre-day-ahead unit commitment, a post day-ahead unit commitment or a real-time exceptional dispatch. A pre-day-ahead unit commitment is an exceptional dispatch instruction committing a resource at or above its physical minimum (Pmin) operating level in the day-ahead market. A post-day-ahead unit commitment is an exceptional dispatch instruction committing a resource at or above its (Pmin) operating level in the real-time market. A real-time exceptional dispatch instructs a resource to operate at or above its physical minimum operating point. A real-time exceptional dispatch above the resource’s day-ahead award is an incremental exceptional dispatch instruction and a real-time exceptional dispatch below the day-ahead award is considered 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. Reliability requirements are calculated for both local area and the system wide needs, and are classified into various requirements including local generation, transmission management, non-modeled transmission outages, ramping and intertie emergency assistance. Whenever the CAISO issues an exceptional dispatch instruction, the operators log these instructions and the associated reason for each instruction.

Most of the generation procedures are internal to the CAISO and not available publicly on the CAISO website; however, all of the transmission procedures are available on the CAISO website.¹

Additional reasons for exceptional dispatch instructions in 2022 include Software Limitation. Software Limitation is used when an exceptional dispatch instruction was issued 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 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 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 October, which are self-explanatory.

The data in Table 1 is based on a template specified in the September 2009 order.² This table contains all the information published in Table 1 of the first report for October 2022. In addition, it contains volume (MWh) and cost information. Each entry in Table 1 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; (6) End Time; (7) Total Volume (MWh); (8) Min Load Cost; (9) Start Up Cost; (10) CC6470; (11) ED Volume (MWh INC/DEC); (12) CC6470 INC; (13) CC6470 DEC; (14) CC6482; (15) CC6488; and (16) CC6620. Each column is defined:

¹ A list of all of the CAISO’s Operating Procedures and all the publicly available Operating Procedures are available at the following link:
<http://www.caiso.com/thegrid/operations/opsdoc/index.html>

² The data in Table 1 is principally SLIC information supplemented with data from the Market Quality System (MQS) and Settlements database. The volume and cost information is based on t+51B Recalculation Statements.

- The MW column shows the range of exceptional dispatch instruction in MW for the classification.
- The Commitment column specifies if there was a unit commitment for the classification.
- The INC/DEC/NA column specifies if there was an incremental dispatch (INC), a decremental dispatch (DEC), or only a unit commitment (NA). The Begin Time and End Time columns show the start and end time of exceptional dispatch for the classification respectively.
- The Hours column is the time difference between begin time and end time rounded up to the next hour.
- The total volume column shows the total MWh dispatch quantity dispatched for that classification. This quantity includes the minimum load quantity, the imbalance energy quantity, and the exceptional dispatch quantity.
- The Min-Load Cost column shows eligible minimum load cost for the classification.
- The Start-Up Cost column shows the eligible start up cost for the classification. The CAISO does not explicitly pay resources for its start up and minimum load costs; however, it ensures that resources are compensated adequately through its bid cost recovery.³
- The CC6470 column shows the total imbalance energy costs for the classification. This cost contains the portion of exceptional dispatch instruction settled as optimal energy due to its bid price being less than the LMP in the relevant settlement interval.
- The ED Volume MWh (MWh INC/DEC) column shows the incremental or the decremental portion of the real-time exceptional dispatch MWh for the classification. The CC6470-INC shows that portion of incremental exceptional dispatch instruction settled at the resource LMP.
- The CC6470-DEC column shows that portion of decremental exceptional dispatch instruction settled at the resource specific LMP. Both these charge codes are portions of the real-time instructed imbalance energy charge code (6470).⁴
- The CC6482 column shows the real-time excess cost for the classification.⁵
- The CC6488 column shows the real-time exceptional dispatch uplift settlement for the classification.⁶ The CC6620 shows the bid cost recovery payment for the classification. This cost is shown for all pre-day-ahead unit commitments only.

³ For further details regarding the Bid Cost Recovery process please refer to section 11.8 of the CAISO tariff.

⁴ For further details please refer to the BPM configuration Guide: Real-Time Instructed Imbalance Energy Settlement published on the CAISO's website.

⁵ For further details please refer to the BPM configuration Guide: Real Time Excess Cost for Instructed Energy Settlement published on the CAISO's website.

⁶ For further details please refer to the BPM configuration Guide: Real Time Exceptional Dispatch Uplift Settlement published on the CAISO's website.

Charge codes 6470, 6470 INC, 6470 DEC, 6482 and 6488 are shown in Table 1 because all these charge codes pertain to real-time exceptional dispatch MWH quantities. The classification of data is further explained for example in Attachment A.

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 2330C 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.

Table 1: Exceptional Dispatches in October 2022

California Independent System Operator Corporation Exceptional Dispatch Report December 15, 2022																					
Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022																					
Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
1	RT	Bridging Schedules	SCE	NA	10/24/2022	200	No	DEC	1	16:00	17:00	11.19	0.00	0.00	442.41	0.00	0.00	0.00	0.00	0.00	0.00
2	RT	Bridging Schedules	SCE	NA	10/24/2022	200	No	INC	8	8:00	16:00	169.51	111982.74	0.00	-1276.00	0.00	0.00	0.00	0.00	0.00	0.00
3	RT	Fast Start Unit Management	SCE	LA Basin	10/9/2022	0	No	INC	2	21:45	23:15	-90.94	0.00	0.00	0.00	-90.94	0.00	0.00	0.00	0.00	0.00
4	RT	Load Forecast Uncertainty	SCE	LA Basin	10/5/2022	10	Yes	INC	1	23:00	0:00	0.00	3683.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	RT	Load Forecast Uncertainty	SCE	LA Basin	10/6/2022	10	Yes	INC	1	23:00	0:00	0.00	7965.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	RT	Market Disruption	PGAE	Bay Area	10/31/2022	150	No	INC	1	21:05	21:30	61.56	0.00	0.00	-3769.88	61.56	3769.88	0.00	0.00	0.00	0.00
7	RT	Market Disruption	PGAE	NA	10/10/2022	205	No	DEC	2	19:35	21:00	293.14	-1889.39	0.00	-24165.84	0.00	0.00	0.00	0.00	0.00	0.00
8	RT	Market Disruption	SDGE	San Diego-IV	10/31/2022	150	No	INC	1	21:05	21:30	52.13	0.00	0.00	-3155.88	52.13	3155.88	0.00	0.00	0.00	0.00
9	RT	Other Reliability Requirement	PGAE	Bay Area	10/31/2022	120	No	INC	1	21:30	22:05	17.75	8168.71	0.00	-1047.07	-6.38	0.00	355.66	0.00	0.00	0.00
10	RT	Other Reliability Requirement	PGAE	Fresno	10/22/2022	20	No	DEC	1	9:05	9:45	16.17	0.00	0.00	-970.17	0.00	0.00	0.00	0.00	0.00	0.00
11	RT	Other Reliability Requirement	PGAE	Fresno	10/22/2022	20	No	INC	1	9:05	9:45	12.41	424.67	0.00	-765.74	0.00	0.00	0.00	0.00	0.00	0.00
12	RT	Planned Transmission Outage	PGAE	Bay Area	10/6/2022	22	No	INC	2	22:20	0:00	18.56	0.00	0.00	-3205.29	0.00	0.00	0.00	0.00	0.00	0.00
13	RT	Planned Transmission Outage	PGAE	Bay Area	10/7/2022	22	No	INC	2	0:00	2:00	77.19	0.00	0.00	-5861.26	0.00	0.00	0.00	0.00	0.00	0.00
14	RT	Planned Transmission Outage	PGAE	Bay Area	10/17/2022	400	No	DEC	4	12:30	16:00	6.36	0.00	0.00	-1502.53	-8.98	0.00	806.02	0.00	10401.17	0.00
15	RT	Planned Transmission Outage	PGAE	Bay Area	10/19/2022	425	No	DEC	9	7:45	16:30	-4.34	0.00	0.00	1055.36	-41.19	0.00	3610.53	0.00	-3604.38	0.00
16	RT	Planned Transmission Outage	PGAE	Bay Area	10/28/2022	0	No	DEC	2	22:30	0:00	-0.05	0.00	0.00	3.26	0.00	0.00	0.00	0.00	0.00	0.00
17	RT	Planned Transmission Outage	PGAE	Bay Area	10/29/2022	0	No	DEC	12	0:00	12:00	-0.79	0.00	0.00	51.18	0.00	0.00	0.00	0.00	-174.94	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
18	RT	Planned Transmission Outage	PGAE	Humboldt	10/1/2022	30	No	INC	24	0:00	0:00	-0.26	58467.18	0.00	11.12	-0.43	0.00	17.87	0.00	0.00	0.00
19	RT	Planned Transmission Outage	PGAE	Humboldt	10/2/2022	30	No	INC	24	0:00	0:00	0.00	52951.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	RT	Planned Transmission Outage	PGAE	Humboldt	10/3/2022	15 - 30	No	DEC	15	8:25	23:00	6.23	-35513.33	547.03	-410.84	0.00	0.00	0.00	0.00	0.00	0.00
21	RT	Planned Transmission Outage	PGAE	Humboldt	10/3/2022	15 - 30	No	INC	24	0:00	0:00	5.87	29785.17	0.00	-351.96	0.00	0.00	0.00	0.00	0.00	0.00
22	RT	Planned Transmission Outage	PGAE	Humboldt	10/4/2022	30	No	DEC	9	14:00	23:00	0.20	-37979.60	0.00	-55.95	0.00	0.00	0.00	0.00	0.00	0.00
23	RT	Planned Transmission Outage	PGAE	Humboldt	10/4/2022	30	No	INC	24	0:00	0:00	18.15	47435.83	0.00	-965.40	0.00	0.00	0.00	0.00	0.00	0.00
24	RT	Planned Transmission Outage	PGAE	Humboldt	10/5/2022	15 - 30	No	DEC	18	5:00	23:00	-8.20	-33600.99	0.00	711.16	0.00	0.00	0.00	0.00	0.00	0.00
25	RT	Planned Transmission Outage	PGAE	Humboldt	10/5/2022	15 - 30	No	INC	24	0:00	0:00	0.68	44415.72	0.00	-28.03	0.00	0.00	0.00	0.00	0.00	0.00
26	RT	Planned Transmission Outage	PGAE	Humboldt	10/6/2022	15 - 30	No	INC	24	0:00	0:00	-7.84	73828.80	0.00	746.35	-1.88	0.00	206.44	0.00	-128.03	0.00
27	RT	Planned Transmission Outage	PGAE	Humboldt	10/7/2022	30	No	DEC	12	12:00	0:00	-19.47	-7236.37	0.00	2234.58	-1.67	0.00	130.99	0.00	-1874.76	0.00
28	RT	Planned Transmission Outage	PGAE	Humboldt	10/7/2022	15 - 30	No	INC	12	0:00	12:00	6.78	34086.42	0.00	-541.12	0.00	0.00	0.00	0.00	0.00	0.00
29	RT	Planned Transmission Outage	PGAE	Humboldt	10/8/2022	15 - 30	No	DEC	22	0:00	22:00	4.25	1300.46	0.00	-442.51	0.00	0.00	0.00	0.00	-427.51	0.00
30	RT	Planned Transmission Outage	PGAE	Humboldt	10/8/2022	15 - 30	No	INC	24	0:00	0:00	-17.99	33486.85	0.00	1331.68	-1.59	0.00	113.74	0.00	-50.66	0.00
31	RT	Planned Transmission Outage	PGAE	Humboldt	10/9/2022	15 - 45	No	DEC	24	0:00	0:00	-0.74	-216.74	0.00	-15.30	0.00	0.00	0.00	0.00	-27.82	0.00
32	RT	Planned Transmission Outage	PGAE	Humboldt	10/9/2022	15 - 45	No	INC	24	0:00	0:00	8.51	22758.05	0.00	-430.88	0.00	0.00	0.00	0.00	0.00	0.00
33	RT	Planned Transmission Outage	PGAE	Humboldt	10/10/2022	15 - 30	No	DEC	24	0:00	0:00	-0.74	-1461.86	0.00	203.58	-0.73	0.00	196.40	0.00	-423.65	0.00
34	RT	Planned Transmission Outage	PGAE	Humboldt	10/10/2022	15 - 45	No	INC	24	0:00	0:00	6.84	34137.08	0.00	267.79	0.00	0.00	0.00	0.00	0.00	0.00
35	RT	Planned Transmission Outage	PGAE	Humboldt	10/11/2022	15 - 45	No	DEC	22	0:00	22:00	-2.03	-80983.32	0.00	245.22	0.00	0.00	0.00	0.00	-871.00	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620	
36	RT	Planned Transmission Outage	PGAE	Humboldt	10/11/2022	15 - 45	No	INC	24	0:00	0:00	0.01	29172.37	0.00	18.46	0.00	0.00	0.00	0.00	0.00	0.00	
37	RT	Planned Transmission Outage	PGAE	Humboldt	10/12/2022	15 - 45	No	DEC	9	15:00	0:00	-8.61	-39659.76	0.00	899.12	0.00	0.00	0.00	0.00	0.00	-536.02	0.00
38	RT	Planned Transmission Outage	PGAE	Humboldt	10/12/2022	15 - 45	No	INC	24	0:00	0:00	0.38	65124.43	0.00	-27.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39	RT	Planned Transmission Outage	PGAE	Humboldt	10/13/2022	15 - 60	No	DEC	22	0:00	22:00	-0.83	-33510.17	0.00	84.19	0.00	0.00	0.00	0.00	0.00	-1052.30	0.00
40	RT	Planned Transmission Outage	PGAE	Humboldt	10/13/2022	15 - 60	No	INC	24	0:00	0:00	3.80	81344.44	0.00	-580.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41	RT	Planned Transmission Outage	PGAE	Humboldt	10/14/2022	15 - 60	No	DEC	8	15:00	23:00	-0.39	-39021.63	0.00	78.83	0.00	0.00	0.00	0.00	0.00	-440.87	0.00
42	RT	Planned Transmission Outage	PGAE	Humboldt	10/14/2022	15 - 60	No	INC	24	0:00	0:00	5.09	75043.31	0.00	-422.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
43	RT	Planned Transmission Outage	PGAE	Humboldt	10/15/2022	15	No	DEC	6	18:00	0:00	0.97	0.00	0.00	-78.40	0.00	0.00	0.00	0.00	0.00	-332.86	0.00
44	RT	Planned Transmission Outage	PGAE	Humboldt	10/15/2022	15 - 45	No	INC	24	0:00	0:00	-3.54	71342.32	0.00	272.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	RT	Planned Transmission Outage	PGAE	Humboldt	10/16/2022	15 - 30	No	DEC	22	1:00	23:00	-3.72	5414.37	0.00	103.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46	RT	Planned Transmission Outage	PGAE	Humboldt	10/16/2022	15 - 30	No	INC	24	0:00	0:00	12.16	26753.37	0.00	-1158.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47	RT	Planned Transmission Outage	PGAE	Humboldt	10/17/2022	15 - 30	No	DEC	20	4:00	0:00	0.55	0.00	0.00	-27.71	-0.62	0.00	53.73	0.00	-1362.76	0.00	
48	RT	Planned Transmission Outage	PGAE	Humboldt	10/17/2022	15 - 45	No	INC	24	0:00	0:00	6.64	38537.59	0.00	-628.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	RT	Planned Transmission Outage	PGAE	Humboldt	10/18/2022	15 - 45	No	DEC	23	0:00	23:00	-1.36	-69983.25	0.00	151.83	0.00	0.00	0.00	0.00	0.00	-1473.65	0.00
50	RT	Planned Transmission Outage	PGAE	Humboldt	10/18/2022	15 - 45	No	INC	24	0:00	0:00	-0.60	58404.36	0.00	50.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51	RT	Planned Transmission Outage	PGAE	Humboldt	10/19/2022	15 - 45	No	DEC	18	6:00	0:00	-7.08	-70683.23	0.00	491.55	-0.64	0.00	40.82	0.00	-1205.58	0.00	
52	RT	Planned Transmission Outage	PGAE	Humboldt	10/19/2022	15 - 45	No	INC	14	0:00	14:00	0.68	42186.87	0.00	-46.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
53	RT	Planned Transmission Outage	PGAE	Humboldt	10/20/2022	15 - 30	No	DEC	24	0:00	0:00	2.67	-160857.33	0.00	-138.36	0.00	0.00	0.00	0.00	0.00	-2056.40	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
54	RT	Planned Transmission Outage	PGAE	Humboldt	10/21/2022	15 - 30	No	DEC	24	0:00	0:00	-6.11	-2219.35	0.00	432.77	-0.29	0.00	24.15	0.00	-310.93	0.00
55	RT	Planned Transmission Outage	PGAE	Humboldt	10/21/2022	30	No	INC	21	0:00	20:15	-1.23	64587.49	0.00	83.23	-0.81	0.00	53.63	0.00	-27.12	0.00
56	RT	Planned Transmission Outage	PGAE	Humboldt	10/22/2022	15	No	DEC	24	0:00	0:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-1327.18	0.00
57	RT	Planned Transmission Outage	PGAE	Humboldt	10/23/2022	15 - 30	No	DEC	23	0:00	23:00	-0.66	-13450.03	0.00	70.67	0.00	0.00	0.00	0.00	-1231.65	0.00
58	RT	Planned Transmission Outage	PGAE	Humboldt	10/23/2022	30	No	INC	16	8:35	0:00	4.17	10971.09	0.00	-285.44	0.00	0.00	0.00	0.00	-30.58	0.00
59	RT	Planned Transmission Outage	PGAE	Humboldt	10/24/2022	15 - 30	No	DEC	17	7:25	0:00	-1.12	-26514.37	0.00	-280.80	0.00	0.00	0.00	0.00	-954.49	0.00
60	RT	Planned Transmission Outage	PGAE	Humboldt	10/24/2022	30	No	INC	24	0:00	0:00	-0.02	38258.16	0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00
61	RT	Planned Transmission Outage	PGAE	Humboldt	10/25/2022	15	No	DEC	21	0:00	21:00	3.73	3736.82	0.00	-312.04	0.00	0.00	0.00	0.00	0.00	0.00
62	RT	Planned Transmission Outage	PGAE	Humboldt	10/25/2022	30	No	INC	24	0:00	0:00	0.00	55189.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
63	RT	Planned Transmission Outage	PGAE	Humboldt	10/26/2022	30 - 45	No	INC	24	0:00	0:00	-0.62	62179.32	0.00	-32.48	-1.80	0.00	88.03	0.00	-22.07	0.00
64	RT	Planned Transmission Outage	PGAE	Humboldt	10/27/2022	15	No	DEC	6	17:15	22:30	-0.28	0.00	988.93	18.84	0.00	0.00	0.00	0.00	0.00	0.00
65	RT	Planned Transmission Outage	PGAE	Humboldt	10/27/2022	30 - 45	No	INC	24	0:00	0:00	-0.12	60656.56	0.00	13.54	-1.30	0.00	84.84	0.00	-16.54	0.00
66	RT	Planned Transmission Outage	PGAE	Humboldt	10/28/2022	15	No	DEC	13	6:30	18:45	3.84	0.00	850.43	-307.55	0.00	0.00	0.00	0.00	0.00	0.00
67	RT	Planned Transmission Outage	PGAE	Humboldt	10/28/2022	30	No	INC	24	0:00	0:00	0.00	59298.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
68	RT	Planned Transmission Outage	PGAE	Humboldt	10/29/2022	30	No	DEC	9	15:00	0:00	-3.28	-37465.73	800.12	257.37	0.00	0.00	0.00	0.00	-730.66	0.00
69	RT	Planned Transmission Outage	PGAE	Humboldt	10/29/2022	30	No	INC	16	0:00	16:00	7.67	45912.77	943.00	-593.25	0.00	0.00	0.00	0.00	0.00	0.00
70	RT	Planned Transmission Outage	PGAE	Humboldt	10/30/2022	30	No	INC	24	0:00	0:00	-2.70	78707.61	0.00	29.98	0.00	0.00	0.00	0.00	-1.19	0.00
71	RT	Planned Transmission Outage	PGAE	Humboldt	10/31/2022	14	No	DEC	4	20:00	0:00	-3.39	285.17	0.00	178.14	0.00	0.00	0.00	0.00	0.00	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620	
72	RT	Planned Transmission Outage	PGAE	Humboldt	10/31/2022	15 - 30	No	INC	24	0:00	0:00	1.54	68441.40	0.00	-224.72	-2.04	0.00	118.51	0.00	-33.88	0.00	
73	RT	Planned Transmission Outage	PGAE	NCNB	10/18/2022	55	No	DEC	1	23:25	0:00	-5.27	0.00	0.00	-79.36	0.77	12.62	-0.95	0.00	-0.05	0.00	
74	RT	Planned Transmission Outage	PGAE	NCNB	10/19/2022	55	No	DEC	16	0:00	16:00	-21.92	0.00	0.00	-312.85	-3.83	0.00	10.07	0.00	-78.91	0.00	
75	RT	Planned Transmission Outage	PGAE	NCNB	10/20/2022	57 - 70	No	DEC	14	6:50	20:00	1.04	0.00	0.00	68.84	-17.36	0.00	1139.96	0.00	-	41419.14	0.00
76	RT	Planned Transmission Outage	PGAE	NCNB	10/20/2022	65	No	INC	1	11:00	12:00	-3.35	0.00	0.00	-50.51	0.00	0.00	0.00	0.00	0.00	0.00	
77	RT	Planned Transmission Outage	PGAE	NCNB	10/21/2022	57 - 65	No	DEC	14	8:00	22:00	-32.92	0.00	0.00	-15.46	-8.50	0.00	440.07	0.00	-	34783.19	0.00
78	RT	Planned Transmission Outage	PGAE	NCNB	10/21/2022	57 - 60	No	INC	1	16:00	17:00	-1.76	0.00	0.00	26.88	0.00	0.00	0.00	0.00	0.00	0.00	
79	RT	Planned Transmission Outage	PGAE	NCNB	10/25/2022	54 - 65	No	DEC	11	10:00	20:30	-44.11	0.00	0.00	2586.94	-79.41	0.00	4366.29	0.00	-	44230.85	0.00
80	RT	Planned Transmission Outage	PGAE	NCNB	10/30/2022	45	No	DEC	6	7:10	13:00	-15.33	0.00	0.00	2056.26	-27.42	0.00	2205.25	0.00	-	13056.59	0.00
81	RT	Planned Transmission Outage	PGAE	Sierra	10/1/2022	20	No	DEC	3	18:00	21:00	-10.36	-4657.90	0.00	2477.98	-5.25	0.00	1065.08	0.00	-853.10	0.00	
82	RT	Planned Transmission Outage	PGAE	Sierra	10/1/2022	20 - 40	No	INC	5	17:10	22:00	14.31	-4383.91	0.00	-335.22	1.00	-482.02	1027.07	0.00	-540.00	0.00	
83	RT	Planned Transmission Outage	PGAE	Sierra	10/2/2022	0	No	DEC	1	18:35	19:30	-23.69	0.00	0.00	2048.09	-23.69	0.00	2048.09	0.00	-1767.18	0.00	
84	RT	Planned Transmission Outage	PGAE	Sierra	10/5/2022	6	No	DEC	2	20:15	22:00	-5.12	0.00	0.00	-1745.52	-5.00	0.00	-1685.46	0.00	0.00	0.00	
85	RT	Planned Transmission Outage	PGAE	Sierra	10/14/2022	20 - 42	No	INC	6	8:00	14:00	19.30	22566.23	523.57	-1171.52	0.00	0.00	0.00	0.00	0.00	0.00	
86	RT	Planned Transmission Outage	PGAE	Sierra	10/25/2022	20 - 45	No	DEC	12	8:00	19:45	4.65	0.00	0.00	-287.64	14.58	-876.51	0.00	0.00	-119.17	0.00	
87	RT	Planned Transmission Outage	PGAE	Sierra	10/25/2022	20 - 45	No	INC	10	7:00	17:00	31.73	1711.97	0.00	-2864.31	0.00	0.00	0.00	0.00	-1181.12	0.00	
88	RT	Planned Transmission Outage	PGAE	Stockton	10/3/2022	89	No	DEC	1	7:45	8:00	0.25	0.00	0.00	-10.68	0.00	0.00	0.00	0.00	0.00	0.00	
89	RT	Planned Transmission Outage	PGAE	Stockton	10/3/2022	89	No	INC	1	8:00	9:00	31.03	6645.82	2160.10	-1991.21	0.00	0.00	0.00	0.00	-0.59	0.00	

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
90	RT	Planned Transmission Outage	PGAE	Stockton	10/4/2022	89	No	DEC	1	7:55	8:00	7.41	0.00	0.00	-373.55	0.00	0.00	0.00	0.00	0.00	0.00
91	RT	Planned Transmission Outage	PGAE	Stockton	10/4/2022	89	No	INC	1	8:00	9:00	5.84	15107.89	0.00	-280.98	0.00	0.00	0.00	0.00	0.00	0.00
92	RT	Planned Transmission Outage	PGAE	Stockton	10/5/2022	25 - 88.8	No	INC	8	1:20	9:00	11.81	29612.24	0.00	-832.76	12.50	-846.20	0.00	0.00	-6802.33	0.00
93	RT	Planned Transmission Outage	PGAE	Stockton	10/6/2022	25 - 89	No	INC	13	1:35	14:00	218.11	28967.32	0.00	-15588.82	93.84	7264.79	0.00	0.00	-5377.70	0.00
94	RT	Planned Transmission Outage	PGAE	Stockton	10/7/2022	89	No	INC	3	10:15	13:00	5.35	21561.70	0.00	-405.90	0.00	0.00	0.00	0.00	0.00	0.00
95	RT	Planned Transmission Outage	PGAE	Stockton	10/8/2022	88.8 - 250	No	INC	17	6:30	23:00	224.82	172662.45	7351.26	-8986.30	25.67	-612.53	0.00	0.00	-5430.29	0.00
96	RT	Planned Transmission Outage	PGAE	Stockton	10/27/2022	30 - 60	No	INC	2	7:15	9:15	3.39	0.00	0.00	-143.65	27.46	1883.91	0.00	0.00	-4475.74	0.00
97	RT	Planned Transmission Outage	PGAE	NA	10/28/2022	19	No	INC	15	9:05	0:00	-1.98	0.00	0.00	143.27	-0.25	0.00	19.71	0.00	-17.31	0.00
98	RT	Planned Transmission Outage	PGAE	NA	10/29/2022	19	No	INC	2	0:00	1:30	0.29	0.00	0.00	-24.11	0.00	0.00	0.00	0.00	0.00	0.00
99	RT	Planned Transmission Outage	PGAE	NA	10/31/2022	17	No	DEC	1	5:50	6:30	-1.05	0.00	0.00	72.68	-0.90	0.00	61.33	0.00	-57.55	0.00
100	RT	Planned Transmission Outage	SCE	NA	10/5/2022	460	No	DEC	1	17:00	17:30	-31.29	0.00	0.00	-16572.25	0.00	0.00	0.00	0.00	0.00	0.00
101	RT	Planned Transmission Outage	SCE	NA	10/5/2022	460	No	INC	3	14:35	17:00	-3.38	28363.36	0.00	460.89	0.00	0.00	0.00	0.00	0.00	0.00
102	RT	Ramping Capacity	PGAE	NCNB	10/20/2022	67 - 70	No	DEC	1	6:45	7:30	-17.50	0.00	0.00	616.53	-15.00	0.00	652.07	0.00	-876.20	0.00
103	RT	Ramping Capacity	SCE	LA Basin	10/3/2022	194	No	INC	5	16:45	21:00	-20.97	0.00	0.00	1662.55	0.00	0.00	0.00	0.00	0.00	0.00
104	RT	Ramping Capacity	SCE	LA Basin	10/5/2022	194	No	INC	5	16:00	21:00	-227.63	0.00	0.00	19812.08	0.00	0.00	0.00	0.00	0.00	0.00
105	RT	Reliability Assessment	PGAE	Bay Area	10/6/2022	22	No	INC	5	11:15	16:00	16.67	0.00	0.00	-5966.29	1.83	-639.91	0.00	0.00	0.00	0.00
106	RT	Reliability Assessment	PGAE	Fresno	10/26/2022	325	No	DEC	1	18:05	19:00	-7.90	0.00	0.00	95.31	-13.94	0.00	180.87	0.00	0.00	0.00
107	RT	Reliability Assessment	PGAE	Fresno	10/26/2022	325	No	INC	2	18:05	20:00	48.03	4633.11	0.00	-1435.15	6.25	-88.25	0.00	0.00	0.00	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
108	RT	Reliability Assessment	PGAE	NCNB	10/7/2022	30 - 63	No	DEC	11	9:30	20:00	198.33	0.00	0.00	-1124.45	-17.92	0.00	-268.81	0.00	0.00	0.00
109	RT	Reliability Assessment	PGAE	NCNB	10/10/2022	60 - 65	No	DEC	6	18:30	0:00	-15.23	0.00	0.00	-320.15	-17.61	0.00	-264.22	0.00	0.00	0.00
110	RT	Reliability Assessment	PGAE	NCNB	10/11/2022	65 - 70	No	DEC	1	0:00	1:00	3.40	0.00	0.00	45.97	0.00	0.00	0.00	0.00	0.00	0.00
111	RT	Reliability Assessment	PGAE	NCNB	10/22/2022	67 - 70	No	DEC	12	8:45	20:00	-14.77	0.00	0.00	-173.92	-6.00	0.00	-90.00	0.00	0.00	0.00
112	RT	Reliability Assessment	PGAE	NCNB	10/22/2022	77 - 80	No	INC	12	8:45	20:00	6.23	0.00	0.00	122.37	0.00	0.00	0.00	0.00	0.00	0.00
113	RT	Reliability Assessment	PGAE	Sierra	10/2/2022	20	No	INC	4	17:10	21:00	23.61	0.00	0.00	-1948.36	0.00	0.00	0.00	0.00	0.00	0.00
114	RT	Reliability Assessment	PGAE	Sierra	10/5/2022	20	No	DEC	2	18:00	20:00	1.88	0.00	221.77	-198.03	0.00	0.00	0.00	0.00	0.00	0.00
115	RT	Reliability Assessment	PGAE	Sierra	10/5/2022	20	No	INC	1	17:35	18:00	0.00	-1.30	46.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
116	RT	Reliability Assessment	PGAE	Sierra	10/6/2022	20	No	DEC	1	18:00	19:00	3.00	0.00	0.00	-313.94	0.00	0.00	0.00	0.00	0.00	0.00
117	RT	Reliability Assessment	PGAE	Sierra	10/6/2022	20	No	INC	7	15:45	22:00	-1.47	7425.86	0.00	292.43	0.00	0.00	0.00	0.00	0.00	0.00
118	RT	Reliability Assessment	PGAE	Sierra	10/7/2022	20	No	INC	3	18:55	21:00	-5.09	0.00	0.00	438.50	0.00	0.00	0.00	0.00	0.00	0.00
119	RT	Reliability Assessment	PGAE	Sierra	10/8/2022	20	No	INC	2	19:55	21:00	0.81	3773.93	0.00	-136.77	0.00	0.00	0.00	0.00	0.00	0.00
120	RT	Reliability Assessment	PGAE	Sierra	10/13/2022	20	No	INC	6	16:25	22:00	-64.40	21009.69	536.40	5298.64	0.00	0.00	0.00	0.00	0.00	0.00
121	RT	Reliability Assessment	PGAE	Sierra	10/14/2022	42	No	INC	10	12:10	22:00	-0.50	59173.66	1372.92	31.40	0.00	0.00	0.00	0.00	0.00	0.00
122	RT	Reliability Assessment	PGAE	Stockton	10/6/2022	191.1	No	DEC	4	18:15	22:00	-15.31	-10470.28	0.00	1061.32	-14.64	0.00	1003.38	0.00	0.00	0.00
123	RT	Reliability Assessment	PGAE	Stockton	10/6/2022	15 - 25	No	INC	5	17:15	22:00	45.42	0.00	0.00	-5835.15	36.29	4954.18	0.00	0.00	0.00	0.00
124	RT	Reliability Assessment	PGAE	Stockton	10/7/2022	200	No	DEC	4	16:30	20:00	-15.22	-10458.25	0.00	807.02	-0.93	0.00	61.89	0.00	0.00	0.00
125	RT	Reliability Assessment	SCE	NA	10/5/2022	460	No	DEC	2	17:05	19:00	-144.70	0.00	0.00	-26465.33	-22.03	0.00	-2420.80	0.00	0.00	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
126	RT	Reliability Assessment	SCE	NA	10/17/2022	25	No	DEC	5	17:00	22:00	-25.15	0.00	0.00	2076.56	0.00	0.00	0.00	0.00	0.00	0.00
127	RT	Reliability Assessment	SCE	NA	10/17/2022	25	No	INC	18	6:50	0:00	-178.29	0.00	0.00	14470.49	-117.70	0.00	9662.81	0.00	0.00	0.00
128	RT	Reliability Assessment	SCE	NA	10/18/2022	25	No	INC	12	0:00	12:00	-237.59	0.00	0.00	15266.45	-139.38	0.00	10643.71	0.00	0.00	0.00
129	RT	Reliability Assessment	SDGE	San Diego-IV	10/18/2022	25	No	DEC	2	18:00	20:00	-42.58	0.00	0.00	3891.68	0.00	0.00	0.00	0.00	0.00	0.00
130	RT	Reliability Assessment	SDGE	San Diego-IV	10/18/2022	25	No	INC	16	8:30	0:00	28.43	0.00	0.00	294.43	49.48	-205.54	0.00	0.00	0.00	0.00
131	RT	Software Limitation	PGAE	Bay Area	10/6/2022	22	No	INC	1	16:10	17:00	0.24	0.00	0.00	-24.28	0.00	0.00	0.00	0.00	0.00	0.00
132	RT	Software Limitation	PGAE	Bay Area	10/31/2022	0 - 198	No	INC	3	21:05	23:20	66.66	35008.75	0.00	-9610.89	-90.00	0.00	0.00	0.00	0.00	0.00
133	RT	Software Limitation	PGAE	Fresno	10/9/2022	83	No	DEC	2	18:00	20:00	-51.23	0.00	0.00	4153.38	0.00	0.00	0.00	0.00	0.00	0.00
134	RT	Software Limitation	PGAE	Fresno	10/9/2022	83	No	INC	2	16:45	18:00	36.72	12501.19	0.00	-2943.29	0.00	0.00	0.00	0.00	0.00	0.00
135	RT	Software Limitation	PGAE	Fresno	10/31/2022	398 - 404	No	INC	1	21:00	21:15	-13.46	986.94	0.00	776.77	0.00	0.00	0.00	0.00	0.00	0.00
136	RT	Software Limitation	PGAE	Stockton	10/6/2022	0	No	INC	1	22:35	23:35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
137	RT	Software Limitation	PGAE	NA	10/9/2022	200	No	DEC	1	17:00	18:00	42.10	-7159.44	561.11	-2530.34	0.00	0.00	0.00	0.00	0.00	0.00
138	RT	Software Limitation	PGAE	NA	10/9/2022	200	No	INC	1	16:40	17:00	31.73	0.00	0.00	-2756.07	0.00	0.00	0.00	0.00	0.00	0.00
139	RT	Software Limitation	PGAE	NA	10/31/2022	0 - 200	No	DEC	3	21:05	23:45	-77.17	-26379.03	0.00	3257.53	-19.26	-269.75	0.00	0.00	0.00	0.00
140	RT	Software Limitation	SCE	LA Basin	10/9/2022	5 - 90.58	No	INC	1	20:00	20:55	241.93	35376.40	0.00	-19765.39	0.09	-8.54	0.00	0.00	0.00	0.00
141	RT	Software Limitation	SCE	LA Basin	10/16/2022	0 - 90.58	No	INC	5	19:50	0:00	239.64	20693.26	0.00	-25479.65	-0.72	-10.07	0.00	0.00	0.00	0.00
142	RT	Software Limitation	SCE	LA Basin	10/17/2022	0	No	INC	1	0:00	0:20	-1.67	114.25	0.00	0.00	-1.67	0.00	0.00	0.00	0.00	0.00
143	RT	Unit Testing	PGAE	NA	10/20/2022	234	No	INC	3	8:10	11:00	40.10	0.00	0.00	-3900.44	27.14	-	1916.73	0.00	0.00	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
144	RT	Unit Testing	SCE	Big Creek-Ventura	10/4/2022	127	No	INC	1	0:25	1:05	71.44	0.00	0.00	-4855.85	72.76	-4944.10	0.00	0.00	0.00	0.00
145	RT	Unit Testing	SCE	Big Creek-Ventura	10/5/2022	19.27	No	INC	1	7:30	8:10	12.43	0.00	0.00	-796.44	2.51	-159.22	0.00	0.00	0.00	0.00
146	RT	Unit Testing	SCE	Big Creek-Ventura	10/15/2022	127	No	INC	1	7:45	8:25	132.26	0.00	0.00	-6335.35	130.45	6260.78	0.00	0.00	0.00	0.00
147	RT	Unit Testing	SCE	LA Basin	10/4/2022	459.83	No	DEC	1	12:40	13:20	0.50	-10591.45	0.00	5.83	7.42	-354.63	0.00	0.00	0.00	0.00
148	RT	Unit Testing	SCE	LA Basin	10/4/2022	48.24 - 49.65	No	INC	1	13:35	14:20	62.73	0.00	0.00	-24395.00	63.17	-24423.37	0.00	0.00	0.00	0.00
149	RT	Unit Testing	SCE	NA	10/5/2022	17	No	DEC	1	17:15	18:00	-4.07	0.00	0.00	390.03	2.83	-201.84	0.00	0.00	0.00	0.00
150	RT	Unit Testing	SDGE	NA	10/31/2022	1	No	INC	1	15:00	16:00	0.18	0.00	0.00	-0.07	0.00	0.00	0.00	0.00	0.00	0.00
151	RT	Unplanned Outage	PGAE	Fresno	10/16/2022	83 - 140	No	INC	1	20:00	21:00	43.16	0.00	0.00	-3135.32	7.56	-542.63	0.00	-295.96	0.00	0.00
152	RT	Unplanned Outage	PGAE	Fresno	10/29/2022	404 - 407	No	INC	1	20:25	20:30	-3.38	1151.43	0.00	195.41	2.41	-139.18	0.00	-4.93	0.00	0.00
153	RT	Unplanned Outage	PGAE	NA	10/16/2022	196	No	DEC	1	20:15	21:15	-15.49	0.00	0.00	1187.35	0.00	0.00	0.00	0.00	0.00	0.00
154	RT	Unplanned Outage	PGAE	NA	10/16/2022	417	No	INC	1	19:55	20:15	41.23	-6911.18	0.00	-2819.36	49.73	3400.53	0.00	0.00	0.00	0.00
155	RT	Unplanned Outage	SDGE	San Diego-IV	10/16/2022	400	No	INC	1	20:10	21:10	152.65	13264.17	0.00	-9878.66	152.75	-9916.76	0.00	0.00	0.00	0.00
156	RT	Voltage Support	PGAE	Fresno	10/2/2022	-340	No	DEC	3	5:35	8:00	-322.14	0.00	0.00	25527.34	-20.75	0.00	1790.98	0.00	0.00	0.00
157	RT	Voltage Support	PGAE	Fresno	10/3/2022	-340	No	DEC	3	3:55	6:30	-176.40	0.00	0.00	12260.85	0.00	0.00	0.00	0.00	0.00	0.00
158	RT	Voltage Support	PGAE	Fresno	10/16/2022	-340	No	DEC	4	4:55	8:00	-113.33	0.00	0.00	13118.11	0.00	0.00	0.00	0.00	0.00	0.00
159	RT	Voltage Support	PGAE	Fresno	10/17/2022	-340	No	DEC	20	4:00	0:00	-318.22	0.00	0.00	26871.39	0.00	0.00	0.00	0.00	0.00	0.00
160	RT	Voltage Support	PGAE	Fresno	10/17/2022	0	No	INC	1	22:00	23:00	-88.94	2755.20	0.00	8640.04	-87.63	0.00	8514.36	0.00	-2999.77	0.00
161	RT	Voltage Support	PGAE	Fresno	10/18/2022	-340	No	DEC	24	0:00	0:00	-901.60	-18505.06	0.00	159604.09	-240.00	0.00	22957.75	0.00	34582.81	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
162	RT	Voltage Support	PGAE	Fresno	10/19/2022	-340	No	DEC	11	0:00	10:30	-220.40	0.00	0.00	21766.47	0.00	0.00	0.00	0.00	-3040.87	0.00
163	RT	Voltage Support	PGAE	Fresno	10/19/2022	22.37	No	INC	6	1:35	7:00	27.08	16763.45	1712.13	-2120.79	0.00	0.00	0.00	0.00	0.00	0.00
164	RT	Voltage Support	PGAE	Fresno	10/20/2022	-340	No	DEC	24	0:35	0:00	-1972.33	-12227.03	0.00	136508.23	-262.08	0.00	18215.94	0.00	46577.54	0.00
165	RT	Voltage Support	PGAE	Fresno	10/20/2022	0	No	INC	23	1:00	23:30	-13.33	0.00	0.00	920.34	0.00	0.00	0.00	0.00	0.00	0.00
166	RT	Voltage Support	PGAE	Fresno	10/21/2022	-340	No	DEC	24	0:00	0:00	-3483.49	-20917.55	0.00	545334.10	-366.52	0.00	26488.33	0.00	60475.05	0.00
167	RT	Voltage Support	PGAE	Fresno	10/22/2022	-340	No	DEC	24	0:00	0:00	-3708.82	-20424.08	0.00	1889117.73	0.00	0.00	0.00	0.00	46615.14	0.00
168	RT	Voltage Support	PGAE	Fresno	10/22/2022	0	No	INC	1	22:00	22:30	-13.24	0.00	0.00	1136.84	0.00	0.00	0.00	0.00	0.00	0.00
169	RT	Voltage Support	PGAE	Fresno	10/23/2022	-340	No	DEC	24	0:00	0:00	-4756.65	-24454.07	0.00	1997157.38	0.00	0.00	0.00	0.00	29539.77	0.00
170	RT	Voltage Support	PGAE	Fresno	10/23/2022	0 - 83	No	INC	13	10:35	22:45	232.66	10856.29	0.00	-5277.41	0.00	0.00	0.00	0.00	0.00	0.00
171	RT	Voltage Support	PGAE	Fresno	10/24/2022	-340	No	DEC	24	0:00	0:00	-500.09	-2302.85	0.00	33888.08	0.00	0.00	0.00	0.00	-3091.02	0.00
172	RT	Voltage Support	PGAE	Fresno	10/25/2022	-340	No	DEC	9	0:00	8:15	-136.89	3465.00	0.00	9060.40	0.00	0.00	0.00	0.00	0.00	0.00
173	RT	Voltage Support	PGAE	Fresno	10/26/2022	-330	No	INC	6	2:00	8:00	-160.98	3630.00	0.00	9407.00	0.00	0.00	0.00	0.00	0.00	0.00
174	RT	Voltage Support	PGAE	Fresno	10/28/2022	-340	No	DEC	5	19:45	0:00	-260.31	0.00	0.00	27878.92	0.00	0.00	0.00	0.00	0.00	0.00
175	RT	Voltage Support	PGAE	Fresno	10/28/2022	-330	No	INC	4	4:45	8:00	-13.75	0.00	0.00	1496.88	0.00	0.00	0.00	0.00	0.00	0.00
176	RT	Voltage Support	PGAE	Fresno	10/29/2022	-340	No	DEC	24	0:00	0:00	5.93	0.00	0.00	-556.84	0.00	0.00	0.00	0.00	0.00	0.00
177	RT	Voltage Support	PGAE	Fresno	10/29/2022	0	No	INC	2	21:00	22:30	-101.75	0.00	0.00	6911.20	-95.00	0.00	6452.72	0.00	-2599.97	0.00
178	RT	Voltage Support	PGAE	Fresno	10/30/2022	-340	No	DEC	16	0:00	16:00	-27.50	0.00	0.00	2730.38	0.00	0.00	0.00	0.00	0.00	0.00
179	RT	Voltage Support	PGAE	Fresno	10/30/2022	-330	No	INC	3	21:45	0:00	-252.61	1686.02	0.00	18032.05	-190.00	0.00	13672.19	0.00	-5966.69	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
180	RT	Voltage Support	PGAE	Fresno	10/31/2022	-330	No	INC	7	0:00	7:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
181	RT	Voltage Support	PGAE	Humboldt	10/28/2022	15	No	DEC	2	18:45	20:30	0.00	0.00	121.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00
182	RT	Voltage Support	PGAE	Sierra	10/3/2022	20	No	INC	1	23:45	0:00	-0.20	0.00	24.43	14.54	0.00	0.00	0.00	0.00	0.00	0.00
183	RT	Voltage Support	PGAE	Sierra	10/4/2022	20	Yes	INC	7	0:00	7:00	2.98	23103.01	0.00	-256.03	0.00	0.00	0.00	0.00	0.00	0.00
184	RT	Voltage Support	PGAE	Sierra	10/13/2022	20	No	INC	3	3:30	6:00	10.02	8466.59	720.54	-666.68	0.00	0.00	0.00	0.00	0.00	0.00
185	RT	Voltage Support	PGAE	Sierra	10/15/2022	20	No	INC	14	3:10	16:30	-9.64	31134.91	0.00	364.94	0.00	0.00	0.00	0.00	0.00	0.00
186	RT	Voltage Support	PGAE	Sierra	10/16/2022	20	No	INC	14	2:15	16:00	-4.13	49449.56	646.27	-939.82	0.00	0.00	0.00	0.00	0.00	0.00
187	RT	Voltage Support	PGAE	Sierra	10/17/2022	20	No	INC	5	2:10	7:00	10.54	16483.19	658.77	-689.19	0.00	0.00	0.00	0.00	0.00	0.00
188	RT	Voltage Support	PGAE	Sierra	10/22/2022	20	No	DEC	4	18:00	22:00	-17.02	0.00	0.00	937.77	0.00	0.00	0.00	0.00	0.00	0.00
189	RT	Voltage Support	PGAE	Sierra	10/22/2022	20	No	INC	20	4:00	0:00	-71.83	66684.80	624.68	-7888.75	0.00	0.00	0.00	0.00	0.00	0.00
190	RT	Voltage Support	PGAE	Sierra	10/23/2022	20	No	DEC	3	18:00	21:00	-7.76	0.00	0.00	468.55	0.00	0.00	0.00	0.00	0.00	0.00
191	RT	Voltage Support	PGAE	Sierra	10/23/2022	20	No	INC	24	0:00	0:00	7.06	124170.35	0.00	-14989.82	0.00	0.00	0.00	0.00	0.00	0.00
192	RT	Voltage Support	PGAE	Sierra	10/24/2022	20	No	INC	24	0:00	0:00	38.75	62983.44	476.30	-3982.44	0.00	0.00	0.00	0.00	0.00	0.00
193	RT	Voltage Support	PGAE	Sierra	10/25/2022	20	Yes	INC	24	0:00	0:00	-1.00	36353.06	0.00	-281.71	0.00	0.00	0.00	0.00	0.00	0.00
194	RT	Voltage Support	PGAE	Sierra	10/26/2022	45	No	DEC	11	7:45	18:00	22.60	-888.01	0.00	-1964.22	0.00	0.00	0.00	0.00	0.00	0.00
195	RT	Voltage Support	PGAE	Sierra	10/26/2022	20 - 45	Yes	INC	17	0:00	17:00	-10.89	24634.26	0.00	776.37	3.75	-160.25	0.00	0.00	-1891.87	0.00
196	RT	Voltage Support	PGAE	Sierra	10/27/2022	20	No	INC	20	4:15	0:00	2.99	15976.94	1144.23	-17.99	0.00	0.00	0.00	0.00	0.00	0.00
197	RT	Voltage Support	PGAE	Sierra	10/28/2022	20	Yes	INC	24	0:00	0:00	-28.69	24918.60	31.37	2162.98	0.00	0.00	0.00	0.00	0.00	0.00

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 15, 2022**

Chart 2: Table of Exceptional Dispatches for Period 01/October/2022 – 31/October/2022

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
198	RT	Voltage Support	PGAE	Sierra	10/29/2022	20	Yes	INC	24	0:00	0:00	1.48	40851.30	531.83	-352.92	0.00	0.00	0.00	0.00	0.00	0.00
199	RT	Voltage Support	PGAE	Sierra	10/30/2022	20	No	DEC	4	19:10	23:00	-1.35	0.00	0.00	94.76	0.00	0.00	0.00	0.00	0.00	0.00
200	RT	Voltage Support	PGAE	Sierra	10/30/2022	20	No	INC	24	0:00	0:00	-7.01	30013.20	0.00	434.90	0.00	0.00	0.00	0.00	0.00	0.00
201	RT	Voltage Support	PGAE	Sierra	10/31/2022	20	Yes	INC	7	0:00	7:00	-16.61	23343.60	0.00	1163.07	0.00	0.00	0.00	0.00	0.00	0.00
202	RT	Voltage Support	PGAE	NA	10/17/2022	49	No	INC	3	4:20	7:00	66.94	12958.48	0.00	-5170.69	0.00	-0.32	0.00	0.00	0.00	0.00
203	RT	Voltage Support	PGAE	NA	10/19/2022	48.95	No	DEC	5	2:20	7:00	27.86	-43746.11	0.00	-1645.54	0.00	0.00	0.00	0.00	0.00	0.00
204	RT	Voltage Support	PGAE	NA	10/28/2022	195.8	No	DEC	2	22:30	0:00	-6.70	-2507.54	0.00	6645.63	0.00	0.00	0.00	0.00	0.00	0.00
205	RT	Voltage Support	PGAE	NA	10/29/2022	147 - 307	No	DEC	24	0:00	0:00	120.26	-60135.74	0.00	-8002.87	0.00	0.00	0.00	0.00	0.00	0.00
206	RT	Voltage Support	PGAE	NA	10/29/2022	19	No	INC	23	1:30	0:00	0.96	0.00	0.00	-79.16	0.00	0.00	0.00	0.00	0.00	0.00
207	RT	Voltage Support	PGAE	NA	10/30/2022	19 - 49	No	DEC	18	6:00	0:00	50.75	-61449.75	0.00	-3550.49	0.00	0.00	0.00	0.00	0.00	-2177.81
208	RT	Voltage Support	PGAE	NA	10/30/2022	19	No	INC	6	0:00	6:00	-0.14	0.00	0.00	10.05	0.00	0.00	0.00	0.00	0.00	0.00
209	RT	Voltage Support	PGAE	NA	10/31/2022	49	No	DEC	6	0:00	6:00	-4.61	-113738.55	0.00	310.15	0.00	0.00	0.00	0.00	0.00	0.00

Appendix A: Explanation by Example

All examples listed below are based on fictitious data. Many simplified assumptions are made to explain settlement charge codes, and not all assumptions are explicitly stated in these examples. For instance, settlement charge codes are calculated based on metered quantities, whereas in these examples, the dispatch quantities are assumed to be equal to metered quantities. These assumptions have been made to simplify the understanding of settlements calculations.

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 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 in Table 2. Exceptional dispatches prior to the day-ahead market are commitments to minimum load. Here the dispatch levels are all at minimum load. Table 2 below also shows the commitment costs and the total volume (MWh) of exceptional dispatch instruction for each resource. The minimum load costs and start up costs, shown in Table 2 are the eligible minimum load and start up costs different from the bid-in minimum load and start up costs⁷. Only those quantities which relate to pre-day-ahead unit commitments are shown in this table.

Table 2: Instructions Prior to Day-Ahead Market

Date	Market	Resource	Location	Local Reliability Area (LRA)	Begin Time	End Time	Dispatch level (MW)	Reason	Total Volume (MWh)	Min-Load Cost	Start- Up Cost	CC6620 (BCR)
01-Jul-09	DA	A	SCE	LA BASIN	05:00	10:00	50	7630	300	\$5000	\$0	0
01-Jul-09	DA	B	SCE	LA BASIN	08:00	20:00	30	7630	390	\$6000	\$500	\$4000
01-Jul-09	DA	C	SCE	LA BASIN	09:00	23:00	20	7630	300	\$400	\$1000	\$1000

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 there might be hours between the begin time and the end time where there might not be exceptional dispatch instructions for the reason, meaning that the range between the begin time and end time can include null hours with no dispatch. The total volume (MWh) is the MWh quantity for each resource, which adds up to 990 MWh. Similarly, all cost information is sum of individual resource costs. Some resources bid-in zero start-up cost; as seen in this example, resource A bid in zero for its start up cost. Since the CAISO does not explicitly pay a resource for bid-in minimum load costs and start-up costs; these costs are recovered through the charge code CC6620 (Bid Cost Recovery), this table shows the summary of CC6620 for the classification. Here, it is the CC6620 for all three resources which adds up to \$5000. This column shows the impact of exceptional dispatch on bid cost recovery for all pre-day-ahead exceptional dispatch commitments.

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	Total Volume (MWh)	Min-Load Cost	Start-Up Cost	CC6620
1	DA	7630	SCE	LA Basin	1-Jul-09	20-100	Yes	N/A	19	05:00	23:00	990	\$11,400	\$1,500	\$5000

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 6:00 through 11:00 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 7:00

⁷ Please refer to the BPM configuration Guide: Bid Cost Recovery Settlements published on the CAISO's website for details about eligible minimum load and start up costs.

through 9:00 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 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. This table also shows volume (MWh) and various real-time charge codes associated with the exceptional dispatch instructions. The total MWh column for each resource shows all types of imbalance energy quantities for this resource between the begin time and end time which includes both the exceptional dispatch energy quantities and optimal energy quantities.

Resource A was committed at its Pmin so its total volume (MWh) is equal to its Pmin times the number of hours, which is calculated as 30 MW times 6 hours and is equal to 180 MWh. The resource Minimum load costs and the start up costs are its eligible commitment costs for that period. LMP at this resource is \$10/MWh, so the charge code CC6470 is calculated at (180 MWh * \$10/MWh) and is equal to \$1,800. Since this resource is not dispatched above its Pmin, it has a zero volume (MWh) of exceptional dispatch. All charge codes associated with the exceptional dispatch increment or decrement quantities are zero.

Resource B is dispatched 20 MW above its day-ahead schedule, so its total volume (MWh) is calculated as 20 MW times 3 hours which is equal to 60 MWh. Since the resource was committed in the Day-Ahead Market there are no minimum load quantity and start up costs associated with this resource. The resource had a bid price of \$100/MWh and the LMP at that resource was \$10/MWh. All of 60 MWh is considered as exceptional dispatch incremental quantity shown in ED Volume (MWH INC/DEC) column. The charge code CC6470 INC is calculated as 60 MWh * resource LMP (\$10/MWh) which is equal to \$600. Since the only imbalance energy in this timeframe was the exceptional dispatch volume, the charge code CC6470 is equal to CC6470 INC. The charge code CC6488 is calculated as MWH quantity *(bid price – LMP), which is equal to \$5400 (60 MWh *(\$10/MWh-\$100/MWh)). Similarly, volumes and real-time charge codes are calculated for resource C.

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	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488
1-Jul-09	RT	A	PG&E	Humboldt	6:00	11:00	30	0	Yes	INC	30	7110	180	1000	50	1800	0	0	0	0	0
1-Jul-09	RT	B	PG&E	Humboldt	7:00	9:00	40	20	No	INC	20	7110	60	0	0	600	60	600	0	0	5400
1-Jul-09	RT	C	PG&E	Humboldt	12:00	15:00	50	50	No	INC	0	7110	0	0	0	0	0	0	0	0	0
1-Jul-09	RT	C	PG&E	Humboldt	16:00	20:00	50	40	No	INC	10	7110	50	0	0	300	20	300	0	0	200

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, 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 there might be hours between the begin time and end time where there were no exceptional dispatch instructions for the reason. Both volume and cost information columns are the summation for all the respective columns for resources A, B and C. For instance, the Total volume (MWh) column is calculated as summation of 180,60,0 and 50, which are the individual volumes (MWh) for resources A, B and C for time periods shown in Table 4.

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	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488
1	RT	7110	PG&E	Humboldt	1-Jul-09	0-50	Yes	INC	15	6:00	20:00	290	1000	50	1700	140	1500	0	0	11000

It is possible that the CAISO would dispatch a particular resource, for instance at 10 MW from hours ending 1 through 4, and all or part of its energy might settle as optimal energy. This situation occurs when the LMP at the resource pricing node is above the resource bid price. This cost will only be captured in charge code 6470. It is also possible that CAISO issues an exceptional dispatch for the resource to operate at a minimum of 10 MW which is its Pmin; however the market application might dispatch this resource above Pmin because the resource is economical. When this occurs, the charge code CC6470 and the total MWh quantity might overstate the actual exceptional dispatch MWh quantities. So, to best estimate the cost and volume (MWh) of exceptional dispatch, it is appropriate to consider only the following columns: ED MWh (INC/DEC), CC6470 INC, CC6470 DEC, CC6482, CC6488.

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. This table also includes volume (MWh) and cost information.

Resource A is committed in real-time at its Pmin, its total volume (MWh) is 20MW *6 hours which is equal to 120 MWh. This resource has a zero MW of incremental dispatch in all hours, so all other relevant cost and volume columns result in zeros. Resource B has a decremental MW of 20 MW in 3 hours, which results in 60 MWh of decremental volume. Since this resource is not committed in real-time, both the minimum load cost and start up costs are zero. This resource had a bid price of \$50/MWh and LMP at the resource pricing node is \$10/ MWh. Based on this information CC6470-Dec is calculated as 60 MWh *\$10/MWh which is equal to \$600. Since this resource has its ED volume (MWh) equal to its Total volume, CC6470 is equal to CC6470- DEC. The CC6488 is calculated as (60 MWh * (\$50/MWh - \$10/MWh)), which is equal to \$2400. Resource C had a bid price of \$10/MWh and the LMP at its pricing node is \$50/MWh. Based on this information, volume and cost information is calculated for resource C.

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	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488
1-Jul-09	RT	A	PG&E	Fresno	15:00	20:00	20	0	Yes	INC	20	7430	120	\$ 120	\$ 100	\$ -	0	\$ -	\$ -	\$ -	\$ -
1-Jul-09	RT	B	PG&E	Fresno	7:00	9:00	40	60	No	DEC	20	7430	(60)	\$ -	\$ -	\$ 600	-60	\$ -	\$ 600	\$ -	\$2,400
1-Jul-09	RT	C	PG&E	Fresno	10:00	14:00	40	50	No	DEC	10	7430	(50)	\$ -	\$ -	\$ 500	-50	\$ -	\$ 500	\$ -	\$2,000

This data is summarized according to FERC convention in Table 7. This summary classifies the data by reason, resource location, local reliability area, and trade date. Incs and decs 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. The volume and cost information are summarized by INC and DEC classification.

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	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488
1	RT	7430	PG&E	Fresno	1-Jul-09	20	Yes	INC	6	15:00	20:00	120	\$ 120	\$ 100	\$ -	0	\$ -	\$ -	\$ -	\$ -
2	RT	7430	PG&E	Fresno	1-Jul-09	10-20	Yes	DEC	8	7:00	14:00	(110)	\$ -	\$ -	\$ (1,100)	\$ (110)	\$ -	\$ (1,100)	\$ -	\$ (4,400)

Appendix B: Price Impact Analysis

In the September 2 FERC order, FERC requested the CAISO to perform price impact analysis on two distinct pricing nodes for the entire reporting period. The order also mentioned that the CAISO must pick two pricing nodes for the entire reporting period that are most affected by the exceptional dispatch instructions, and the two pricing nodes must belong to two load aggregation points (LAPs).

Based on this requirement the CAISO implemented a methodology to perform price impact analysis. First, the CAISO identified a heavily affected pricing node from each of the Pacific Gas & Electric (PG&E) LAP and Southern California Edison (SCE) LAP. These two pricing nodes had the maximum amount of exceptional dispatch volume (MWh) in their respective LAP. Point A is in PG&E LAP and point B is in SCE LAP. Please note these two points correspond to an actual pricing node in the CAISO system. Only one resource was connected to each of these pricing nodes. For each resource the following input parameters were obtained to perform the analysis:

Exceptional dispatch information: constrained level, constraint type, start of exceptional dispatch instruction and end of exceptional dispatch instruction.
 Real-Time LMPs for each of the five minute intervals for the month.
 Real-Time hourly bid set for each trade hour.
 Day-Ahead award for the resources.

The exceptional dispatch intervals have a begin time and an end time which can span as small as one minute to as large as 24 hours. Since the market application dispatches resources on five-minute basis, the exceptional dispatch instructions for each of these resources were broken down into five-minute intervals. If the begin time or end time for an instruction was in the middle of the five-minute interval, that instruction was rounded up to the next five-minute interval. These five-minute intervals were then coupled with resource five-minute LMPs calculated by the real-time market application. Also, the hourly bid information and the hourly day-ahead schedule were put together to create a dataset that had all the information to perform price impact analysis.

An exceptional dispatch instruction can be classified as a start up instruction, an instruction to be dispatched at or above the constrained level, an instruction to be dispatched at or below a constrained level, an instruction to be dispatched at a fixed constrained level, or a shut down instruction. The Locational Marginal Price (LMP) is set by a resource which can provide the next incremental MW of energy. Based on this definition of LMP and the classification of exceptional dispatches based on constraint type, a resource may set the LMP in only those intervals in which the resource is eligible to move either up or down from its constrained level. Hence, in those intervals in which the resource was constrained up at its Pmax or the resource was exceptionally dispatched to its Pmax and forced to generate at that level, the resource was ineligible to set the price as it had no room to move up. Similarly, if the resource was constrained down at its Pmin, then the resource was not eligible to set the price. All those intervals in which the resource was ineligible to set the price were dropped from the dataset under consideration. From this dataset of only eligible intervals, for both pricing nodes A and B, LMPs were calculated for all intervals based on the resource dispatch level and the its bid set. The calculated LMP is equal to that bid price corresponding to the constrained MW segment.

Table 8 shows the price impact analysis information for node A, which is in the PG&E area. This table shows all the five minute intervals in which the resource at PNode A was issued an exceptional dispatch instruction and was eligible to set the price. Out of the 8,940 five-minute intervals in October, this resource was issued exceptional dispatch instructions in 26 five-minute intervals. This resource was eligible to set the LMP in 26 intervals. Out of the 26 intervals, resource calculated LMP was larger than the market LMP in 1 intervals. In the 1 interval, the average increase in five minute LMP was \$0.77/MWh. Out of the 26 intervals, resource calculated LMP was less than the market LMP in 25 intervals. This implies that if the CAISO could model the constraint for this exceptional dispatch, then this resource and all other pricing nodes associated with that constraint would observe an average decrease of \$13.44/MWh.

Table 9 shows the price impact analysis information for node B, which is in the SCE area. This table shows all the five minute intervals in which the resource at PNode B was issued an exceptional dispatch instruction and was eligible to set the price. Out of the 8,940 five-minute intervals in October, this resource was issued exceptional dispatch instructions in 155 five-minute intervals. This resource was eligible to set the LMP in 349 intervals. Out of the 349 intervals, resource calculated LMP was larger than the market LMP in 219 intervals. In the 349 intervals, the average increase in five minute LMP was \$35.50/MWh. Out of the 349 intervals, resource calculated LMP was less than the market LMP in 130 intervals. This implies that if the CAISO could model the constraint for this exceptional dispatch, then this resource and all other pricing nodes associated with that constraint would observe an average decrease of \$10.12/MWh.

Table 8: Price Impact Analysis Information for Pricing Node A in PGAE LAP

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1	10/26/2022	19	2	13.89	Yes	12.75	-1.14
2	10/26/2022	19	3	60.03	Yes	12.75	-47.28
3	10/26/2022	19	4	61.47	Yes	12.75	-48.72
4	10/26/2022	19	5	62.04	Yes	12.75	-49.29
5	10/26/2022	19	6	59.15	Yes	12.75	-46.40
6	10/26/2022	19	7	14.37	Yes	12.75	-1.62
7	10/26/2022	19	8	14.38	Yes	12.75	-1.63
8	10/26/2022	19	9	14.38	Yes	12.75	-1.63
9	10/26/2022	19	10	14.15	Yes	12.75	-1.40
10	10/26/2022	19	11	14.15	Yes	12.75	-1.40
11	10/26/2022	19	12	14.15	Yes	12.75	-1.40
12	10/26/2022	20	1	14.43	Yes	12.75	-1.68
13	10/26/2022	20	2	14.41	Yes	12.75	-1.66
14	10/26/2022	20	3	21.05	Yes	12.75	-8.30
15	10/26/2022	20	4	14.44	Yes	12.75	-1.69
16	10/26/2022	20	5	14.44	Yes	12.75	-1.69
17	10/26/2022	20	6	14.44	Yes	12.75	-1.69
18	10/26/2022	20	7	14.39	Yes	12.75	-1.64
19	10/26/2022	20	8	14.39	Yes	12.75	-1.64
20	10/26/2022	20	9	14.39	Yes	12.75	-1.64
21	10/26/2022	20	10	13.15	Yes	12.75	-0.40
22	10/26/2022	20	11	14.64	Yes	12.75	-1.89
23	10/26/2022	20	12	11.98	Yes	12.75	0.77
24	10/31/2022	22	1	57.70	Yes	20.97	-36.73
25	10/31/2022	22	2	57.70	Yes	20.97	-36.73
26	10/31/2022	22	3	57.70	Yes	20.97	-36.73

Table 9: Price Impact Analysis Information for Pricing Node B in SCE LAP

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1	10/17/2022	7	11	99.01	Yes	70.05	-28.96
2	10/17/2022	7	12	112.84	Yes	70.05	-42.79
3	10/17/2022	8	1	109.22	Yes	86.02	-23.20
4	10/17/2022	8	2	109.22	Yes	86.02	-23.20
5	10/17/2022	8	3	94.00	Yes	86.02	-7.98
6	10/17/2022	8	4	99.22	Yes	86.02	-13.20
7	10/17/2022	8	5	102.70	Yes	86.02	-16.68
8	10/17/2022	8	6	94.22	Yes	86.02	-8.20
9	10/17/2022	8	7	85.70	Yes	86.02	0.32
10	10/17/2022	8	8	80.20	Yes	86.02	5.82
11	10/17/2022	8	9	69.30	Yes	86.02	16.72
12	10/17/2022	8	10	65.08	Yes	86.02	20.94
13	10/17/2022	8	11	61.38	Yes	86.02	24.64
14	10/17/2022	8	12	60.49	Yes	86.02	25.53
15	10/17/2022	9	1	76.74	Yes	86.02	9.28
16	10/17/2022	9	2	73.30	Yes	86.02	12.72
17	10/17/2022	9	3	64.90	Yes	86.02	21.12
18	10/17/2022	9	4	56.62	Yes	86.02	29.40
19	10/17/2022	9	5	53.52	Yes	86.02	32.50
20	10/17/2022	9	6	53.07	Yes	86.02	32.95
21	10/17/2022	9	7	51.66	Yes	86.02	34.36
22	10/17/2022	9	8	47.64	Yes	86.02	38.38
23	10/17/2022	9	9	44.17	Yes	86.02	41.85
24	10/17/2022	9	10	41.89	Yes	86.02	44.13
25	10/17/2022	9	11	41.81	Yes	86.02	44.21
26	10/17/2022	9	12	39.15	Yes	86.02	46.87
27	10/17/2022	10	1	43.63	Yes	86.02	42.39
28	10/17/2022	10	2	40.42	Yes	86.02	45.60
29	10/17/2022	10	3	38.61	Yes	86.02	47.41
30	10/17/2022	10	4	36.31	Yes	86.02	49.71
31	10/17/2022	10	5	35.99	Yes	86.02	50.03
32	10/17/2022	10	6	35.01	Yes	86.02	51.01
33	10/17/2022	10	7	31.52	Yes	86.02	54.50
34	10/17/2022	10	8	30.76	Yes	86.02	55.26

Department of Market Analysis and Forecasting – California ISO

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
35	10/17/2022	10	9	30.72	Yes	86.02	55.30
36	10/17/2022	10	10	30.70	Yes	86.02	55.32
37	10/17/2022	10	11	29.74	Yes	86.02	56.28
38	10/17/2022	10	12	25.92	Yes	86.02	60.10
39	10/17/2022	11	1	32.38	Yes	86.02	53.64
40	10/17/2022	11	2	32.29	Yes	86.02	53.73
41	10/17/2022	11	3	30.52	Yes	86.02	55.50
42	10/17/2022	11	4	30.55	Yes	86.02	55.47
43	10/17/2022	11	5	27.39	Yes	86.02	58.63
44	10/17/2022	11	6	27.58	Yes	86.02	58.44
45	10/17/2022	11	7	26.78	Yes	86.02	59.24
46	10/17/2022	11	8	27.74	Yes	86.02	58.28
47	10/17/2022	11	9	26.34	Yes	86.02	59.68
48	10/17/2022	11	10	29.81	Yes	86.02	56.21
49	10/17/2022	11	11	25.35	Yes	86.02	60.67
50	10/17/2022	11	12	25.93	Yes	86.02	60.09
51	10/17/2022	12	1	33.27	Yes	86.02	52.75
52	10/17/2022	12	2	34.41	Yes	86.02	51.61
53	10/17/2022	12	3	33.82	Yes	86.02	52.20
54	10/17/2022	12	4	33.02	Yes	86.02	53.00
55	10/17/2022	12	5	33.96	Yes	86.02	52.06
56	10/17/2022	12	6	32.33	Yes	86.02	53.69
57	10/17/2022	12	7	30.31	Yes	86.02	55.71
58	10/17/2022	12	8	30.30	Yes	86.02	55.72
59	10/17/2022	12	9	34.56	Yes	86.02	51.46
60	10/17/2022	12	10	32.36	Yes	86.02	53.66
61	10/17/2022	12	11	30.77	Yes	86.02	55.25
62	10/17/2022	12	12	32.89	Yes	86.02	53.13
63	10/17/2022	13	1	32.97	Yes	86.02	53.05
64	10/17/2022	13	2	34.01	Yes	86.02	52.01
65	10/17/2022	13	3	31.26	Yes	86.02	54.76
66	10/17/2022	13	4	31.73	Yes	86.02	54.29
67	10/17/2022	13	5	30.16	Yes	86.02	55.86
68	10/17/2022	13	6	35.05	Yes	86.02	50.97
69	10/17/2022	13	7	31.33	Yes	86.02	54.69
70	10/17/2022	13	8	31.07	Yes	86.02	54.95
71	10/17/2022	13	9	32.71	Yes	86.02	53.31
72	10/17/2022	13	10	34.68	Yes	86.02	51.34

Department of Market Analysis and Forecasting – California ISO

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
73	10/17/2022	13	11	33.54	Yes	86.02	52.48
74	10/17/2022	13	12	32.69	Yes	86.02	53.33
75	10/17/2022	14	1	34.87	Yes	86.02	51.15
76	10/17/2022	14	2	37.78	Yes	86.02	48.24
77	10/17/2022	14	3	37.13	Yes	86.02	48.89
78	10/17/2022	14	4	40.99	Yes	86.02	45.03
79	10/17/2022	14	5	38.17	Yes	86.02	47.85
80	10/17/2022	14	6	36.04	Yes	86.02	49.98
81	10/17/2022	14	7	41.61	Yes	86.02	44.41
82	10/17/2022	14	8	41.37	Yes	86.02	44.65
83	10/17/2022	14	9	42.07	Yes	86.02	43.95
84	10/17/2022	14	10	39.42	Yes	86.02	46.60
85	10/17/2022	14	11	37.79	Yes	86.02	48.23
86	10/17/2022	14	12	36.50	Yes	86.02	49.52
87	10/17/2022	15	1	41.00	Yes	86.02	45.02
88	10/17/2022	15	2	42.11	Yes	86.02	43.91
89	10/17/2022	15	3	42.68	Yes	86.02	43.34
90	10/17/2022	15	4	43.58	Yes	86.02	42.44
91	10/17/2022	15	5	41.58	Yes	86.02	44.44
92	10/17/2022	15	6	41.97	Yes	86.02	44.05
93	10/17/2022	15	7	41.33	Yes	86.02	44.69
94	10/17/2022	15	8	42.32	Yes	86.02	43.70
95	10/17/2022	15	9	39.09	Yes	86.02	46.93
96	10/17/2022	15	10	40.46	Yes	86.02	45.56
97	10/17/2022	15	11	40.87	Yes	86.02	45.15
98	10/17/2022	15	12	39.86	Yes	86.02	46.16
99	10/17/2022	16	1	37.54	Yes	86.02	48.48
100	10/17/2022	16	2	36.44	Yes	86.02	49.58
101	10/17/2022	16	3	38.58	Yes	86.02	47.44
102	10/17/2022	16	4	37.18	Yes	86.02	48.84
103	10/17/2022	16	5	42.24	Yes	86.02	43.78
104	10/17/2022	16	6	40.50	Yes	86.02	45.52
105	10/17/2022	16	7	40.50	Yes	86.02	45.52
106	10/17/2022	16	8	51.28	Yes	86.02	34.74
107	10/17/2022	16	9	49.05	Yes	86.02	36.97
108	10/17/2022	16	10	47.87	Yes	86.02	38.15
109	10/17/2022	16	11	44.29	Yes	86.02	41.73
110	10/17/2022	16	12	42.50	Yes	86.02	43.52

Department of Market Analysis and Forecasting – California ISO

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
111	10/17/2022	17	1	49.08	Yes	86.02	36.94
112	10/17/2022	17	2	47.09	Yes	86.02	38.93
113	10/17/2022	17	3	49.12	Yes	86.02	36.90
114	10/17/2022	17	4	52.33	Yes	86.02	33.69
115	10/17/2022	17	5	53.54	Yes	86.02	32.48
116	10/17/2022	17	6	55.52	Yes	86.02	30.50
117	10/17/2022	17	7	57.23	Yes	86.02	28.79
118	10/17/2022	17	8	66.54	Yes	86.02	19.48
119	10/17/2022	17	9	74.96	Yes	86.02	11.06
120	10/17/2022	17	10	83.51	Yes	86.02	2.51
121	10/17/2022	17	11	86.35	Yes	86.02	-0.33
122	10/17/2022	17	12	86.93	Yes	86.02	-0.91
123	10/17/2022	18	1	64.13	Yes	84.10	19.97
124	10/17/2022	18	2	62.35	Yes	84.10	21.75
125	10/17/2022	18	3	64.15	Yes	84.10	19.95
126	10/17/2022	18	4	66.90	Yes	84.10	17.20
127	10/17/2022	18	5	72.05	Yes	84.10	12.05
128	10/17/2022	18	6	79.16	Yes	84.10	4.94
129	10/17/2022	18	7	84.10	Yes	84.10	0.00
130	10/17/2022	18	8	85.11	Yes	84.10	-1.01
131	10/17/2022	18	9	87.87	Yes	84.10	-3.77
132	10/17/2022	18	10	97.24	Yes	84.10	-13.14
133	10/17/2022	18	11	96.99	Yes	84.10	-12.89
134	10/17/2022	18	12	96.42	Yes	84.10	-12.32
135	10/17/2022	19	1	84.60	Yes	84.10	-0.50
136	10/17/2022	19	2	81.00	Yes	84.10	3.10
137	10/17/2022	19	3	84.10	Yes	84.10	0.00
138	10/17/2022	19	4	84.36	Yes	84.10	-0.26
139	10/17/2022	19	5	84.66	Yes	84.10	-0.56
140	10/17/2022	19	6	84.66	Yes	84.10	-0.56
141	10/17/2022	19	7	87.51	Yes	84.10	-3.41
142	10/17/2022	19	8	88.00	Yes	84.10	-3.90
143	10/17/2022	19	9	88.02	Yes	84.10	-3.92
144	10/17/2022	19	10	85.07	Yes	84.10	-0.97
145	10/17/2022	19	11	84.92	Yes	84.10	-0.82
146	10/17/2022	19	12	85.07	Yes	84.10	-0.97
147	10/17/2022	20	1	87.04	Yes	84.10	-2.94
148	10/17/2022	20	2	87.04	Yes	84.10	-2.94

Department of Market Analysis and Forecasting – California ISO

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
149	10/17/2022	20	3	85.38	Yes	84.10	-1.28
150	10/17/2022	20	4	85.23	Yes	84.10	-1.13
151	10/17/2022	20	5	85.19	Yes	84.10	-1.09
152	10/17/2022	20	6	85.23	Yes	84.10	-1.13
153	10/17/2022	20	7	84.91	Yes	84.10	-0.81
154	10/17/2022	20	8	84.34	Yes	84.10	-0.24
155	10/17/2022	20	9	83.92	Yes	84.10	0.18
156	10/17/2022	20	10	84.00	Yes	84.10	0.10
157	10/17/2022	20	11	83.75	Yes	84.10	0.35
158	10/17/2022	20	12	80.68	Yes	84.10	3.42
159	10/17/2022	21	1	87.55	Yes	84.10	-3.45
160	10/17/2022	21	2	87.45	Yes	84.10	-3.35
161	10/17/2022	21	3	85.75	Yes	84.10	-1.65
162	10/17/2022	21	4	85.28	Yes	84.10	-1.18
163	10/17/2022	21	5	85.25	Yes	84.10	-1.15
164	10/17/2022	21	6	85.25	Yes	84.10	-1.15
165	10/17/2022	21	7	84.89	Yes	84.10	-0.79
166	10/17/2022	21	8	84.29	Yes	84.10	-0.19
167	10/17/2022	21	9	80.45	Yes	84.10	3.65
168	10/17/2022	21	10	74.51	Yes	84.10	9.59
169	10/17/2022	21	11	73.72	Yes	84.10	10.38
170	10/17/2022	21	12	74.27	Yes	84.10	9.83
171	10/17/2022	22	1	88.00	Yes	84.10	-3.90
172	10/17/2022	22	2	89.35	Yes	84.10	-5.25
173	10/17/2022	22	3	92.14	Yes	84.10	-8.04
174	10/17/2022	22	4	91.22	Yes	84.10	-7.12
175	10/17/2022	22	5	91.70	Yes	84.10	-7.60
176	10/17/2022	22	6	90.21	Yes	84.10	-6.11
177	10/17/2022	22	7	87.66	Yes	84.10	-3.56
178	10/17/2022	22	8	84.86	Yes	84.10	-0.76
179	10/17/2022	22	9	83.88	Yes	84.10	0.22
180	10/17/2022	22	10	84.23	Yes	84.10	-0.13
181	10/17/2022	22	11	82.30	Yes	84.10	1.80
182	10/17/2022	22	12	82.30	Yes	84.10	1.80
183	10/17/2022	23	1	89.90	Yes	86.02	-3.88
184	10/17/2022	23	2	89.63	Yes	86.02	-3.61
185	10/17/2022	23	3	87.61	Yes	86.02	-1.59
186	10/17/2022	23	4	85.92	Yes	86.02	0.10

Department of Market Analysis and Forecasting – California ISO

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
187	10/17/2022	23	5	85.30	Yes	86.02	0.72
188	10/17/2022	23	6	86.02	Yes	86.02	0.00
189	10/17/2022	23	7	85.96	Yes	86.02	0.06
190	10/17/2022	23	8	85.76	Yes	86.02	0.26
191	10/17/2022	23	9	79.74	Yes	86.02	6.28
192	10/17/2022	23	10	79.94	Yes	86.02	6.08
193	10/17/2022	23	11	79.71	Yes	86.02	6.31
194	10/17/2022	23	12	78.46	Yes	86.02	7.56
195	10/17/2022	24	1	85.57	Yes	86.02	0.45
196	10/17/2022	24	2	85.79	Yes	86.02	0.23
197	10/17/2022	24	3	82.18	Yes	86.02	3.84
198	10/17/2022	24	4	84.26	Yes	86.02	1.76
199	10/17/2022	24	5	84.26	Yes	86.02	1.76
200	10/17/2022	24	6	80.72	Yes	86.02	5.30
201	10/17/2022	24	7	81.16	Yes	86.02	4.86
202	10/17/2022	24	8	79.45	Yes	86.02	6.57
203	10/17/2022	24	9	76.95	Yes	86.02	9.07
204	10/17/2022	24	10	60.93	Yes	86.02	25.09
205	10/17/2022	24	11	64.00	Yes	86.02	22.02
206	10/17/2022	24	12	67.54	Yes	86.02	18.48
207	10/18/2022	1	2	103.17	Yes	75.69	-27.48
208	10/18/2022	1	3	98.37	Yes	75.69	-22.68
209	10/18/2022	1	4	96.65	Yes	75.69	-20.96
210	10/18/2022	1	5	94.42	Yes	75.69	-18.73
211	10/18/2022	1	6	96.88	Yes	75.69	-21.19
212	10/18/2022	1	7	94.55	Yes	75.69	-18.86
213	10/18/2022	1	8	89.47	Yes	75.69	-13.78
214	10/18/2022	1	9	90.12	Yes	75.69	-14.43
215	10/18/2022	1	10	78.07	Yes	75.69	-2.38
216	10/18/2022	1	11	82.50	Yes	75.69	-6.81
217	10/18/2022	1	12	77.45	Yes	75.69	-1.76
218	10/18/2022	2	1	92.51	Yes	75.69	-16.82
219	10/18/2022	2	2	87.51	Yes	75.69	-11.82
220	10/18/2022	2	3	87.51	Yes	75.69	-11.82
221	10/18/2022	2	4	87.97	Yes	75.69	-12.28
222	10/18/2022	2	5	90.00	Yes	75.69	-14.31
223	10/18/2022	2	6	86.80	Yes	75.69	-11.11
224	10/18/2022	2	7	87.51	Yes	75.69	-11.82

Department of Market Analysis and Forecasting – California ISO

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
225	10/18/2022	2	8	87.44	Yes	75.69	-11.75
226	10/18/2022	2	9	87.11	Yes	75.69	-11.42
227	10/18/2022	2	10	87.11	Yes	75.69	-11.42
228	10/18/2022	2	11	86.03	Yes	75.69	-10.34
229	10/18/2022	2	12	82.57	Yes	75.69	-6.88
230	10/18/2022	3	1	81.64	Yes	75.69	-5.95
231	10/18/2022	3	2	82.39	Yes	75.69	-6.70
232	10/18/2022	3	3	77.79	Yes	75.69	-2.10
233	10/18/2022	3	4	77.53	Yes	75.69	-1.84
234	10/18/2022	3	5	77.53	Yes	75.69	-1.84
235	10/18/2022	3	6	77.79	Yes	75.69	-2.10
236	10/18/2022	3	7	77.79	Yes	75.69	-2.10
237	10/18/2022	3	8	78.00	Yes	75.69	-2.31
238	10/18/2022	3	9	77.88	Yes	75.69	-2.19
239	10/18/2022	3	10	75.68	Yes	75.69	0.01
240	10/18/2022	3	11	75.02	Yes	75.69	0.67
241	10/18/2022	3	12	75.69	Yes	75.69	0.00
242	10/18/2022	4	1	75.00	Yes	75.69	0.69
243	10/18/2022	4	2	75.69	Yes	75.69	0.00
244	10/18/2022	4	3	75.00	Yes	75.69	0.69
245	10/18/2022	4	4	75.00	Yes	75.69	0.69
246	10/18/2022	4	5	75.69	Yes	75.69	0.00
247	10/18/2022	4	6	77.37	Yes	75.69	-1.68
248	10/18/2022	4	7	75.68	Yes	75.69	0.01
249	10/18/2022	4	8	75.68	Yes	75.69	0.01
250	10/18/2022	4	9	75.68	Yes	75.69	0.01
251	10/18/2022	4	10	75.00	Yes	75.69	0.69
252	10/18/2022	4	11	75.00	Yes	75.69	0.69
253	10/18/2022	4	12	74.48	Yes	75.69	1.21
254	10/18/2022	5	1	75.68	Yes	75.69	0.01
255	10/18/2022	5	2	75.68	Yes	75.69	0.01
256	10/18/2022	5	3	76.66	Yes	75.69	-0.97
257	10/18/2022	5	4	79.67	Yes	75.69	-3.98
258	10/18/2022	5	5	82.77	Yes	75.69	-7.08
259	10/18/2022	5	6	83.06	Yes	75.69	-7.37
260	10/18/2022	5	7	85.29	Yes	75.69	-9.60
261	10/18/2022	5	8	83.26	Yes	75.69	-7.57
262	10/18/2022	5	9	94.77	Yes	75.69	-19.08

Department of Market Analysis and Forecasting – California ISO

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
263	10/18/2022	5	10	94.64	Yes	75.69	-18.95
264	10/18/2022	5	11	95.59	Yes	75.69	-19.90
265	10/18/2022	5	12	91.33	Yes	75.69	-15.64
266	10/18/2022	6	1	94.10	Yes	75.69	-18.41
267	10/18/2022	6	2	85.83	Yes	75.69	-10.14
268	10/18/2022	6	3	83.18	Yes	75.69	-7.49
269	10/18/2022	6	4	80.00	Yes	75.69	-4.31
270	10/18/2022	6	5	83.99	Yes	75.69	-8.30
271	10/18/2022	6	6	90.13	Yes	75.69	-14.44
272	10/18/2022	6	7	84.14	Yes	75.69	-8.45
273	10/18/2022	6	8	89.83	Yes	75.69	-14.14
274	10/18/2022	6	9	94.45	Yes	75.69	-18.76
275	10/18/2022	6	10	109.84	Yes	75.69	-34.15
276	10/18/2022	6	11	109.83	Yes	75.69	-34.14
277	10/18/2022	6	12	109.83	Yes	75.69	-34.14
278	10/18/2022	7	1	82.55	Yes	75.69	-6.86
279	10/18/2022	7	2	80.50	Yes	75.69	-4.81
280	10/18/2022	7	3	77.98	Yes	75.69	-2.29
281	10/18/2022	7	4	79.56	Yes	75.69	-3.87
282	10/18/2022	7	5	82.25	Yes	75.69	-6.56
283	10/18/2022	7	6	88.86	Yes	75.69	-13.17
284	10/18/2022	7	7	110.00	Yes	75.69	-34.31
285	10/18/2022	7	8	112.20	Yes	75.69	-36.51
286	10/18/2022	7	9	115.46	Yes	75.69	-39.77
287	10/18/2022	7	10	121.00	Yes	75.69	-45.31
288	10/18/2022	7	11	125.00	Yes	75.69	-49.31
289	10/18/2022	7	12	137.73	Yes	75.69	-62.04
290	10/18/2022	8	1	119.10	Yes	94.88	-24.22
291	10/18/2022	8	2	117.63	Yes	94.88	-22.75
292	10/18/2022	8	3	98.66	Yes	94.88	-3.78
293	10/18/2022	8	4	97.73	Yes	94.88	-2.85
294	10/18/2022	8	5	83.73	Yes	94.88	11.15
295	10/18/2022	8	6	79.95	Yes	94.88	14.93
296	10/18/2022	8	7	87.00	Yes	94.88	7.88
297	10/18/2022	8	8	70.93	Yes	94.88	23.95
298	10/18/2022	8	9	66.71	Yes	94.88	28.17
299	10/18/2022	8	10	58.30	Yes	94.88	36.58
300	10/18/2022	8	11	57.70	Yes	94.88	37.18

Department of Market Analysis and Forecasting – California ISO

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
301	10/18/2022	8	12	57.98	Yes	94.88	36.90
302	10/18/2022	9	1	64.24	Yes	94.88	30.64
303	10/18/2022	9	2	65.35	Yes	94.88	29.53
304	10/18/2022	9	3	61.44	Yes	94.88	33.44
305	10/18/2022	9	4	58.39	Yes	94.88	36.49
306	10/18/2022	9	5	55.02	Yes	94.88	39.86
307	10/18/2022	9	6	55.95	Yes	94.88	38.93
308	10/18/2022	9	7	53.36	Yes	94.88	41.52
309	10/18/2022	9	8	52.59	Yes	94.88	42.29
310	10/18/2022	9	9	47.77	Yes	94.88	47.11
311	10/18/2022	9	10	41.15	Yes	94.88	53.73
312	10/18/2022	9	11	40.75	Yes	94.88	54.13
313	10/18/2022	9	12	36.90	Yes	94.88	57.98
314	10/18/2022	10	1	50.65	Yes	94.88	44.23
315	10/18/2022	10	2	50.87	Yes	94.88	44.01
316	10/18/2022	10	3	43.60	Yes	94.88	51.28
317	10/18/2022	10	4	43.02	Yes	94.88	51.86
318	10/18/2022	10	5	42.95	Yes	94.88	51.93
319	10/18/2022	10	6	41.41	Yes	94.88	53.47
320	10/18/2022	10	7	45.75	Yes	94.88	49.13
321	10/18/2022	10	8	44.68	Yes	94.88	50.20
322	10/18/2022	10	9	44.11	Yes	94.88	50.77
323	10/18/2022	10	10	39.32	Yes	94.88	55.56
324	10/18/2022	10	11	39.20	Yes	94.88	55.68
325	10/18/2022	10	12	37.85	Yes	94.88	57.03
326	10/18/2022	11	1	42.90	Yes	94.88	51.98
327	10/18/2022	11	2	42.59	Yes	94.88	52.29
328	10/18/2022	11	3	42.94	Yes	94.88	51.94
329	10/18/2022	11	4	43.59	Yes	94.88	51.29
330	10/18/2022	11	5	42.69	Yes	94.88	52.19
331	10/18/2022	11	6	41.87	Yes	94.88	53.01
332	10/18/2022	11	7	41.15	Yes	94.88	53.73
333	10/18/2022	11	8	41.81	Yes	94.88	53.07
334	10/18/2022	11	9	42.38	Yes	94.88	52.50
335	10/18/2022	11	10	42.60	Yes	94.88	52.28
336	10/18/2022	11	11	41.55	Yes	94.88	53.33
337	10/18/2022	11	12	42.99	Yes	94.88	51.89
338	10/18/2022	12	1	41.17	Yes	94.88	53.71

Department of Market Analysis and Forecasting – California ISO

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
339	10/18/2022	12	2	42.15	Yes	94.88	52.73
340	10/18/2022	12	3	41.62	Yes	94.88	53.26
341	10/18/2022	12	4	47.35	Yes	94.88	47.53
342	10/18/2022	12	5	48.94	Yes	94.88	45.94
343	10/18/2022	12	6	48.58	Yes	94.88	46.30
344	10/18/2022	12	7	47.25	Yes	94.88	47.63
345	10/18/2022	12	8	48.49	Yes	94.88	46.39
346	10/18/2022	12	9	47.32	Yes	94.88	47.56
347	10/18/2022	12	10	48.68	Yes	94.88	46.20
348	10/18/2022	12	11	48.69	Yes	94.88	46.19
349	10/18/2022	12	12	49.03	Yes	94.88	45.85

Appendix C: Exceptional Dispatch Bid Mitigation Analysis

In October 2022, the ISO applied the exceptional dispatch bid mitigation to the exceptional dispatches. Table 10 shows the costs by instruction type in October. With exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches were \$2,336. Without the exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches would be \$9,988. The cost saving from the exceptional dispatch bid mitigation was \$7,653.

Table 10: Bid Mitigation Analysis for October 2022

Type	Number of Resources	Costs without Bid Mitigation	Costs with Bid Mitigation	Cost Savings
NONTMOD	1	8,958	1,251	7,707
TMODEL5	1	1,030	1,084	(54)
Total	2	9,988	2,336	7,653

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon the parties listed on the official service lists in the above-referenced 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 15th day of December, 2022.

/s/ Ariana Rebanco
Ariana Rebanco