



Exceptional Dispatch Report

Table 2: October 2023

Market Performance and Advanced Analytics

December 15, 2023

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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 2023.

This report contains a price impact analysis as prescribed by FERC in its September 2 order. The price impact analysis for the month of December is presented in Appendix B. This report also includes mitigation analysis for October 2023 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 inertia 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 2023 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 2023. 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/rules/Pages/OperatingProcedures/Default.aspx>

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.

There were no exceptional dispatches issued as a pre-day-ahead commitment.

Table 1: Exceptional Dispatches in October 2023

California Independent System Operator Corporation Exceptional Dispatch Report December 15, 2023																					
Chart 2: Table of Exceptional Dispatches for Period 01/October/2023 – 31/October/2023																					
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	Big Creek-Ventura	10/18/2023	50	No	INC	2	22:00	0:00	-14.06	75636.64	0.00	1454.15	0.00	0.00	0.00	0.00	0.00	0.00
2	RT	Bridging Schedules	SCE	LA Basin	10/14/2023	98	No	INC	6	1:00	7:00	-5.43	144661.56	0.00	714.92	0.00	0.00	0.00	0.00	0.00	0.00
3	RT	Bridging Schedules	SCE	LA Basin	10/27/2023	10 - 20	No	INC	1	23:00	0:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	RT	Fast Start Unit Management	SCE	LA Basin	10/9/2023	0	No	INC	1	3:30	4:10	-48.38	2500.75	0.00	0.00	-48.38	0.00	0.00	0.00	0.00	0.00
5	RT	Incomplete or Inaccurate Transmission	PGAE	Sierra	10/28/2023	41	No	DEC	3	10:00	13:00	-2.30	0.00	0.00	94.61	-0.50	0.00	23.71	0.00	-23.74	0.00
6	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	10/18/2023	750	No	INC	3	18:20	20:30	8.43	182980.80	0.00	-775.89	14.27	1358.08	0.00	-4153.56	0.00	0.00
7	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	10/19/2023	50	No	INC	24	0:00	0:00	12.28	409090.68	0.00	-399.34	0.00	0.00	0.00	0.00	0.00	0.00
8	RT	Load Forecast Uncertainty	SCE	LA Basin	10/5/2023	80 - 194	No	INC	2	18:00	20:00	-89.29	0.00	0.00	7388.82	0.00	0.00	0.00	-428.00	0.00	0.00
9	RT	Load Forecast Uncertainty	SCE	LA Basin	10/6/2023	80 - 173	No	INC	7	16:00	23:00	-22.22	0.00	0.00	1659.13	0.00	0.00	0.00	-62168.50	0.00	0.00
10	RT	Load Forecast Uncertainty	SCE	LA Basin	10/18/2023	59 - 176	No	INC	4	16:00	20:00	-123.01	0.00	0.00	10047.93	0.00	0.00	0.00	-98945.74	0.00	0.00
11	RT	Market Disruption	SCE	LA Basin	10/26/2023	190 - 194	No	INC	3	17:00	20:00	-235.79	0.00	0.00	18102.99	10.37	-655.19	0.00	-3556.21	0.00	0.00
12	RT	Other Reliability Requirement	PGAE	Fresno	10/9/2023	83 - 400	No	INC	2	10:05	12:00	-4.61	20986.09	0.00	887.05	-10.64	-406.11	851.62	-17.71	0.00	0.00
13	RT	Other Reliability Requirement	SDGE	San Diego-IV	10/17/2023	96	No	DEC	5	15:55	20:00	-93.32	0.00	0.00	9087.90	0.00	0.00	0.00	0.00	0.00	0.00
14	RT	Other Reliability Requirement	SDGE	San Diego-IV	10/17/2023	96	No	INC	1	16:00	17:00	-259.70	0.00	0.00	15249.23	0.00	0.00	0.00	0.00	0.00	0.00
15	RT	Planned Transmission Outage	PGAE	Bay Area	10/5/2023	0 - 440	No	DEC	17	6:20	23:15	-101.12	-63827.77	0.00	8198.54	-115.03	0.00	9006.50	0.00	-166247.21	0.00
16	RT	Planned Transmission Outage	PGAE	Bay Area	10/5/2023	0 - 440	No	INC	16	8:00	0:00	-44.04	0.00	0.00	1505.98	0.00	0.00	0.00	0.00	0.00	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitment	INC_ DEC	Hour s	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC662 0
17	RT	Planned Transmission Outage	PGAE	Bay Area	10/6/2023	22	No	DEC	5	15:00	20:00	1.99	0.00	0.00	-150.88	0.00	0.00	0.00	0.00	0.00	0.00
18	RT	Planned Transmission Outage	PGAE	Bay Area	10/6/2023	0 - 22	No	INC	22	0:00	22:00	313.93	0.00	0.00	-25172.19	0.00	0.00	0.00	0.00	0.00	0.00
19	RT	Planned Transmission Outage	PGAE	Bay Area	10/10/2023	20	No	INC	3	15:40	17:45	26.67	0.00	0.00	-1386.69	0.00	0.00	0.00	0.00	0.00	0.00
20	RT	Planned Transmission Outage	PGAE	Bay Area	10/11/2023	20	No	INC	15	6:00	21:00	272.65	0.00	0.00	-12911.46	0.00	0.00	0.00	0.00	0.00	0.00
21	RT	Planned Transmission Outage	PGAE	Bay Area	10/12/2023	20	No	INC	15	6:00	21:00	299.17	0.00	0.00	-8051.51	0.00	0.00	0.00	0.00	0.00	0.00
22	RT	Planned Transmission Outage	PGAE	Bay Area	10/13/2023	20	No	INC	15	6:00	21:00	299.17	0.00	0.00	-16156.58	0.00	0.00	0.00	0.00	0.00	0.00
23	RT	Planned Transmission Outage	PGAE	Bay Area	10/14/2023	20	No	INC	15	6:00	21:00	302.92	0.00	0.00	-7811.33	0.00	0.00	0.00	0.00	0.00	0.00
24	RT	Planned Transmission Outage	PGAE	Bay Area	10/15/2023	20	No	INC	16	6:00	21:45	308.33	0.00	0.00	-17303.76	0.00	0.00	0.00	0.00	0.00	0.00
25	RT	Planned Transmission Outage	PGAE	Bay Area	10/16/2023	20	No	INC	9	6:00	14:30	161.53	0.00	0.00	-9179.95	0.00	0.00	0.00	0.00	0.00	0.00
26	RT	Planned Transmission Outage	PGAE	Bay Area	10/19/2023	22 - 200	No	DEC	4	16:00	20:00	-61.11	-33842.57	0.00	8159.48	0.00	0.00	0.00	0.00	0.00	0.00
27	RT	Planned Transmission Outage	PGAE	Bay Area	10/19/2023	22	No	INC	1	15:35	16:00	8.22	0.00	0.00	-755.17	0.00	0.00	0.00	0.00	0.00	0.00
28	RT	Planned Transmission Outage	PGAE	Bay Area	10/28/2023	54	No	INC	13	6:00	19:00	-0.13	79245.01	13535.99	7.41	0.00	0.00	0.00	0.00	0.00	0.00
29	RT	Planned Transmission Outage	PGAE	Humboldt	10/3/2023	80	No	INC	19	3:30	22:30	0.04	0.00	0.00	-7.82	0.00	0.00	0.00	0.00	0.00	0.00
30	RT	Planned Transmission Outage	PGAE	Humboldt	10/12/2023	45 - 60	No	INC	9	7:30	16:00	26.39	27285.85	0.00	-1189.48	0.81	-33.45	0.00	0.00	-259.55	0.00
31	RT	Planned Transmission Outage	PGAE	Humboldt	10/19/2023	30	No	DEC	4	18:55	22:00	-4.42	-3284.10	0.00	328.93	0.00	0.00	0.00	0.00	0.00	0.00
32	RT	Planned Transmission Outage	PGAE	Humboldt	10/19/2023	30	No	INC	2	22:00	0:00	-0.14	5236.34	0.00	14.27	0.00	0.00	0.00	0.00	0.00	0.00
33	RT	Planned Transmission Outage	PGAE	Humboldt	10/20/2023	45	No	DEC	13	9:00	22:00	-4.89	-30394.03	0.00	386.09	0.00	0.00	0.00	0.00	0.00	0.00
34	RT	Planned Transmission Outage	PGAE	Humboldt	10/20/2023	30 - 45	No	INC	9	0:00	9:00	8.82	19285.41	0.00	-760.69	0.00	0.00	0.00	0.00	0.00	0.00

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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
35	RT	Planned Transmission Outage	PGAE	Humboldt	10/21/2023	30 - 45	No	INC	21	3:50	0:00	35.99	52237.75	0.00	-2557.77	0.00	0.00	0.00	0.00	0.00	0.00
36	RT	Planned Transmission Outage	PGAE	Humboldt	10/22/2023	30	No	INC	24	0:00	0:00	0.00	52511.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
37	RT	Planned Transmission Outage	PGAE	Humboldt	10/23/2023	30 - 45	No	INC	20	0:00	20:00	-2.74	54699.19	0.00	-81.53	0.00	0.00	0.00	0.00	0.00	0.00
38	RT	Planned Transmission Outage	PGAE	Humboldt	10/24/2023	30 - 60	No	INC	15	9:15	0:00	3.88	36063.45	0.00	-141.86	0.00	0.00	0.00	0.00	0.00	0.00
39	RT	Planned Transmission Outage	PGAE	Humboldt	10/25/2023	30 - 60	No	INC	24	0:00	0:00	4.31	93718.40	0.00	-393.35	0.00	0.00	0.00	0.00	0.00	0.00
40	RT	Planned Transmission Outage	PGAE	Humboldt	10/26/2023	45 - 60	No	INC	24	0:00	0:00	-21.84	133092.37	0.00	1720.60	0.00	0.00	0.00	0.00	0.00	0.00
41	RT	Planned Transmission Outage	PGAE	Humboldt	10/27/2023	15 - 45	No	INC	24	0:00	0:00	-2.91	92529.09	879.69	203.36	0.00	0.00	0.00	0.00	0.00	0.00
42	RT	Planned Transmission Outage	PGAE	Humboldt	10/28/2023	15 - 30	No	INC	24	0:00	0:00	2.02	100397.27	0.00	-265.37	0.00	0.00	0.00	0.00	0.00	0.00
43	RT	Planned Transmission Outage	PGAE	Humboldt	10/30/2023	15 - 30	No	INC	14	10:00	0:00	42.71	5459.67	0.00	-4535.24	0.00	0.00	0.00	0.00	0.00	0.00
44	RT	Planned Transmission Outage	PGAE	Humboldt	10/31/2023	15	No	DEC	20	0:00	20:00	2.41	0.00	0.00	-161.06	0.00	0.00	0.00	0.00	0.00	0.00
45	RT	Planned Transmission Outage	PGAE	Humboldt	10/31/2023	15 - 30	No	INC	24	0:00	0:00	27.84	68699.55	0.00	-3548.10	0.00	0.00	0.00	0.00	0.00	0.00
46	RT	Planned Transmission Outage	PGAE	Kern	10/12/2023	32	No	INC	8	9:30	17:00	-1.80	15086.85	6188.78	85.79	0.00	0.00	0.00	0.00	0.00	0.00
47	RT	Planned Transmission Outage	PGAE	Kern	10/24/2023	5	No	DEC	7	10:15	17:00	-4.16	0.00	0.00	105.77	-3.79	0.00	95.82	0.00	-1290.41	0.00
48	RT	Planned Transmission Outage	PGAE	Kern	10/24/2023	5	No	INC	2	17:00	19:00	-0.14	0.00	0.00	11.41	0.00	0.00	0.00	0.00	0.00	0.00
49	RT	Planned Transmission Outage	PGAE	Sierra	10/5/2023	13 - 30	No	DEC	6	12:35	17:45	-5.33	0.00	0.00	-1066.89	-10.67	0.00	-620.85	0.00	-479.67	0.00
50	RT	Planned Transmission Outage	PGAE	Sierra	10/18/2023	20	No	DEC	1	8:35	9:00	8.39	-515.94	0.00	-328.64	0.00	0.00	0.00	0.00	0.00	0.00
51	RT	Planned Transmission Outage	PGAE	Sierra	10/18/2023	20	No	INC	5	9:00	14:00	-0.30	3095.63	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00
52	RT	Planned Transmission Outage	PGAE	NA	10/24/2023	10	No	INC	9	10:15	19:00	-3.22	0.00	0.00	81.30	-3.33	0.00	86.67	0.00	-69.93	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitment	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	
53	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/17/2023	670	No	DEC	1	23:25	0:00	-59.06	0.00	0.00	4051.42	-56.77	0.00	3888.90	0.00	-2277.78	0.00	
54	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/18/2023	670	No	DEC	5	0:00	5:00	-27.05	-28333.04	0.00	917.73	0.00	0.00	0.00	0.00	-	11971.98	0.00
55	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/19/2023	675 - 775	No	DEC	15	9:15	0:00	20.32	0.00	0.00	-1421.90	-115.93	0.00	9326.43	0.00	-	57099.00	0.00
56	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/20/2023	700 - 750	No	DEC	16	8:40	0:00	-71.21	0.00	0.00	5077.20	-64.12	0.00	4518.74	0.00	-	41526.74	0.00
57	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/21/2023	415 - 700	No	DEC	22	0:00	21:30	-146.29	-31355.84	0.00	2519.13	-161.16	0.00	7712.44	0.00	-	92558.96	0.00
58	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/22/2023	425 - 750	No	DEC	5	3:30	8:00	-72.00	0.00	0.00	2238.79	-82.78	0.00	2897.19	0.00	-3814.24	0.00	
59	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/22/2023	445 - 720	No	INC	4	6:00	10:00	46.12	5442.91	0.00	-571.93	0.00	0.00	0.00	0.00	0.00	0.00	
60	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/23/2023	700	No	DEC	6	17:00	22:45	-39.72	0.00	0.00	2006.94	-70.30	0.00	3356.97	0.00	-	17035.01	0.00
61	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/24/2023	730	No	DEC	5	14:00	19:00	105.95	0.00	0.00	-3297.58	0.00	0.00	0.00	0.00	-9410.73	0.00	
62	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	10/24/2023	730 - 750	No	INC	4	10:10	14:00	96.99	0.00	0.00	-3212.78	-20.47	0.00	662.53	0.00	-23.43	0.00	
63	RT	Planned Transmission Outage	SCE	LA Basin	10/11/2023	0	No	INC	11	2:35	12:45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
64	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/6/2023	25	No	INC	4	20:00	0:00	12.52	15021.38	0.00	-1027.22	0.06	-5.11	0.00	0.00	-1.78	0.00	
65	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/7/2023	25	Yes	INC	1	0:00	0:15	-0.03	979.94	0.00	2.11	0.00	0.00	0.00	0.00	0.00	0.00	
66	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/23/2023	24.87	No	INC	7	9:15	16:00	12.27	25009.66	1043.34	-1376.17	0.00	0.00	0.00	0.00	0.00	0.00	
67	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/25/2023	0	No	DEC	5	17:00	22:00	-3.17	0.00	0.00	259.02	0.00	0.00	0.00	0.00	-	15788.18	0.00
68	RT	Planned Transmission Outage	SDGE	San Diego-IV	10/25/2023	0	No	INC	8	15:10	23:00	6.13	0.00	0.00	334.38	8.75	44.46	0.00	0.00	-291.47	0.00	
69	RT	Ramping Capacity	PGAE	Bay Area	10/14/2023	64 - 114.01	No	INC	5	4:00	9:00	20.41	24570.60	10376.90	-1712.39	0.01	-0.72	0.00	0.00	0.00	0.00	
70	RT	Ramping Capacity	SCE	Big Creek-Ventura	10/18/2023	401	No	INC	4	16:00	20:00	-237.63	112351.00	0.00	27611.62	6.03	-814.21	0.00	0.00	0.00	0.00	

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Chart 2: Table of Exceptional Dispatches for Period 01/October/2023 – 31/October/2023

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitment	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
71	RT	Ramping Capacity	SCE	Big Creek-Ventura	10/19/2023	401	No	INC	5	16:00	21:00	-523.26	344830.15	0.00	63595.63	0.23	-32.44	0.00	0.00	0.00	0.00
72	RT	Ramping Capacity	SCE	LA Basin	10/14/2023	190 - 251	No	INC	3	7:00	9:30	2.47	40092.64	0.00	-970.77	8.57	-	1074.23	0.00	0.00	0.00
73	RT	Ramping Capacity	SCE	LA Basin	10/18/2023	190 - 222	No	INC	3	17:35	20:00	-14.75	0.00	0.00	1681.52	10.67	-	1622.63	0.00	0.00	0.00
74	RT	Ramping Capacity	SCE	LA Basin	10/19/2023	65 - 194	No	INC	5	16:00	21:00	-583.00	0.00	0.00	67017.15	0.00	0.00	0.00	0.00	0.00	0.00
75	RT	Ramping Capacity	SCE	NA	10/14/2023	180 - 240.01	No	INC	2	7:30	9:30	27.56	8690.54	0.00	-243.65	0.00	0.00	0.00	0.00	0.00	0.00
76	RT	Reliability Assessment	PGAE	Bay Area	10/5/2023	20 - 290	No	DEC	4	16:20	20:00	-221.42	-51292.76	479.84	14611.81	-21.17	0.00	909.76	0.00	0.00	0.00
77	RT	Reliability Assessment	PGAE	Bay Area	10/5/2023	20 - 22	No	INC	8	15:50	23:00	109.16	9775.12	159.95	-13173.63	0.00	0.00	0.00	0.00	0.00	0.00
78	RT	Reliability Assessment	PGAE	Bay Area	10/6/2023	20	No	INC	1	16:20	16:45	5.00	0.00	0.00	-288.65	0.00	0.00	0.00	0.00	0.00	0.00
79	RT	Reliability Assessment	PGAE	Fresno	10/13/2023	0	No	INC	1	12:30	12:45	78.75	0.00	0.00	-262.26	0.00	0.00	0.00	0.00	0.00	0.00
80	RT	Reliability Assessment	PGAE	Fresno	10/14/2023	0 - 83	No	INC	3	8:00	10:35	33.04	5181.42	0.00	-726.68	0.00	0.00	0.00	0.00	0.00	0.00
81	RT	Reliability Assessment	PGAE	Humboldt	10/1/2023	15 - 30	No	INC	24	0:00	0:00	-4.13	31429.96	0.00	148.81	0.00	0.00	0.00	0.00	0.00	0.00
82	RT	Reliability Assessment	PGAE	Humboldt	10/2/2023	15 - 60	No	INC	24	0:00	0:00	-26.38	13494.38	0.00	1191.60	0.00	0.00	0.00	0.00	0.00	0.00
83	RT	Reliability Assessment	PGAE	Humboldt	10/3/2023	15	No	INC	6	0:00	5:45	-7.11	13704.36	0.00	258.37	0.00	0.00	0.00	0.00	0.00	0.00
84	RT	Reliability Assessment	PGAE	Humboldt	10/5/2023	15	No	INC	1	23:30	0:00	-8.29	1390.91	0.00	432.95	0.00	0.00	0.00	0.00	0.00	0.00
85	RT	Reliability Assessment	PGAE	Humboldt	10/6/2023	15	No	INC	4	0:00	3:30	-0.60	3884.52	0.00	34.59	0.00	0.00	0.00	0.00	0.00	0.00
86	RT	Reliability Assessment	PGAE	Humboldt	10/13/2023	15 - 30	No	DEC	7	16:00	23:00	2.47	-13919.08	0.00	-125.81	0.00	0.00	0.00	0.00	0.00	0.00
87	RT	Reliability Assessment	PGAE	Humboldt	10/13/2023	15 - 30	No	INC	15	9:15	0:00	-0.15	17305.76	0.00	8.25	0.00	0.00	0.00	0.00	0.00	0.00
88	RT	Reliability Assessment	PGAE	Humboldt	10/14/2023	30	No	DEC	7	17:00	0:00	0.90	-5901.87	0.00	-42.13	0.00	0.00	0.00	0.00	0.00	0.00

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Chart 2: Table of Exceptional Dispatches for Period 01/October/2023 – 31/October/2023

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitment	INC_DEC	Hour s	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
89	RT	Reliability Assessment	PGAE	Humboldt	10/14/2023	30	No	INC	17	0:00	17:00	-5.50	29732.32	0.00	-29.33	0.00	0.00	0.00	0.00	0.00	0.00
90	RT	Reliability Assessment	PGAE	Humboldt	10/15/2023	15 - 30	No	DEC	8	16:00	0:00	-1.13	-9654.55	0.00	103.83	0.00	0.00	0.00	0.00	0.00	0.00
91	RT	Reliability Assessment	PGAE	Humboldt	10/15/2023	30	No	INC	16	0:00	16:00	0.00	26234.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
92	RT	Reliability Assessment	PGAE	Humboldt	10/16/2023	15	No	DEC	4	0:00	3:30	0.00	3060.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
93	RT	Reliability Assessment	PGAE	Humboldt	10/18/2023	30	No	DEC	15	9:35	0:00	-0.46	-15853.12	0.00	15.08	0.00	0.00	0.00	0.00	0.00	0.00
94	RT	Reliability Assessment	PGAE	Humboldt	10/19/2023	30	No	DEC	8	12:00	19:15	-1.69	-17750.33	0.00	202.55	0.00	0.00	0.00	0.00	0.00	0.00
95	RT	Reliability Assessment	PGAE	Humboldt	10/19/2023	30	No	INC	12	0:00	12:00	0.68	27490.78	0.00	-39.84	0.00	0.00	0.00	0.00	0.00	0.00
96	RT	Reliability Assessment	PGAE	Humboldt	10/23/2023	45	No	INC	4	20:00	0:00	0.00	13127.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97	RT	Reliability Assessment	PGAE	Humboldt	10/24/2023	30 - 45	No	INC	24	0:00	0:00	-7.46	56799.99	0.00	400.47	0.00	0.00	0.00	0.00	0.00	0.00
98	RT	Reliability Assessment	PGAE	Humboldt	10/25/2023	30	No	INC	8	0:00	7:20	0.00	17181.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
99	RT	Reliability Assessment	PGAE	NCNB	10/7/2023	62	No	DEC	5	17:50	22:00	-10.97	0.00	0.00	-794.47	-11.14	0.00	-780.03	0.00	0.00	0.00
100	RT	Reliability Assessment	PGAE	Sierra	10/19/2023	20	No	DEC	2	19:35	21:00	-33.17	0.00	0.00	2977.99	0.00	0.00	0.00	0.00	0.00	0.00
101	RT	Reliability Assessment	PGAE	Sierra	10/19/2023	20	No	INC	1	21:00	22:00	7.91	0.00	0.00	-885.67	0.00	0.00	0.00	0.00	0.00	0.00
102	RT	Reliability Assessment	PGAE	NA	10/22/2023	40	No	INC	5	17:55	22:00	2.15	0.00	0.00	-124.72	0.00	0.00	0.00	0.00	0.00	0.00
103	RT	Reliability Assessment	PGAE	NA	10/29/2023	0 - 350	No	DEC	2	19:20	21:00	-241.52	0.00	0.00	15181.72	-177.32	0.00	10611.66	0.00	0.00	0.00
104	RT	Reliability Assessment	SCE	Big Creek-Ventura	10/16/2023	575 - 600	No	DEC	8	15:50	23:00	-158.26	0.00	0.00	5907.57	-126.69	0.00	3162.64	0.00	0.00	0.00
105	RT	Reliability Assessment	SCE	Big Creek-Ventura	10/17/2023	575 - 650	No	DEC	7	16:50	23:00	-59.73	0.00	0.00	-1534.06	-98.79	0.00	2793.84	0.00	0.00	0.00
106	RT	Reliability Assessment	SCE	Big Creek-Ventura	10/18/2023	650 - 670	No	DEC	15	9:20	0:00	-107.75	0.00	0.00	3473.10	-122.98	0.00	3901.82	0.00	0.00	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitment	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
107	RT	Reliability Assessment	SCE	Big Creek-Ventura	10/19/2023	650	No	DEC	2	0:00	2:00	0.69	0.00	0.00	-42.13	0.00	0.00	0.00	0.00	0.00	0.00
108	RT	Reliability Assessment	SCE	Big Creek-Ventura	10/22/2023	58	No	DEC	2	13:25	15:00	-1.53	0.00	0.00	-216.41	0.00	0.00	0.00	0.00	0.00	0.00
109	RT	Reliability Assessment	SCE	Big Creek-Ventura	10/22/2023	58	No	INC	3	15:00	18:00	-5.12	0.00	0.00	195.02	0.00	0.00	0.00	0.00	0.00	0.00
110	RT	Reliability Assessment	SCE	NA	10/1/2023	35	No	DEC	6	16:45	22:00	-21.06	0.00	0.00	35.42	-21.04	0.00	34.71	0.00	0.00	0.00
111	RT	Reliability Assessment	SDGE	San Diego-IV	10/22/2023	-48	No	DEC	1	10:20	11:00	2.62	0.00	0.00	-0.97	2.62	-0.97	0.00	0.00	0.00	0.00
112	RT	Reliability Assessment	SDGE	San Diego-IV	10/22/2023	-28	No	INC	4	11:00	15:00	14.81	0.00	0.00	-82.20	18.37	-6.80	0.00	0.00	0.00	0.00
113	RT	SOC Charge	PGAE	Bay Area	10/14/2023	-101	No	DEC	7	1:00	8:00	-324.40	0.00	0.00	4375.56	-273.04	0.00	3191.83	0.00	0.00	0.00
114	RT	SOC Charge	PGAE	Bay Area	10/14/2023	-21	No	INC	3	5:40	8:00	-11.71	0.00	0.00	304.71	0.00	0.00	0.00	0.00	0.00	0.00
115	RT	SOC Charge	PGAE	Fresno	10/14/2023	-43	No	DEC	7	1:20	8:00	-28.08	0.00	0.00	-5837.53	-36.25	0.00	-5436.90	0.00	0.00	0.00
116	RT	SOC Charge	PGAE	Fresno	10/14/2023	0	No	INC	1	7:25	8:00	4.58	0.00	0.00	-80.86	0.00	0.00	0.00	0.00	0.00	0.00
117	RT	SOC Charge	PGAE	NA	10/14/2023	-30	No	DEC	6	2:35	8:00	-3.08	0.00	0.00	-1121.87	-20.00	0.00	7.60	0.00	0.00	0.00
118	RT	SOC Charge	SCE	Big Creek-Ventura	10/14/2023	-62	No	DEC	7	1:35	8:00	-27.63	0.00	0.00	-8057.85	-63.31	0.00	-6124.65	0.00	0.00	0.00
119	RT	SOC Charge	SCE	LA Basin	10/14/2023	-53	No	DEC	6	2:10	8:00	-53.97	0.00	0.00	-725.40	-51.47	0.00	-438.09	0.00	0.00	0.00
120	RT	SOC Charge	SCE	NA	10/14/2023	-111	No	DEC	7	1:15	8:00	-52.07	0.00	0.00	-29291.84	-283.11	0.00	16649.71	0.00	0.00	0.00
121	RT	SOC Charge	SCE	NA	10/14/2023	-42	No	INC	7	1:15	8:00	-2.23	0.00	0.00	-5312.57	-36.56	0.00	-3923.37	0.00	0.00	0.00
122	RT	SOC Charge	SDGE	San Diego-IV	10/14/2023	-67	No	DEC	7	1:00	8:00	-136.39	0.00	0.00	1120.25	-124.72	0.00	1420.70	0.00	0.00	0.00
123	RT	SOC Hold	PGAE	Bay Area	10/14/2023	-44	No	DEC	4	3:30	7:00	-38.47	0.00	0.00	2124.10	0.00	0.00	0.00	0.00	0.00	0.00
124	RT	SOC Hold	PGAE	Bay Area	10/14/2023	28	No	INC	3	5:25	8:00	7.49	0.00	0.00	-332.22	0.00	0.00	0.00	0.00	0.00	0.00

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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
125	RT	SOC Hold	PGAE	Stockton	10/14/2023	-30	No	DEC	4	1:40	5:15	-20.51	0.00	0.00	1025.89	-17.19	0.00	859.38	0.00	0.00	0.00
126	RT	SOC Hold	PGAE	Stockton	10/14/2023	17	No	INC	3	5:15	8:00	6.54	0.00	0.00	-249.15	0.00	0.00	0.00	0.00	0.00	0.00
127	RT	SOC Hold	SCE	Big Creek-Ventura	10/14/2023	-38	No	DEC	4	2:15	5:20	-31.52	0.00	0.00	1215.17	-16.83	0.00	6.56	0.00	0.00	0.00
128	RT	SOC Hold	SCE	Big Creek-Ventura	10/14/2023	-73	No	INC	5	3:00	8:00	-110.52	0.00	0.00	6255.16	0.00	0.00	0.00	0.00	0.00	0.00
129	RT	SOC Hold	SCE	LA Basin	10/14/2023	17	No	INC	4	4:30	8:00	-40.88	0.00	0.00	2252.95	0.00	0.00	0.00	0.00	0.00	0.00
130	RT	SOC Hold	SCE	NA	10/14/2023	38 - 63	No	INC	5	3:25	8:00	72.06	0.00	0.00	-4341.88	0.00	0.00	0.00	0.00	0.00	0.00
131	RT	Software Limitation	PGAE	Kern	10/8/2023	0	No	INC	3	4:40	7:40	-11.25	452.60	0.00	0.00	-11.25	0.00	0.00	0.00	0.00	0.00
132	RT	Software Limitation	PGAE	NA	10/4/2023	142	No	INC	3	11:40	14:00	78.77	0.00	0.00	-1764.78	0.00	0.00	0.00	0.00	0.00	0.00
133	RT	Software Limitation	SCE	Big Creek-Ventura	10/20/2023	0	No	INC	1	4:45	5:45	-33.27	3162.74	0.00	280.92	-33.27	0.00	280.92	0.00	0.00	0.00
134	RT	Software Limitation	SCE	LA Basin	10/9/2023	48.29 - 96.65	No	INC	1	2:10	3:00	78.50	7502.26	0.00	-4186.44	13.24	1003.74	0.00	0.00	0.00	0.00
135	RT	Software Limitation	SCE	LA Basin	10/17/2023	0	No	INC	1	0:00	0:55	-15.04	1681.08	0.00	0.00	-15.04	0.00	0.00	0.00	0.00	0.00
136	RT	Software Limitation	SCE	LA Basin	10/21/2023	0	No	INC	1	23:45	0:00	-5.01	592.69	23.49	0.00	-5.01	0.00	0.00	0.00	0.00	0.00
137	RT	Software Limitation	SCE	LA Basin	10/22/2023	0	No	INC	1	0:00	0:45	-5.01	0.00	0.00	0.00	-5.01	0.00	0.00	0.00	0.00	0.00
138	RT	Software Limitation	SCE	NA	10/5/2023	180	No	DEC	2	20:15	21:30	-132.50	-9350.53	0.00	9587.81	0.00	0.00	0.00	0.00	0.00	0.00
139	RT	Unit Testing	PGAE	Bay Area	10/13/2023	280	No	INC	2	18:00	20:00	179.47	0.00	0.00	-12517.48	179.47	12517.48	0.00	0.00	0.00	0.00
140	RT	Unit Testing	SCE	LA Basin	10/2/2023	288 - 673	No	INC	2	15:00	17:00	-17.24	37073.46	0.00	-449.90	0.00	0.00	0.00	0.00	0.00	0.00
141	RT	Unit Testing	SCE	LA Basin	10/30/2023	-247.33	No	INC	1	10:15	10:55	37.22	0.00	0.00	-3531.10	38.03	3534.72	0.00	0.00	0.00	0.00
142	RT	Voltage Support	PGAE	Big Creek-Ventura	10/21/2023	62	No	INC	8	8:00	16:00	-28.83	49455.91	0.00	1045.86	0.00	0.00	0.00	0.00	0.00	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitment	INC_ DEC	Hour s	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC662 0
143	RT	Voltage Support	PGAE	Fresno	10/1/2023	-315	No	DEC	24	0:00	0:00	-189.27	-849.86	0.00	6741.62	-60.75	0.00	1993.95	0.00	-1348.87	0.00
144	RT	Voltage Support	PGAE	Fresno	10/1/2023	-315	No	INC	14	10:00	23:30	-36.67	0.00	0.00	1178.72	0.00	0.00	0.00	0.00	0.00	0.00
145	RT	Voltage Support	PGAE	Fresno	10/2/2023	-315	No	DEC	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
146	RT	Voltage Support	PGAE	Fresno	10/3/2023	-315	No	DEC	7	0:00	7:00	3.37	0.00	0.00	-193.22	0.00	0.00	0.00	0.00	0.00	0.00
147	RT	Voltage Support	PGAE	Fresno	10/3/2023	0	No	INC	1	21:40	22:40	-204.17	1644.89	0.00	12023.70	-204.17	0.00	12023.70	0.00	-5751.55	0.00
148	RT	Voltage Support	PGAE	Fresno	10/4/2023	-315	No	DEC	5	2:30	7:00	-154.14	0.00	0.00	7133.49	0.00	0.00	0.00	0.00	0.00	0.00
149	RT	Voltage Support	PGAE	Fresno	10/5/2023	-315	No	DEC	6	1:40	7:00	-180.38	0.00	0.00	10240.88	0.00	0.00	0.00	0.00	0.00	0.00
150	RT	Voltage Support	PGAE	Fresno	10/6/2023	-315	No	DEC	5	2:00	7:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
151	RT	Voltage Support	PGAE	Fresno	10/7/2023	-315	No	DEC	4	3:45	7:00	-72.52	0.00	0.00	4353.17	0.00	0.00	0.00	0.00	0.00	0.00
152	RT	Voltage Support	PGAE	Fresno	10/8/2023	-315	No	DEC	8	1:00	9:00	-219.94	0.00	0.00	13295.52	0.00	0.00	0.00	0.00	0.00	0.00
153	RT	Voltage Support	PGAE	Fresno	10/9/2023	-315	No	DEC	1	23:15	23:30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
154	RT	Voltage Support	PGAE	Fresno	10/9/2023	83	No	INC	2	22:55	0:00	32.54	6908.55	0.00	-1602.46	0.00	0.00	0.00	0.00	0.00	0.00
155	RT	Voltage Support	PGAE	Fresno	10/10/2023	83	Yes	INC	24	0:00	0:00	1.01	63438.09	0.00	-55.95	0.00	0.00	0.00	0.00	0.00	0.00
156	RT	Voltage Support	PGAE	Fresno	10/11/2023	-315	No	DEC	3	21:30	0:00	10.71	0.00	0.00	-590.60	0.00	0.00	0.00	0.00	0.00	0.00
157	RT	Voltage Support	PGAE	Fresno	10/11/2023	83	No	INC	7	0:00	7:00	20.75	59874.15	0.00	-847.13	0.00	0.00	0.00	0.00	0.00	0.00
158	RT	Voltage Support	PGAE	Fresno	10/12/2023	-315	No	DEC	24	0:00	0:00	4.32	0.00	0.00	-316.94	0.00	0.00	0.00	0.00	0.00	0.00
159	RT	Voltage Support	PGAE	Fresno	10/13/2023	-315	No	DEC	24	0:00	0:00	9.38	0.00	0.00	-722.12	0.00	0.00	0.00	0.00	0.00	0.00
160	RT	Voltage Support	PGAE	Fresno	10/14/2023	-315	No	DEC	24	0:00	0:00	-205.20	0.00	0.00	13196.76	0.00	0.00	0.00	0.00	0.00	0.00

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Chart 2: Table of Exceptional Dispatches for Period 01/October/2023 – 31/October/2023

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitment	INC_ DEC	Hour s	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC662 0
161	RT	Voltage Support	PGAE	Fresno	10/15/2023	-315	No	DEC	8	0:00	8:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
162	RT	Voltage Support	PGAE	Fresno	10/15/2023	-315	No	INC	1	8:00	9:00	-13.13	0.00	0.00	371.96	0.00	0.00	0.00	0.00	0.00	0.00
163	RT	Voltage Support	PGAE	Fresno	10/16/2023	-315	No	DEC	7	0:30	7:00	-148.24	0.00	0.00	8952.15	0.00	0.00	0.00	0.00	0.00	0.00
164	RT	Voltage Support	PGAE	Fresno	10/18/2023	-315	No	DEC	8	1:50	9:00	-201.81	0.00	0.00	12643.25	0.00	0.00	0.00	0.00	0.00	0.00
165	RT	Voltage Support	PGAE	Fresno	10/19/2023	-315	No	DEC	5	2:45	7:00	-152.70	0.00	0.00	10628.70	0.00	0.00	0.00	0.00	0.00	0.00
166	RT	Voltage Support	PGAE	Fresno	10/21/2023	-315	No	DEC	24	0:45	0:00	10.50	0.00	0.00	-594.94	0.00	0.00	0.00	0.00	0.00	0.00
167	RT	Voltage Support	PGAE	Fresno	10/21/2023	-315	No	INC	7	9:00	16:00	-26.25	0.00	0.00	738.94	0.00	0.00	0.00	0.00	0.00	0.00
168	RT	Voltage Support	PGAE	Fresno	10/22/2023	-315	No	DEC	9	0:00	9:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
169	RT	Voltage Support	PGAE	Fresno	10/28/2023	-315	No	DEC	8	16:40	0:00	-315.00	0.00	0.00	18001.60	0.00	0.00	0.00	0.00	0.00	0.00
170	RT	Voltage Support	PGAE	Fresno	10/29/2023	-315	No	DEC	18	0:00	17:30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
171	RT	Voltage Support	PGAE	Fresno	10/30/2023	-315	No	DEC	5	2:30	7:00	-152.71	0.00	0.00	11472.71	0.00	0.00	0.00	0.00	0.00	0.00
172	RT	Voltage Support	PGAE	Humboldt	10/3/2023	30	No	INC	2	22:30	0:00	12.73	2787.33	0.00	-574.64	0.00	0.00	0.00	0.00	0.00	0.00
173	RT	Voltage Support	PGAE	Humboldt	10/4/2023	30	No	DEC	11	13:00	0:00	-0.72	-3155.07	0.00	186.26	0.00	0.00	0.00	0.00	0.00	0.00
174	RT	Voltage Support	PGAE	Humboldt	10/4/2023	30	No	INC	13	0:00	13:00	1.97	5809.54	0.00	-97.63	0.00	0.00	0.00	0.00	0.00	0.00
175	RT	Voltage Support	PGAE	Humboldt	10/5/2023	30	No	INC	6	0:00	5:15	0.16	4172.72	0.00	-16.60	0.00	0.00	0.00	0.00	0.00	0.00
176	RT	Voltage Support	PGAE	Humboldt	10/6/2023	45	No	INC	1	23:30	0:00	7.10	0.00	0.00	-502.95	0.00	0.00	0.00	0.00	0.00	0.00
177	RT	Voltage Support	PGAE	Humboldt	10/7/2023	30	No	DEC	2	22:15	0:00	-16.36	-1456.41	0.00	1255.30	0.00	0.00	0.00	0.00	0.00	0.00
178	RT	Voltage Support	PGAE	Humboldt	10/7/2023	45	No	INC	3	0:00	3:00	17.47	5870.93	0.00	-1314.30	0.00	0.00	0.00	0.00	0.00	0.00

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Chart 2: Table of Exceptional Dispatches for Period 01/October/2023 – 31/October/2023

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	
179	RT	Voltage Support	PGAE	Humboldt	10/8/2023	30	No	INC	24	0:00	0:00	-6.35	10720.87	0.00	425.14	0.00	0.00	0.00	0.00	0.00	0.00	
180	RT	Voltage Support	PGAE	Humboldt	10/9/2023	15 - 30	No	INC	24	0:00	0:00	-2.77	23483.79	0.00	206.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00
181	RT	Voltage Support	PGAE	Humboldt	10/10/2023	15	No	DEC	3	6:00	9:00	4.07	0.00	0.00	-147.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00
182	RT	Voltage Support	PGAE	Humboldt	10/10/2023	15 - 30	No	INC	24	0:00	0:00	19.56	6659.76	0.00	-1145.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
183	RT	Voltage Support	PGAE	Humboldt	10/11/2023	30	No	INC	24	0:00	0:00	-0.21	50793.84	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
184	RT	Voltage Support	PGAE	Humboldt	10/12/2023	30	No	DEC	7	16:00	23:00	2.62	-1298.54	0.00	-47.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185	RT	Voltage Support	PGAE	Humboldt	10/12/2023	30 - 60	No	INC	24	0:00	0:00	-4.02	32916.18	0.00	-14.03	0.00	0.00	0.00	0.00	0.00	-69.39	0.00
186	RT	Voltage Support	PGAE	Humboldt	10/13/2023	15 - 30	No	INC	10	0:00	9:30	-0.07	31381.14	0.00	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
187	RT	Voltage Support	PGAE	Humboldt	10/16/2023	30	No	DEC	14	8:45	22:00	0.36	-400.57	0.00	-16.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
188	RT	Voltage Support	PGAE	Humboldt	10/16/2023	30	No	INC	2	22:00	0:00	0.61	1748.96	0.00	-34.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
189	RT	Voltage Support	PGAE	Humboldt	10/17/2023	30	No	DEC	9	14:00	23:00	-4.30	-8588.80	0.00	349.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190	RT	Voltage Support	PGAE	Humboldt	10/17/2023	15 - 30	No	INC	24	0:00	0:00	4.80	28686.08	0.00	-614.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
191	RT	Voltage Support	PGAE	Humboldt	10/18/2023	30	No	DEC	4	6:00	10:00	0.23	-5581.92	0.00	-17.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
192	RT	Voltage Support	PGAE	Humboldt	10/18/2023	30	No	INC	6	0:00	6:00	0.00	14895.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193	RT	Voltage Support	PGAE	Humboldt	10/29/2023	15 - 30	No	DEC	24	0:00	0:00	5.73	-22696.06	0.00	-441.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00
194	RT	Voltage Support	PGAE	Humboldt	10/29/2023	15 - 45	No	INC	17	0:15	17:00	4.09	38217.69	0.00	-324.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195	RT	Voltage Support	PGAE	Humboldt	10/30/2023	30	No	INC	22	0:00	22:00	1.33	106766.88	0.00	-188.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
196	RT	Voltage Support	PGAE	Kern	10/1/2023	32	No	INC	10	2:30	12:00	2.21	16919.31	5843.86	-70.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Chart 2: Table of Exceptional Dispatches for Period 01/October/2023 – 31/October/2023

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
197	RT	Voltage Support	PGAE	Sierra	10/5/2023	20	No	DEC	2	18:00	20:00	-9.17	0.00	0.00	611.45	0.00	0.00	0.00	0.00	0.00	0.00
198	RT	Voltage Support	PGAE	Sierra	10/5/2023	20	No	INC	15	9:25	0:00	-0.19	23890.48	0.00	-508.28	0.00	0.00	0.00	0.00	0.00	0.00
199	RT	Voltage Support	PGAE	Sierra	10/27/2023	20	Yes	INC	21	3:45	0:00	31.34	50670.15	0.00	-2068.86	0.00	0.00	0.00	0.00	0.00	0.00
200	RT	Voltage Support	PGAE	Sierra	10/28/2023	20	Yes	INC	24	0:00	0:00	37.69	56789.13	0.00	-3593.55	0.00	0.00	0.00	0.00	0.00	0.00
201	RT	Voltage Support	PGAE	Sierra	10/29/2023	20	No	INC	24	0:00	0:00	15.84	40024.27	0.00	-1058.94	0.00	0.00	0.00	0.00	0.00	0.00
202	RT	Voltage Support	PGAE	Sierra	10/30/2023	20	Yes	INC	7	0:00	7:00	5.39	25795.70	0.00	-343.94	0.00	0.00	0.00	0.00	0.00	0.00
203	RT	Voltage Support	PGAE	NA	10/21/2023	50 - 95	No	INC	16	1:00	17:00	-14.52	169337.68	0.00	684.74	0.00	0.00	0.00	0.00	0.00	0.00
204	RT	Voltage Support	PGAE	NA	10/22/2023	50 - 95	No	INC	16	1:00	17:00	4.94	184504.66	15427.00	-452.03	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 (PGAE) 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 PGAE 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 PGAE 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 8,928 five-minute intervals in October, this resource was issued exceptional dispatch instructions in 4 five-minute intervals. This resource was eligible to set the LMP in 4 intervals. Out of the 4 intervals, resource calculated LMP was larger than the market LMP in 4 intervals. Out of the 45 intervals, resource calculated LMP was less than the market LMP in 0 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 increase of \$35.35/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 8,928 five-minute intervals in September, this resource was issued exceptional dispatch instructions in 1,244 five-minute intervals. This resource was eligible to set the LMP in 1,244 intervals. Out of the 1,244 intervals, resource calculated LMP was larger than the market LMP in 92 intervals. In the 8 92intervals, the average increase in five minute LMP was \$6.90/MWh. Out of the 1,244 intervals, resource calculated LMP was less than the market LMP in 1150 intervals. In the 1,150 intervals, the average decrease in five minute LMP was \$35.43/MWh.

Table 8: Price Impact Analysis Information for Pricing Node A in PG&E LAP

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1	10/9/2023	11	2	47.17	Yes	80.87	33.70
2	10/9/2023	11	3	47.17	Yes	80.87	33.70
3	10/9/2023	11	7	43.87	Yes	80.87	37.00
4	10/9/2023	11	8	43.87	Yes	80.87	37.00

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	10/16/2023	16	11	49.77	Yes	24.93	-24.84
2	10/16/2023	16	12	53.15	Yes	24.93	-28.22
3	10/16/2023	17	1	45.68	Yes	24.96	-20.72
4	10/16/2023	17	2	46.49	Yes	24.96	-21.53
5	10/16/2023	17	3	48.33	Yes	24.96	-23.37
6	10/16/2023	17	4	57.23	Yes	24.96	-32.27
7	10/16/2023	17	5	65.86	Yes	24.96	-40.90
8	10/16/2023	17	6	72.21	Yes	24.96	-47.25
9	10/16/2023	17	7	82.16	Yes	24.96	-57.20
10	10/16/2023	17	8	90.64	Yes	24.96	-65.68
11	10/16/2023	17	9	103.54	Yes	24.96	-78.58
12	10/16/2023	17	10	113.68	Yes	24.96	-88.72
13	10/16/2023	17	11	123.54	Yes	24.96	-98.58
14	10/16/2023	17	12	124.69	Yes	24.96	-99.73
15	10/16/2023	18	1	80.18	Yes	25.07	-55.11
16	10/16/2023	18	2	81.33	Yes	25.07	-56.26
17	10/16/2023	18	3	82.74	Yes	25.07	-57.67
18	10/16/2023	18	4	87.82	Yes	25.07	-62.75
19	10/16/2023	18	5	97.76	Yes	25.07	-72.69
20	10/16/2023	18	6	102.75	Yes	25.07	-77.68
21	10/16/2023	18	7	116.04	Yes	25.07	-90.97
22	10/16/2023	18	8	118.35	Yes	25.07	-93.28
23	10/16/2023	18	9	125.46	Yes	25.07	-100.39
24	10/16/2023	18	10	127.74	Yes	25.07	-102.67
25	10/16/2023	18	11	130.43	Yes	25.07	-105.36
26	10/16/2023	18	12	122.24	Yes	25.07	-97.17
27	10/16/2023	19	1	114.80	Yes	25	-89.80
28	10/16/2023	19	2	102.20	Yes	25	-77.20
29	10/16/2023	19	3	96.65	Yes	25	-71.65
30	10/16/2023	19	4	91.30	Yes	25	-66.30
31	10/16/2023	19	5	89.41	Yes	25	-64.41
32	10/16/2023	19	6	87.37	Yes	25	-62.37
33	10/16/2023	19	7	85.19	Yes	25	-60.19
34	10/16/2023	19	8	86.69	Yes	25	-61.69
35	10/16/2023	19	9	85.52	Yes	25	-60.52
36	10/16/2023	19	10	83.38	Yes	25	-58.38

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
37	10/16/2023	19	11	82.01	Yes	25	-57.01
38	10/16/2023	19	12	81.06	Yes	25	-56.06
39	10/16/2023	20	1	76.29	Yes	25.12	-51.17
40	10/16/2023	20	2	75.05	Yes	25.12	-49.93
41	10/16/2023	20	3	71.21	Yes	25.12	-46.09
42	10/16/2023	20	4	70.64	Yes	25.12	-45.52
43	10/16/2023	20	5	68.92	Yes	25.12	-43.80
44	10/16/2023	20	6	65.49	Yes	25.12	-40.37
45	10/16/2023	20	7	66.25	Yes	25.12	-41.13
46	10/16/2023	20	8	65.12	Yes	25.12	-40.00
47	10/16/2023	20	9	62.11	Yes	25.12	-36.99
48	10/16/2023	20	10	63.57	Yes	25.12	-38.45
49	10/16/2023	20	11	62.22	Yes	25.12	-37.10
50	10/16/2023	20	12	59.97	Yes	25.12	-34.85
51	10/16/2023	21	1	72.02	Yes	25.04	-46.98
52	10/16/2023	21	2	74.37	Yes	25.04	-49.33
53	10/16/2023	21	3	71.65	Yes	25.04	-46.61
54	10/16/2023	21	4	74.06	Yes	25.04	-49.02
55	10/16/2023	21	5	71.95	Yes	25.04	-46.91
56	10/16/2023	21	6	69.45	Yes	25.04	-44.41
57	10/16/2023	21	7	68.72	Yes	25.04	-43.68
58	10/16/2023	21	8	70.16	Yes	25.04	-45.12
59	10/16/2023	21	9	69.14	Yes	25.04	-44.10
60	10/16/2023	21	10	68.49	Yes	25.04	-43.45
61	10/16/2023	21	11	66.89	Yes	25.04	-41.85
62	10/16/2023	21	12	66.89	Yes	25.04	-41.85
63	10/16/2023	22	1	72.54	Yes	25.1	-47.44
64	10/16/2023	22	2	74.08	Yes	25.1	-48.98
65	10/16/2023	22	3	72.58	Yes	25.1	-47.48
66	10/16/2023	22	4	73.42	Yes	25.1	-48.32
67	10/16/2023	22	5	72.51	Yes	25.1	-47.41
68	10/16/2023	22	6	68.12	Yes	25.1	-43.02
69	10/16/2023	22	7	70.33	Yes	25.1	-45.23
70	10/16/2023	22	8	71.79	Yes	25.1	-46.69
71	10/16/2023	22	9	69.23	Yes	25.1	-44.13
72	10/16/2023	22	10	67.93	Yes	25.1	-42.83
73	10/16/2023	22	11	64.74	Yes	25.1	-39.64
74	10/16/2023	22	12	63.26	Yes	25.1	-38.16

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
75	10/16/2023	23	1	75.73	Yes	24.96	-50.77
76	10/16/2023	23	2	72.04	Yes	24.96	-47.08
77	10/16/2023	23	3	66.90	Yes	24.96	-41.94
78	10/16/2023	23	4	65.09	Yes	24.96	-40.13
79	10/16/2023	23	5	65.09	Yes	24.96	-40.13
80	10/16/2023	23	6	63.92	Yes	24.96	-38.96
81	10/16/2023	23	7	63.92	Yes	24.96	-38.96
82	10/16/2023	23	8	61.30	Yes	24.96	-36.34
83	10/16/2023	23	9	58.54	Yes	24.96	-33.58
84	10/16/2023	23	10	58.15	Yes	24.96	-33.19
85	10/16/2023	23	11	55.32	Yes	24.96	-30.36
86	10/16/2023	23	12	52.79	Yes	24.96	-27.83
87	10/17/2023	18	1	61.49	Yes	28.28	-33.21
88	10/17/2023	18	2	70.00	Yes	28.28	-41.72
89	10/17/2023	18	3	75.80	Yes	28.28	-47.52
90	10/17/2023	18	4	80.13	Yes	28.28	-51.85
91	10/17/2023	18	5	87.06	Yes	28.28	-58.78
92	10/17/2023	18	6	96.78	Yes	28.28	-68.50
93	10/17/2023	18	7	96.78	Yes	28.28	-68.50
94	10/17/2023	18	8	105.00	Yes	28.28	-76.72
95	10/17/2023	18	9	112.34	Yes	28.28	-84.06
96	10/17/2023	18	10	120.50	Yes	28.28	-92.22
97	10/17/2023	18	11	126.98	Yes	28.28	-98.70
98	10/17/2023	18	12	115.00	Yes	28.28	-86.72
99	10/17/2023	19	1	100.17	Yes	28.36	-71.81
100	10/17/2023	19	2	100.17	Yes	28.36	-71.81
101	10/17/2023	19	3	98.52	Yes	28.36	-70.16
102	10/17/2023	19	4	95.59	Yes	28.36	-67.23
103	10/17/2023	19	5	95.59	Yes	28.36	-67.23
104	10/17/2023	19	6	95.59	Yes	28.36	-67.23
105	10/17/2023	19	7	96.07	Yes	28.36	-67.71
106	10/17/2023	19	8	95.45	Yes	28.36	-67.09
107	10/17/2023	19	9	91.92	Yes	28.36	-63.56
108	10/17/2023	19	10	91.69	Yes	28.36	-63.33
109	10/17/2023	19	11	91.61	Yes	28.36	-63.25
110	10/17/2023	19	12	89.84	Yes	28.36	-61.48
111	10/17/2023	20	1	90.00	Yes	28.34	-61.66
112	10/17/2023	20	2	89.84	Yes	28.34	-61.50

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
113	10/17/2023	20	3	89.87	Yes	28.34	-61.53
114	10/17/2023	20	4	87.90	Yes	28.34	-59.56
115	10/17/2023	20	5	89.84	Yes	28.34	-61.50
116	10/17/2023	20	6	88.96	Yes	28.34	-60.62
117	10/17/2023	20	7	86.17	Yes	28.34	-57.83
118	10/17/2023	20	8	85.30	Yes	28.34	-56.96
119	10/17/2023	20	9	85.00	Yes	28.34	-56.66
120	10/17/2023	20	10	86.17	Yes	28.34	-57.83
121	10/17/2023	20	11	86.00	Yes	28.34	-57.66
122	10/17/2023	20	12	84.68	Yes	28.34	-56.34
123	10/17/2023	21	1	90.52	Yes	25.32	-65.20
124	10/17/2023	21	2	89.84	Yes	25.32	-64.52
125	10/17/2023	21	3	88.09	Yes	25.32	-62.77
126	10/17/2023	21	4	89.84	Yes	25.32	-64.52
127	10/17/2023	21	5	89.84	Yes	25.32	-64.52
128	10/17/2023	21	6	89.84	Yes	25.32	-64.52
129	10/17/2023	21	7	89.84	Yes	25.32	-64.52
130	10/17/2023	21	8	89.99	Yes	25.32	-64.67
131	10/17/2023	21	9	90.52	Yes	25.32	-65.20
132	10/17/2023	21	10	90.34	Yes	25.32	-65.02
133	10/17/2023	21	11	89.84	Yes	25.32	-64.52
134	10/17/2023	21	12	89.00	Yes	25.32	-63.68
135	10/17/2023	22	1	105.68	Yes	28.32	-77.36
136	10/17/2023	22	2	100.03	Yes	28.32	-71.71
137	10/17/2023	22	3	96.16	Yes	28.32	-67.84
138	10/17/2023	22	4	97.79	Yes	28.32	-69.47
139	10/17/2023	22	5	99.67	Yes	28.32	-71.35
140	10/17/2023	22	6	96.20	Yes	28.32	-67.88
141	10/17/2023	22	7	94.36	Yes	28.32	-66.04
142	10/17/2023	22	8	94.36	Yes	28.32	-66.04
143	10/17/2023	22	9	94.36	Yes	28.32	-66.04
144	10/17/2023	22	10	89.93	Yes	28.32	-61.61
145	10/17/2023	22	11	91.00	Yes	28.32	-62.68
146	10/17/2023	22	12	90.52	Yes	28.32	-62.20
147	10/17/2023	23	1	100.03	Yes	28.3	-71.73
148	10/17/2023	23	2	98.07	Yes	28.3	-69.77
149	10/17/2023	23	3	104.78	Yes	28.3	-76.48
150	10/17/2023	23	4	92.04	Yes	28.3	-63.74

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
151	10/17/2023	23	5	89.84	Yes	28.3	-61.54
152	10/17/2023	23	6	88.25	Yes	28.3	-59.95
153	10/17/2023	23	7	86.25	Yes	28.3	-57.95
154	10/17/2023	23	8	85.73	Yes	28.3	-57.43
155	10/17/2023	23	9	82.70	Yes	28.3	-54.40
156	10/17/2023	23	10	77.04	Yes	28.3	-48.74
157	10/17/2023	23	11	73.87	Yes	28.3	-45.57
158	10/17/2023	23	12	66.18	Yes	28.3	-37.88
159	10/17/2023	24	7	75.54	Yes	28.32	-47.22
160	10/17/2023	24	8	74.97	Yes	28.32	-46.65
161	10/17/2023	24	9	68.03	Yes	28.32	-39.71
162	10/17/2023	24	10	65.59	Yes	28.32	-37.27
163	10/17/2023	24	11	64.53	Yes	28.32	-36.21
164	10/17/2023	24	12	63.93	Yes	28.32	-35.61
165	10/18/2023	1	1	71.22	Yes	29.33	-41.89
166	10/18/2023	1	2	71.22	Yes	29.33	-41.89
167	10/18/2023	1	3	73.57	Yes	29.33	-44.24
168	10/18/2023	1	4	76.27	Yes	29.33	-46.94
169	10/18/2023	1	5	75.00	Yes	29.33	-45.67
170	10/18/2023	1	6	70.92	Yes	29.33	-41.59
171	10/18/2023	1	7	70.92	Yes	29.33	-41.59
172	10/18/2023	1	8	70.92	Yes	29.33	-41.59
173	10/18/2023	1	9	68.31	Yes	29.33	-38.98
174	10/18/2023	1	10	65.95	Yes	29.33	-36.62
175	10/18/2023	1	11	64.00	Yes	29.33	-34.67
176	10/18/2023	1	12	63.97	Yes	29.33	-34.64
177	10/18/2023	2	1	63.42	Yes	29.36	-34.06
178	10/18/2023	2	2	60.52	Yes	29.36	-31.16
179	10/18/2023	2	3	59.33	Yes	29.36	-29.97
180	10/18/2023	2	4	62.21	Yes	29.36	-32.85
181	10/18/2023	2	5	60.75	Yes	29.36	-31.39
182	10/18/2023	2	6	60.75	Yes	29.36	-31.39
183	10/18/2023	2	7	60.13	Yes	29.36	-30.77
184	10/18/2023	2	8	60.13	Yes	29.36	-30.77
185	10/18/2023	2	9	59.56	Yes	29.36	-30.20
186	10/18/2023	2	10	59.11	Yes	29.36	-29.75
187	10/18/2023	2	11	60.63	Yes	29.36	-31.27
188	10/18/2023	2	12	59.19	Yes	29.36	-29.83

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
189	10/18/2023	3	1	65.00	Yes	29.42	-35.58
190	10/18/2023	3	2	65.00	Yes	29.42	-35.58
191	10/18/2023	3	3	63.43	Yes	29.42	-34.01
192	10/18/2023	5	4	64.19	Yes	29.36	-34.83
193	10/18/2023	5	5	65.18	Yes	29.36	-35.82
194	10/18/2023	5	6	64.40	Yes	29.36	-35.04
195	10/18/2023	5	7	67.33	Yes	29.36	-37.97
196	10/18/2023	5	8	67.99	Yes	29.36	-38.63
197	10/18/2023	5	9	67.93	Yes	29.36	-38.57
198	10/18/2023	5	10	68.68	Yes	29.36	-39.32
199	10/18/2023	5	11	68.68	Yes	29.36	-39.32
200	10/18/2023	5	12	69.98	Yes	29.36	-40.62
201	10/18/2023	10	5	36.31	Yes	32.35	-3.96
202	10/18/2023	10	6	34.23	Yes	32.35	-1.88
203	10/18/2023	10	7	34.95	Yes	32.35	-2.60
204	10/18/2023	10	8	34.95	Yes	32.35	-2.60
205	10/18/2023	10	9	34.78	Yes	32.35	-2.43
206	10/18/2023	10	10	32.88	Yes	32.35	-0.53
207	10/18/2023	10	11	32.39	Yes	32.35	-0.04
208	10/18/2023	10	12	31.36	Yes	32.35	0.99
209	10/18/2023	11	1	36.27	Yes	29.39	-6.88
210	10/18/2023	11	2	34.84	Yes	29.39	-5.45
211	10/18/2023	11	3	35.36	Yes	29.39	-5.97
212	10/18/2023	11	4	35.62	Yes	29.39	-6.23
213	10/18/2023	11	5	38.24	Yes	29.39	-8.85
214	10/18/2023	11	6	39.22	Yes	29.39	-9.83
215	10/18/2023	11	7	40.52	Yes	29.39	-11.13
216	10/18/2023	11	8	40.13	Yes	29.39	-10.74
217	10/18/2023	11	9	41.20	Yes	29.39	-11.81
218	10/18/2023	11	10	41.38	Yes	29.39	-11.99
219	10/18/2023	11	11	41.14	Yes	29.39	-11.75
220	10/18/2023	11	12	41.38	Yes	29.39	-11.99
221	10/18/2023	12	1	36.98	Yes	29.36	-7.62
222	10/18/2023	12	2	36.95	Yes	29.36	-7.59
223	10/18/2023	12	3	36.08	Yes	29.36	-6.72
224	10/18/2023	12	4	35.14	Yes	29.36	-5.78
225	10/18/2023	12	5	34.74	Yes	29.36	-5.38
226	10/18/2023	12	6	36.10	Yes	29.36	-6.74

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
227	10/18/2023	12	7	38.26	Yes	29.36	-8.90
228	10/18/2023	12	8	39.99	Yes	29.36	-10.63
229	10/18/2023	12	9	40.39	Yes	29.36	-11.03
230	10/18/2023	12	10	40.39	Yes	29.36	-11.03
231	10/18/2023	12	11	40.91	Yes	29.36	-11.55
232	10/18/2023	12	12	42.69	Yes	29.36	-13.33
233	10/18/2023	13	1	42.48	Yes	32.32	-10.16
234	10/18/2023	13	2	40.87	Yes	32.32	-8.55
235	10/18/2023	13	3	40.67	Yes	32.32	-8.35
236	10/18/2023	13	4	41.59	Yes	32.32	-9.27
237	10/18/2023	13	5	41.44	Yes	32.32	-9.12
238	10/18/2023	13	6	43.45	Yes	32.32	-11.13
239	10/18/2023	13	7	47.93	Yes	32.32	-15.61
240	10/18/2023	13	8	49.07	Yes	32.32	-16.75
241	10/18/2023	13	9	51.06	Yes	32.32	-18.74
242	10/18/2023	13	10	49.10	Yes	32.32	-16.78
243	10/18/2023	13	11	49.98	Yes	32.32	-17.66
244	10/18/2023	13	12	49.55	Yes	32.32	-17.23
245	10/18/2023	14	1	44.74	Yes	32.35	-12.39
246	10/18/2023	14	2	44.53	Yes	32.35	-12.18
247	10/18/2023	14	3	47.30	Yes	32.35	-14.95
248	10/18/2023	14	4	49.45	Yes	32.35	-17.10
249	10/18/2023	14	5	54.00	Yes	32.35	-21.65
250	10/18/2023	14	6	54.00	Yes	32.35	-21.65
251	10/18/2023	14	7	55.62	Yes	32.35	-23.27
252	10/18/2023	14	8	55.47	Yes	32.35	-23.12
253	10/18/2023	14	9	58.35	Yes	32.35	-26.00
254	10/18/2023	14	10	56.95	Yes	32.35	-24.60
255	10/18/2023	14	11	54.08	Yes	32.35	-21.73
256	10/18/2023	14	12	58.00	Yes	32.35	-25.65
257	10/18/2023	15	1	52.34	Yes	32.29	-20.05
258	10/18/2023	15	2	51.19	Yes	32.29	-18.90
259	10/18/2023	15	3	52.15	Yes	32.29	-19.86
260	10/18/2023	15	4	55.29	Yes	32.29	-23.00
261	10/18/2023	15	5	51.27	Yes	32.29	-18.98
262	10/18/2023	15	6	55.80	Yes	32.29	-23.51
263	10/18/2023	15	7	66.85	Yes	32.29	-34.56
264	10/18/2023	15	8	66.91	Yes	32.29	-34.62

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
265	10/18/2023	15	9	67.83	Yes	32.29	-35.54
266	10/18/2023	15	10	65.57	Yes	32.29	-33.28
267	10/18/2023	15	11	65.00	Yes	32.29	-32.71
268	10/18/2023	15	12	63.42	Yes	32.29	-31.13
269	10/18/2023	16	1	53.93	Yes	32.35	-21.58
270	10/18/2023	16	2	52.06	Yes	32.35	-19.71
271	10/18/2023	16	3	57.52	Yes	32.35	-25.17
272	10/18/2023	16	4	53.04	Yes	32.35	-20.69
273	10/18/2023	16	5	53.73	Yes	32.35	-21.38
274	10/18/2023	16	6	51.43	Yes	32.35	-19.08
275	10/18/2023	16	7	55.75	Yes	32.35	-23.40
276	10/18/2023	16	8	55.75	Yes	32.35	-23.40
277	10/18/2023	16	9	61.87	Yes	32.35	-29.52
278	10/18/2023	16	10	60.81	Yes	32.35	-28.46
279	10/18/2023	16	11	58.82	Yes	32.35	-26.47
280	10/18/2023	16	12	61.00	Yes	32.35	-28.65
281	10/18/2023	17	1	43.98	Yes	32.39	-11.59
282	10/18/2023	17	2	47.00	Yes	32.39	-14.61
283	10/18/2023	17	3	50.93	Yes	32.39	-18.54
284	10/18/2023	17	4	55.94	Yes	32.39	-23.55
285	10/18/2023	17	5	65.16	Yes	32.39	-32.77
286	10/18/2023	17	6	71.96	Yes	32.39	-39.57
287	10/18/2023	17	7	78.57	Yes	32.39	-46.18
288	10/18/2023	17	8	88.20	Yes	32.39	-55.81
289	10/18/2023	17	9	93.87	Yes	32.39	-61.48
290	10/18/2023	17	10	120.00	Yes	32.39	-87.61
291	10/18/2023	17	11	125.31	Yes	32.39	-92.92
292	10/18/2023	17	12	135.00	Yes	32.39	-102.61
293	10/18/2023	18	1	77.23	Yes	29.4	-47.83
294	10/18/2023	18	2	77.77	Yes	29.4	-48.37
295	10/18/2023	18	3	81.50	Yes	29.4	-52.10
296	10/18/2023	18	4	93.14	Yes	29.4	-63.74
297	10/18/2023	18	5	103.98	Yes	29.4	-74.58
298	10/18/2023	18	6	107.87	Yes	29.4	-78.47
299	10/18/2023	18	7	146.09	Yes	29.4	-116.69
300	10/18/2023	18	8	150.00	Yes	29.4	-120.60
301	10/18/2023	18	9	153.61	Yes	29.4	-124.21
302	10/18/2023	18	10	162.49	Yes	29.4	-133.09

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
303	10/18/2023	18	11	166.64	Yes	29.4	-137.24
304	10/18/2023	18	12	150.27	Yes	29.4	-120.87
305	10/18/2023	19	1	120.49	Yes	32.35	-88.14
306	10/18/2023	19	2	109.53	Yes	32.35	-77.18
307	10/18/2023	19	3	105.15	Yes	32.35	-72.80
308	10/18/2023	19	4	105.15	Yes	32.35	-72.80
309	10/18/2023	19	5	104.83	Yes	32.35	-72.48
310	10/18/2023	19	6	95.86	Yes	32.35	-63.51
311	10/18/2023	19	7	90.67	Yes	32.35	-58.32
312	10/18/2023	19	8	90.76	Yes	32.35	-58.41
313	10/18/2023	19	9	92.66	Yes	32.35	-60.31
314	10/18/2023	19	10	89.74	Yes	32.35	-57.39
315	10/18/2023	19	11	92.70	Yes	32.35	-60.35
316	10/18/2023	19	12	92.93	Yes	32.35	-60.58
317	10/18/2023	20	1	93.89	Yes	29.39	-64.50
318	10/18/2023	20	2	95.13	Yes	29.39	-65.74
319	10/18/2023	20	3	95.72	Yes	29.39	-66.33
320	10/18/2023	20	4	94.95	Yes	29.39	-65.56
321	10/18/2023	20	5	93.30	Yes	29.39	-63.91
322	10/18/2023	20	6	93.07	Yes	29.39	-63.68
323	10/18/2023	20	7	88.27	Yes	29.39	-58.88
324	10/18/2023	20	8	87.56	Yes	29.39	-58.17
325	10/18/2023	20	9	85.50	Yes	29.39	-56.11
326	10/18/2023	20	10	85.34	Yes	29.39	-55.95
327	10/18/2023	20	11	85.15	Yes	29.39	-55.76
328	10/18/2023	20	12	85.15	Yes	29.39	-55.76
329	10/18/2023	21	1	103.66	Yes	29.43	-74.23
330	10/18/2023	21	2	106.58	Yes	29.43	-77.15
331	10/18/2023	21	3	103.66	Yes	29.43	-74.23
332	10/18/2023	21	4	103.28	Yes	29.43	-73.85
333	10/18/2023	21	5	102.70	Yes	29.43	-73.27
334	10/18/2023	21	6	97.75	Yes	29.43	-68.32
335	10/18/2023	21	7	92.05	Yes	29.43	-62.62
336	10/18/2023	21	8	92.83	Yes	29.43	-63.40
337	10/18/2023	21	9	92.99	Yes	29.43	-63.56
338	10/18/2023	21	10	93.13	Yes	29.43	-63.70
339	10/18/2023	21	11	94.62	Yes	29.43	-65.19
340	10/18/2023	21	12	93.13	Yes	29.43	-63.70

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
341	10/18/2023	22	1	113.72	Yes	29.44	-84.28
342	10/18/2023	22	2	114.54	Yes	29.44	-85.10
343	10/18/2023	22	3	106.83	Yes	29.44	-77.39
344	10/18/2023	22	4	114.89	Yes	29.44	-85.45
345	10/18/2023	22	5	115.75	Yes	29.44	-86.31
346	10/18/2023	22	6	106.31	Yes	29.44	-76.87
347	10/18/2023	22	7	102.21	Yes	29.44	-72.77
348	10/18/2023	22	8	102.21	Yes	29.44	-72.77
349	10/18/2023	22	9	100.49	Yes	29.44	-71.05
350	10/18/2023	22	10	105.30	Yes	29.44	-75.86
351	10/18/2023	22	11	103.61	Yes	29.44	-74.17
352	10/18/2023	22	12	101.51	Yes	29.44	-72.07
353	10/18/2023	23	1	124.81	Yes	32.38	-92.43
354	10/18/2023	23	2	106.72	Yes	32.38	-74.34
355	10/18/2023	23	3	100.63	Yes	32.38	-68.25
356	10/18/2023	23	4	101.51	Yes	32.38	-69.13
357	10/18/2023	23	5	101.51	Yes	32.38	-69.13
358	10/18/2023	23	6	100.63	Yes	32.38	-68.25
359	10/18/2023	23	7	96.44	Yes	32.38	-64.06
360	10/18/2023	23	8	96.44	Yes	32.38	-64.06
361	10/18/2023	23	9	91.49	Yes	32.38	-59.11
362	10/18/2023	23	10	88.65	Yes	32.38	-56.27
363	10/18/2023	23	11	81.61	Yes	32.38	-49.23
364	10/18/2023	23	12	80.12	Yes	32.38	-47.74
365	10/18/2023	24	4	82.00	Yes	32.38	-49.62
366	10/18/2023	24	5	80.12	Yes	32.38	-47.74
367	10/18/2023	24	6	79.19	Yes	32.38	-46.81
368	10/18/2023	24	7	75.26	Yes	32.38	-42.88
369	10/18/2023	24	8	73.76	Yes	32.38	-41.38
370	10/18/2023	24	9	73.50	Yes	32.38	-41.12
371	10/18/2023	24	10	68.03	Yes	32.38	-35.65
372	10/18/2023	24	11	69.36	Yes	32.38	-36.98
373	10/18/2023	24	12	69.52	Yes	32.38	-37.14
374	10/19/2023	1	1	81.01	Yes	38.98	-42.03
375	10/19/2023	1	2	78.78	Yes	38.98	-39.80
376	10/19/2023	1	3	76.44	Yes	38.98	-37.46
377	10/19/2023	1	4	76.49	Yes	38.98	-37.51
378	10/19/2023	1	5	79.18	Yes	38.98	-40.20

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
379	10/19/2023	1	6	80.04	Yes	38.98	-41.06
380	10/19/2023	1	7	76.68	Yes	38.98	-37.70
381	10/19/2023	1	8	76.58	Yes	38.98	-37.60
382	10/19/2023	1	9	74.37	Yes	38.98	-35.39
383	10/19/2023	1	10	73.09	Yes	38.98	-34.11
384	10/19/2023	1	11	74.47	Yes	38.98	-35.49
385	10/19/2023	1	12	72.15	Yes	38.98	-33.17
386	10/19/2023	2	1	77.57	Yes	38.8	-38.77
387	10/19/2023	2	2	75.12	Yes	38.8	-36.32
388	10/19/2023	2	3	71.86	Yes	38.8	-33.06
389	10/19/2023	2	4	69.84	Yes	38.8	-31.04
390	10/19/2023	2	5	67.26	Yes	38.8	-28.46
391	10/19/2023	2	6	67.18	Yes	38.8	-28.38
392	10/19/2023	2	7	66.41	Yes	38.8	-27.61
393	10/19/2023	2	8	65.66	Yes	38.8	-26.86
394	10/19/2023	2	9	64.28	Yes	38.8	-25.48
395	10/19/2023	2	10	62.58	Yes	38.8	-23.78
396	10/19/2023	2	11	62.31	Yes	38.8	-23.51
397	10/19/2023	2	12	62.17	Yes	38.8	-23.37
398	10/19/2023	10	4	47.33	Yes	39.01	-8.32
399	10/19/2023	10	5	45.77	Yes	39.01	-6.76
400	10/19/2023	10	6	45.27	Yes	39.01	-6.26
401	10/19/2023	10	7	43.88	Yes	39.01	-4.87
402	10/19/2023	10	8	43.77	Yes	39.01	-4.76
403	10/19/2023	10	9	43.20	Yes	39.01	-4.19
404	10/19/2023	10	10	44.23	Yes	39.01	-5.22
405	10/19/2023	10	11	43.97	Yes	39.01	-4.96
406	10/19/2023	10	12	43.20	Yes	39.01	-4.19
407	10/19/2023	11	1	53.14	Yes	38.93	-14.21
408	10/19/2023	11	2	50.97	Yes	38.93	-12.04
409	10/19/2023	11	3	51.04	Yes	38.93	-12.11
410	10/19/2023	11	4	50.62	Yes	38.93	-11.69
411	10/19/2023	11	5	49.69	Yes	38.93	-10.76
412	10/19/2023	11	6	50.73	Yes	38.93	-11.80
413	10/19/2023	11	7	48.89	Yes	38.93	-9.96
414	10/19/2023	11	8	49.59	Yes	38.93	-10.66
415	10/19/2023	11	9	48.50	Yes	38.93	-9.57
416	10/19/2023	11	10	48.32	Yes	38.93	-9.39

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
417	10/19/2023	11	11	48.45	Yes	38.93	-9.52
418	10/19/2023	11	12	50.40	Yes	38.93	-11.47
419	10/19/2023	12	1	48.46	Yes	38.96	-9.50
420	10/19/2023	12	2	48.07	Yes	38.96	-9.11
421	10/19/2023	12	3	48.94	Yes	38.96	-9.98
422	10/19/2023	12	4	49.25	Yes	38.96	-10.29
423	10/19/2023	12	5	49.29	Yes	38.96	-10.33
424	10/19/2023	12	6	49.29	Yes	38.96	-10.33
425	10/19/2023	12	7	48.89	Yes	38.96	-9.93
426	10/19/2023	12	8	49.04	Yes	38.96	-10.08
427	10/19/2023	12	9	49.55	Yes	38.96	-10.59
428	10/19/2023	12	10	54.36	Yes	38.96	-15.40
429	10/19/2023	12	11	55.47	Yes	38.96	-16.51
430	10/19/2023	12	12	55.49	Yes	38.96	-16.53
431	10/19/2023	13	1	47.38	Yes	38.9	-8.48
432	10/19/2023	13	2	49.24	Yes	38.9	-10.34
433	10/19/2023	13	3	50.32	Yes	38.9	-11.42
434	10/19/2023	13	4	55.73	Yes	38.9	-16.83
435	10/19/2023	13	5	55.30	Yes	38.9	-16.40
436	10/19/2023	13	6	55.65	Yes	38.9	-16.75
437	10/19/2023	13	7	55.25	Yes	38.9	-16.35
438	10/19/2023	13	8	55.30	Yes	38.9	-16.40
439	10/19/2023	13	9	56.48	Yes	38.9	-17.58
440	10/19/2023	13	10	56.45	Yes	38.9	-17.55
441	10/19/2023	13	11	55.37	Yes	38.9	-16.47
442	10/19/2023	13	12	55.11	Yes	38.9	-16.21
443	10/19/2023	14	1	53.52	Yes	38.82	-14.70
444	10/19/2023	14	2	52.53	Yes	38.82	-13.71
445	10/19/2023	14	3	52.54	Yes	38.82	-13.72
446	10/19/2023	14	4	50.61	Yes	38.82	-11.79
447	10/19/2023	14	5	50.32	Yes	38.82	-11.50
448	10/19/2023	14	6	50.67	Yes	38.82	-11.85
449	10/19/2023	14	7	54.37	Yes	38.82	-15.55
450	10/19/2023	14	8	48.55	Yes	38.82	-9.73
451	10/19/2023	14	9	52.09	Yes	38.82	-13.27
452	10/19/2023	14	10	58.64	Yes	38.82	-19.82
453	10/19/2023	14	11	53.54	Yes	38.82	-14.72
454	10/19/2023	14	12	54.19	Yes	38.82	-15.37

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
455	10/19/2023	15	1	47.68	Yes	38.82	-8.86
456	10/19/2023	15	2	41.48	Yes	38.82	-2.66
457	10/19/2023	15	3	49.75	Yes	38.82	-10.93
458	10/19/2023	15	4	51.15	Yes	38.82	-12.33
459	10/19/2023	15	5	52.23	Yes	38.82	-13.41
460	10/19/2023	15	6	50.79	Yes	38.82	-11.97
461	10/19/2023	15	7	68.78	Yes	38.82	-29.96
462	10/19/2023	15	8	74.68	Yes	38.82	-35.86
463	10/19/2023	15	9	70.60	Yes	38.82	-31.78
464	10/19/2023	15	10	72.42	Yes	38.82	-33.60
465	10/19/2023	15	11	68.21	Yes	38.82	-29.39
466	10/19/2023	15	12	81.61	Yes	38.82	-42.79
467	10/19/2023	16	1	54.53	Yes	38.82	-15.71
468	10/19/2023	16	2	52.92	Yes	38.82	-14.10
469	10/19/2023	16	3	61.33	Yes	38.82	-22.51
470	10/19/2023	16	4	57.00	Yes	38.82	-18.18
471	10/19/2023	16	5	52.08	Yes	38.82	-13.26
472	10/19/2023	16	6	53.24	Yes	38.82	-14.42
473	10/19/2023	16	7	73.00	Yes	38.82	-34.18
474	10/19/2023	16	8	72.89	Yes	38.82	-34.07
475	10/19/2023	16	9	74.83	Yes	38.82	-36.01
476	10/19/2023	16	10	83.92	Yes	38.82	-45.10
477	10/19/2023	16	11	75.17	Yes	38.82	-36.35
478	10/19/2023	16	12	69.62	Yes	38.82	-30.80
479	10/19/2023	17	1	53.80	Yes	38.9	-14.90
480	10/19/2023	17	2	53.63	Yes	38.9	-14.73
481	10/19/2023	17	3	54.87	Yes	38.9	-15.97
482	10/19/2023	17	4	59.74	Yes	38.9	-20.84
483	10/19/2023	17	5	61.88	Yes	38.9	-22.98
484	10/19/2023	17	6	75.84	Yes	38.9	-36.94
485	10/19/2023	17	7	77.84	Yes	38.9	-38.94
486	10/19/2023	17	8	84.09	Yes	38.9	-45.19
487	10/19/2023	17	9	95.90	Yes	38.9	-57.00
488	10/19/2023	17	10	96.25	Yes	38.9	-57.35
489	10/19/2023	17	11	109.60	Yes	38.9	-70.70
490	10/19/2023	17	12	113.44	Yes	38.9	-74.54
491	10/19/2023	18	1	72.35	Yes	38.92	-33.43
492	10/19/2023	18	2	76.93	Yes	38.92	-38.01

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
493	10/19/2023	18	3	81.40	Yes	38.92	-42.48
494	10/19/2023	18	4	82.08	Yes	38.92	-43.16
495	10/19/2023	18	5	94.78	Yes	38.92	-55.86
496	10/19/2023	18	6	119.18	Yes	38.92	-80.26
497	10/19/2023	18	7	127.62	Yes	38.92	-88.70
498	10/19/2023	18	8	132.96	Yes	38.92	-94.04
499	10/19/2023	18	9	148.55	Yes	38.92	-109.63
500	10/19/2023	18	10	168.35	Yes	38.92	-129.43
501	10/19/2023	18	11	170.39	Yes	38.92	-131.47
502	10/19/2023	18	12	169.12	Yes	38.92	-130.20
503	10/19/2023	19	1	135.83	Yes	38.94	-96.89
504	10/19/2023	19	2	142.63	Yes	38.94	-103.69
505	10/19/2023	19	3	133.39	Yes	38.94	-94.45
506	10/19/2023	19	4	128.31	Yes	38.94	-89.37
507	10/19/2023	19	5	128.22	Yes	38.94	-89.28
508	10/19/2023	19	6	126.35	Yes	38.94	-87.41
509	10/19/2023	19	7	126.73	Yes	38.94	-87.79
510	10/19/2023	19	8	125.70	Yes	38.94	-86.76
511	10/19/2023	19	9	121.09	Yes	38.94	-82.15
512	10/19/2023	19	10	109.64	Yes	38.94	-70.70
513	10/19/2023	19	11	109.02	Yes	38.94	-70.08
514	10/19/2023	19	12	112.27	Yes	38.94	-73.33
515	10/19/2023	20	1	93.28	Yes	38.93	-54.35
516	10/19/2023	20	2	93.98	Yes	38.93	-55.05
517	10/19/2023	20	3	89.36	Yes	38.93	-50.43
518	10/19/2023	20	4	84.28	Yes	38.93	-45.35
519	10/19/2023	20	5	85.75	Yes	38.93	-46.82
520	10/19/2023	20	6	85.75	Yes	38.93	-46.82
521	10/19/2023	20	7	83.16	Yes	38.93	-44.23
522	10/19/2023	20	8	82.58	Yes	38.93	-43.65
523	10/19/2023	20	9	82.40	Yes	38.93	-43.47
524	10/19/2023	20	10	81.84	Yes	38.93	-42.91
525	10/19/2023	20	11	81.74	Yes	38.93	-42.81
526	10/19/2023	20	12	84.80	Yes	38.93	-45.87
527	10/19/2023	21	1	101.37	Yes	39.04	-62.33
528	10/19/2023	21	2	101.37	Yes	39.04	-62.33
529	10/19/2023	21	3	96.53	Yes	39.04	-57.49
530	10/19/2023	21	4	92.90	Yes	39.04	-53.86

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
531	10/19/2023	21	5	91.62	Yes	39.04	-52.58
532	10/19/2023	21	6	90.57	Yes	39.04	-51.53
533	10/19/2023	21	7	86.72	Yes	39.04	-47.68
534	10/19/2023	21	8	90.48	Yes	39.04	-51.44
535	10/19/2023	21	9	92.15	Yes	39.04	-53.11
536	10/19/2023	21	10	95.57	Yes	39.04	-56.53
537	10/19/2023	21	11	97.88	Yes	39.04	-58.84
538	10/19/2023	21	12	94.63	Yes	39.04	-55.59
539	10/19/2023	22	1	113.63	Yes	38.97	-74.66
540	10/19/2023	22	2	116.01	Yes	38.97	-77.04
541	10/19/2023	22	3	113.63	Yes	38.97	-74.66
542	10/19/2023	22	4	107.54	Yes	38.97	-68.57
543	10/19/2023	22	5	107.85	Yes	38.97	-68.88
544	10/19/2023	22	6	96.62	Yes	38.97	-57.65
545	10/19/2023	22	7	96.17	Yes	38.97	-57.20
546	10/19/2023	22	8	93.10	Yes	38.97	-54.13
547	10/19/2023	22	9	92.09	Yes	38.97	-53.12
548	10/19/2023	22	10	91.23	Yes	38.97	-52.26
549	10/19/2023	22	11	86.14	Yes	38.97	-47.17
550	10/19/2023	22	12	82.71	Yes	38.97	-43.74
551	10/19/2023	23	1	106.73	Yes	38.95	-67.78
552	10/19/2023	23	2	134.40	Yes	38.95	-95.45
553	10/19/2023	23	3	117.31	Yes	38.95	-78.36
554	10/19/2023	23	4	112.59	Yes	38.95	-73.64
555	10/19/2023	23	5	103.46	Yes	38.95	-64.51
556	10/19/2023	23	6	87.24	Yes	38.95	-48.29
557	10/19/2023	23	7	87.48	Yes	38.95	-48.53
558	10/19/2023	23	8	85.57	Yes	38.95	-46.62
559	10/19/2023	23	9	82.33	Yes	38.95	-43.38
560	10/19/2023	23	10	78.27	Yes	38.95	-39.32
561	10/19/2023	23	11	78.27	Yes	38.95	-39.32
562	10/19/2023	23	12	79.34	Yes	38.95	-40.39
563	10/19/2023	24	1	76.84	Yes	38.9	-37.94
564	10/19/2023	24	2	77.81	Yes	38.9	-38.91
565	10/19/2023	24	3	79.84	Yes	38.9	-40.94
566	10/19/2023	24	4	77.77	Yes	38.9	-38.87
567	10/19/2023	24	5	78.51	Yes	38.9	-39.61
568	10/19/2023	24	6	73.44	Yes	38.9	-34.54

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
569	10/19/2023	24	7	72.67	Yes	38.9	-33.77
570	10/19/2023	24	8	64.36	Yes	38.9	-25.46
571	10/19/2023	24	9	62.63	Yes	38.9	-23.73
572	10/19/2023	24	10	63.57	Yes	38.9	-24.67
573	10/19/2023	24	11	62.89	Yes	38.9	-23.99
574	10/19/2023	24	12	62.70	Yes	38.9	-23.80
575	10/20/2023	9	9	44.43	Yes	34	-10.43
576	10/20/2023	9	10	39.04	Yes	34	-5.04
577	10/20/2023	9	11	35.09	Yes	34	-1.09
578	10/20/2023	9	12	27.97	Yes	34	6.03
579	10/20/2023	10	1	49.74	Yes	34.02	-15.72
580	10/20/2023	10	2	47.03	Yes	34.02	-13.01
581	10/20/2023	10	3	46.58	Yes	34.02	-12.56
582	10/20/2023	10	4	46.50	Yes	34.02	-12.48
583	10/20/2023	10	5	43.07	Yes	34.02	-9.05
584	10/20/2023	10	6	38.97	Yes	34.02	-4.95
585	10/20/2023	10	7	38.73	Yes	34.02	-4.71
586	10/20/2023	10	8	38.79	Yes	34.02	-4.77
587	10/20/2023	10	9	36.06	Yes	34.02	-2.04
588	10/20/2023	10	10	39.18	Yes	34.02	-5.16
589	10/20/2023	10	11	36.39	Yes	34.02	-2.37
590	10/20/2023	10	12	34.45	Yes	34.02	-0.43
591	10/20/2023	11	1	41.05	Yes	33.97	-7.08
592	10/20/2023	11	2	39.01	Yes	33.97	-5.04
593	10/20/2023	11	3	38.68	Yes	33.97	-4.71
594	10/20/2023	11	4	44.85	Yes	33.97	-10.88
595	10/20/2023	11	5	42.41	Yes	33.97	-8.44
596	10/20/2023	11	6	41.62	Yes	33.97	-7.65
597	10/20/2023	11	7	42.28	Yes	33.97	-8.31
598	10/20/2023	11	8	42.16	Yes	33.97	-8.19
599	10/20/2023	11	9	42.07	Yes	33.97	-8.10
600	10/20/2023	11	10	39.80	Yes	33.97	-5.83
601	10/20/2023	11	11	38.30	Yes	33.97	-4.33
602	10/20/2023	11	12	38.59	Yes	33.97	-4.62
603	10/20/2023	12	1	37.87	Yes	33.95	-3.92
604	10/20/2023	12	2	37.15	Yes	33.95	-3.20
605	10/20/2023	12	3	35.13	Yes	33.95	-1.18
606	10/20/2023	12	4	35.24	Yes	33.95	-1.29

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
607	10/20/2023	12	5	35.85	Yes	33.95	-1.90
608	10/20/2023	12	6	35.54	Yes	33.95	-1.59
609	10/20/2023	12	7	36.23	Yes	33.95	-2.28
610	10/20/2023	12	8	35.60	Yes	33.95	-1.65
611	10/20/2023	12	9	37.04	Yes	33.95	-3.09
612	10/20/2023	12	10	38.77	Yes	33.95	-4.82
613	10/20/2023	12	11	38.58	Yes	33.95	-4.63
614	10/20/2023	12	12	39.94	Yes	33.95	-5.99
615	10/20/2023	13	1	37.19	Yes	33.98	-3.21
616	10/20/2023	13	2	36.11	Yes	33.98	-2.13
617	10/20/2023	13	3	36.72	Yes	33.98	-2.74
618	10/20/2023	13	4	39.76	Yes	33.98	-5.78
619	10/20/2023	13	5	39.43	Yes	33.98	-5.45
620	10/20/2023	13	6	42.62	Yes	33.98	-8.64
621	10/20/2023	13	7	51.19	Yes	33.98	-17.21
622	10/20/2023	13	8	56.90	Yes	33.98	-22.92
623	10/20/2023	13	9	58.46	Yes	33.98	-24.48
624	10/20/2023	13	10	57.10	Yes	33.98	-23.12
625	10/20/2023	13	11	59.22	Yes	33.98	-25.24
626	10/20/2023	13	12	61.41	Yes	33.98	-27.43
627	10/20/2023	14	1	59.40	Yes	33.98	-25.42
628	10/20/2023	14	2	54.21	Yes	33.98	-20.23
629	10/20/2023	14	3	59.22	Yes	33.98	-25.24
630	10/20/2023	14	4	68.58	Yes	33.98	-34.60
631	10/20/2023	14	5	62.78	Yes	33.98	-28.80
632	10/20/2023	14	6	66.47	Yes	33.98	-32.49
633	10/20/2023	14	7	61.30	Yes	33.98	-27.32
634	10/20/2023	14	8	71.59	Yes	33.98	-37.61
635	10/20/2023	14	9	71.12	Yes	33.98	-37.14
636	10/20/2023	14	10	71.86	Yes	33.98	-37.88
637	10/20/2023	14	11	73.13	Yes	33.98	-39.15
638	10/20/2023	14	12	72.48	Yes	33.98	-38.50
639	10/20/2023	15	1	58.52	Yes	33.98	-24.54
640	10/20/2023	15	2	56.85	Yes	33.98	-22.87
641	10/20/2023	15	3	55.20	Yes	33.98	-21.22
642	10/20/2023	15	4	55.64	Yes	33.98	-21.66
643	10/20/2023	15	5	57.25	Yes	33.98	-23.27
644	10/20/2023	15	6	59.10	Yes	33.98	-25.12

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
645	10/20/2023	15	7	69.42	Yes	33.98	-35.44
646	10/20/2023	15	8	69.42	Yes	33.98	-35.44
647	10/20/2023	15	9	75.87	Yes	33.98	-41.89
648	10/20/2023	15	10	72.77	Yes	33.98	-38.79
649	10/20/2023	15	11	75.17	Yes	33.98	-41.19
650	10/20/2023	15	12	73.19	Yes	33.98	-39.21
651	10/20/2023	16	1	67.10	Yes	34.05	-33.05
652	10/20/2023	16	2	63.87	Yes	34.05	-29.82
653	10/20/2023	16	3	67.08	Yes	34.05	-33.03
654	10/20/2023	16	4	68.92	Yes	34.05	-34.87
655	10/20/2023	16	5	68.48	Yes	34.05	-34.43
656	10/20/2023	16	6	72.55	Yes	34.05	-38.50
657	10/20/2023	16	7	73.72	Yes	34.05	-39.67
658	10/20/2023	16	8	78.01	Yes	34.05	-43.96
659	10/20/2023	16	9	84.54	Yes	34.05	-50.49
660	10/20/2023	16	10	83.42	Yes	34.05	-49.37
661	10/20/2023	16	11	81.51	Yes	34.05	-47.46
662	10/20/2023	16	12	80.32	Yes	34.05	-46.27
663	10/20/2023	17	1	59.86	Yes	34.01	-25.85
664	10/20/2023	17	2	58.58	Yes	34.01	-24.57
665	10/20/2023	17	3	61.36	Yes	34.01	-27.35
666	10/20/2023	17	4	63.04	Yes	34.01	-29.03
667	10/20/2023	17	5	70.39	Yes	34.01	-36.38
668	10/20/2023	17	6	73.46	Yes	34.01	-39.45
669	10/20/2023	17	7	71.57	Yes	34.01	-37.56
670	10/20/2023	17	8	79.74	Yes	34.01	-45.73
671	10/20/2023	17	9	99.59	Yes	34.01	-65.58
672	10/20/2023	17	10	105.14	Yes	34.01	-71.13
673	10/20/2023	17	11	111.16	Yes	34.01	-77.15
674	10/20/2023	17	12	115.57	Yes	34.01	-81.56
675	10/20/2023	18	1	73.15	Yes	33.95	-39.20
676	10/20/2023	18	2	78.35	Yes	33.95	-44.40
677	10/20/2023	18	3	79.60	Yes	33.95	-45.65
678	10/20/2023	18	4	83.28	Yes	33.95	-49.33
679	10/20/2023	18	5	91.98	Yes	33.95	-58.03
680	10/20/2023	18	6	98.26	Yes	33.95	-64.31
681	10/20/2023	18	7	102.72	Yes	33.95	-68.77
682	10/20/2023	18	8	104.68	Yes	33.95	-70.73

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
683	10/20/2023	18	9	109.27	Yes	33.95	-75.32
684	10/20/2023	18	10	109.26	Yes	33.95	-75.31
685	10/20/2023	18	11	111.23	Yes	33.95	-77.28
686	10/20/2023	18	12	109.26	Yes	33.95	-75.31
687	10/20/2023	19	1	108.18	Yes	33.97	-74.21
688	10/20/2023	19	2	104.64	Yes	33.97	-70.67
689	10/20/2023	19	3	104.83	Yes	33.97	-70.86
690	10/20/2023	19	4	104.79	Yes	33.97	-70.82
691	10/20/2023	19	5	104.83	Yes	33.97	-70.86
692	10/20/2023	19	6	104.85	Yes	33.97	-70.88
693	10/20/2023	19	7	97.14	Yes	33.97	-63.17
694	10/20/2023	19	8	97.25	Yes	33.97	-63.28
695	10/20/2023	19	9	90.30	Yes	33.97	-56.33
696	10/20/2023	19	10	83.59	Yes	33.97	-49.62
697	10/20/2023	19	11	82.47	Yes	33.97	-48.50
698	10/20/2023	19	12	81.45	Yes	33.97	-47.48
699	10/20/2023	20	1	83.23	Yes	33.94	-49.29
700	10/20/2023	20	2	81.23	Yes	33.94	-47.29
701	10/20/2023	20	3	80.65	Yes	33.94	-46.71
702	10/20/2023	20	4	75.67	Yes	33.94	-41.73
703	10/20/2023	20	5	73.18	Yes	33.94	-39.24
704	10/20/2023	20	6	70.24	Yes	33.94	-36.30
705	10/20/2023	20	7	68.86	Yes	33.94	-34.92
706	10/20/2023	20	8	68.35	Yes	33.94	-34.41
707	10/20/2023	20	9	67.56	Yes	33.94	-33.62
708	10/20/2023	20	10	67.48	Yes	33.94	-33.54
709	10/20/2023	20	11	66.22	Yes	33.94	-32.28
710	10/20/2023	20	12	66.23	Yes	33.94	-32.29
711	10/20/2023	21	8	86.71	Yes	33.94	-52.77
712	10/20/2023	21	9	85.76	Yes	33.94	-51.82
713	10/20/2023	21	10	84.94	Yes	33.94	-51.00
714	10/20/2023	21	11	82.85	Yes	33.94	-48.91
715	10/20/2023	21	12	84.51	Yes	33.94	-50.57
716	10/20/2023	22	1	108.02	Yes	34	-74.02
717	10/20/2023	22	2	103.08	Yes	34	-69.08
718	10/20/2023	22	3	99.40	Yes	34	-65.40
719	10/20/2023	22	4	101.16	Yes	34	-67.16
720	10/20/2023	22	5	100.66	Yes	34	-66.66

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721	10/20/2023	22	6	99.38	Yes	34	-65.38
722	10/20/2023	22	7	102.20	Yes	34	-68.20
723	10/20/2023	22	8	104.23	Yes	34	-70.23
724	10/20/2023	22	9	100.33	Yes	34	-66.33
725	10/20/2023	22	10	99.80	Yes	34	-65.80
726	10/20/2023	22	11	85.73	Yes	34	-51.73
727	10/20/2023	22	12	83.94	Yes	34	-49.94
728	10/20/2023	23	1	100.68	Yes	33.98	-66.70
729	10/20/2023	23	2	102.84	Yes	33.98	-68.86
730	10/20/2023	23	3	100.27	Yes	33.98	-66.29
731	10/20/2023	23	4	94.56	Yes	33.98	-60.58
732	10/20/2023	23	5	87.55	Yes	33.98	-53.57
733	10/20/2023	23	6	85.87	Yes	33.98	-51.89
734	10/20/2023	23	7	79.52	Yes	33.98	-45.54
735	10/20/2023	23	8	73.07	Yes	33.98	-39.09
736	10/20/2023	23	9	70.24	Yes	33.98	-36.26
737	10/20/2023	23	10	68.16	Yes	33.98	-34.18
738	10/20/2023	23	11	68.15	Yes	33.98	-34.17
739	10/20/2023	23	12	67.36	Yes	33.98	-33.38
740	10/20/2023	24	1	77.25	Yes	33.98	-43.27
741	10/20/2023	24	2	76.09	Yes	33.98	-42.11
742	10/20/2023	24	3	71.49	Yes	33.98	-37.51
743	10/20/2023	24	4	70.71	Yes	33.98	-36.73
744	10/20/2023	24	5	71.38	Yes	33.98	-37.40
745	10/20/2023	24	6	70.57	Yes	33.98	-36.59
746	10/20/2023	24	7	68.22	Yes	33.98	-34.24
747	10/20/2023	24	8	70.46	Yes	33.98	-36.48
748	10/20/2023	24	9	71.10	Yes	33.98	-37.12
749	10/20/2023	24	10	73.47	Yes	33.98	-39.49
750	10/20/2023	24	11	70.32	Yes	33.98	-36.34
751	10/20/2023	24	12	60.22	Yes	33.98	-26.24
752	10/21/2023	1	1	60.22	Yes	27.25	-32.97
753	10/21/2023	1	2	62.62	Yes	27.25	-35.37
754	10/21/2023	1	3	60.58	Yes	27.25	-33.33
755	10/21/2023	1	4	60.80	Yes	27.25	-33.55
756	10/21/2023	1	5	60.77	Yes	27.25	-33.52
757	10/21/2023	1	6	60.52	Yes	27.25	-33.27
758	10/21/2023	1	7	59.58	Yes	27.25	-32.33

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759	10/21/2023	1	8	56.99	Yes	27.25	-29.74
760	10/21/2023	1	9	54.79	Yes	27.25	-27.54
761	10/21/2023	1	10	54.32	Yes	27.25	-27.07
762	10/21/2023	1	11	56.25	Yes	27.25	-29.00
763	10/21/2023	1	12	56.25	Yes	27.25	-29.00
764	10/21/2023	2	1	66.71	Yes	27.3	-39.41
765	10/21/2023	2	2	65.49	Yes	27.3	-38.19
766	10/21/2023	2	3	65.03	Yes	27.3	-37.73
767	10/21/2023	2	4	63.68	Yes	27.3	-36.38
768	10/21/2023	2	5	63.67	Yes	27.3	-36.37
769	10/21/2023	2	6	68.93	Yes	27.3	-41.63
770	10/21/2023	2	7	65.72	Yes	27.3	-38.42
771	10/21/2023	2	8	62.87	Yes	27.3	-35.57
772	10/21/2023	2	9	62.78	Yes	27.3	-35.48
773	10/21/2023	2	10	56.35	Yes	27.3	-29.05
774	10/21/2023	2	11	56.85	Yes	27.3	-29.55
775	10/21/2023	2	12	57.13	Yes	27.3	-29.83
776	10/21/2023	3	1	65.64	Yes	27.19	-38.45
777	10/21/2023	3	2	66.05	Yes	27.19	-38.86
778	10/21/2023	3	3	66.00	Yes	27.19	-38.81
779	10/21/2023	3	4	60.17	Yes	27.19	-32.98
780	10/21/2023	3	5	58.54	Yes	27.19	-31.35
781	10/21/2023	3	6	61.66	Yes	27.19	-34.47
782	10/21/2023	3	7	58.91	Yes	27.19	-31.72
783	10/21/2023	3	8	56.64	Yes	27.19	-29.45
784	10/21/2023	3	9	56.80	Yes	27.19	-29.61
785	10/21/2023	3	10	56.52	Yes	27.19	-29.33
786	10/21/2023	3	11	56.33	Yes	27.19	-29.14
787	10/21/2023	3	12	56.78	Yes	27.19	-29.59
788	10/21/2023	4	1	56.01	Yes	27.31	-28.70
789	10/21/2023	4	2	52.80	Yes	27.31	-25.49
790	10/21/2023	4	3	53.24	Yes	27.31	-25.93
791	10/21/2023	4	4	51.42	Yes	27.31	-24.11
792	10/21/2023	4	5	50.70	Yes	27.31	-23.39
793	10/21/2023	4	6	48.61	Yes	27.31	-21.30
794	10/21/2023	4	7	48.18	Yes	27.31	-20.87
795	10/21/2023	4	8	46.10	Yes	27.31	-18.79
796	10/21/2023	4	9	46.10	Yes	27.31	-18.79

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797	10/21/2023	4	10	42.04	Yes	27.31	-14.73
798	10/21/2023	4	11	41.47	Yes	27.31	-14.16
799	10/21/2023	4	12	41.97	Yes	27.31	-14.66
800	10/21/2023	5	1	46.16	Yes	27.31	-18.85
801	10/21/2023	5	2	46.16	Yes	27.31	-18.85
802	10/21/2023	5	3	46.20	Yes	27.31	-18.89
803	10/21/2023	5	4	46.85	Yes	27.31	-19.54
804	10/21/2023	5	5	47.58	Yes	27.31	-20.27
805	10/21/2023	5	6	47.58	Yes	27.31	-20.27
806	10/21/2023	5	7	47.43	Yes	27.31	-20.12
807	10/21/2023	5	8	48.24	Yes	27.31	-20.93
808	10/21/2023	5	9	48.24	Yes	27.31	-20.93
809	10/21/2023	5	10	48.13	Yes	27.31	-20.82
810	10/21/2023	5	11	48.32	Yes	27.31	-21.01
811	10/21/2023	5	12	50.00	Yes	27.31	-22.69
812	10/21/2023	6	1	49.55	Yes	27.26	-22.29
813	10/21/2023	6	2	49.75	Yes	27.26	-22.49
814	10/21/2023	6	3	50.03	Yes	27.26	-22.77
815	10/21/2023	6	4	50.30	Yes	27.26	-23.04
816	10/21/2023	6	5	50.85	Yes	27.26	-23.59
817	10/21/2023	6	6	51.01	Yes	27.26	-23.75
818	10/21/2023	6	7	53.59	Yes	27.26	-26.33
819	10/21/2023	6	8	53.79	Yes	27.26	-26.53
820	10/21/2023	6	9	55.58	Yes	27.26	-28.32
821	10/21/2023	6	10	55.81	Yes	27.26	-28.55
822	10/21/2023	6	11	55.94	Yes	27.26	-28.68
823	10/21/2023	6	12	57.93	Yes	27.26	-30.67
824	10/21/2023	7	1	55.95	Yes	27.28	-28.67
825	10/21/2023	7	2	54.91	Yes	27.28	-27.63
826	10/21/2023	7	3	55.95	Yes	27.28	-28.67
827	10/21/2023	7	4	56.39	Yes	27.28	-29.11
828	10/21/2023	7	5	57.94	Yes	27.28	-30.66
829	10/21/2023	7	6	58.55	Yes	27.28	-31.27
830	10/21/2023	7	7	61.44	Yes	27.28	-34.16
831	10/21/2023	7	8	61.59	Yes	27.28	-34.31
832	10/21/2023	7	9	61.91	Yes	27.28	-34.63
833	10/21/2023	7	10	61.77	Yes	27.28	-34.49
834	10/21/2023	7	11	65.94	Yes	27.28	-38.66

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835	10/21/2023	7	12	67.17	Yes	27.28	-39.89
836	10/21/2023	8	1	67.44	Yes	27.23	-40.21
837	10/21/2023	8	2	67.44	Yes	27.23	-40.21
838	10/21/2023	8	3	67.38	Yes	27.23	-40.15
839	10/21/2023	8	4	67.85	Yes	27.23	-40.62
840	10/21/2023	8	5	62.38	Yes	27.23	-35.15
841	10/21/2023	8	6	62.38	Yes	27.23	-35.15
842	10/21/2023	8	7	59.29	Yes	27.23	-32.06
843	10/21/2023	8	8	56.58	Yes	27.23	-29.35
844	10/21/2023	8	9	51.19	Yes	27.23	-23.96
845	10/21/2023	8	10	39.24	Yes	27.23	-12.01
846	10/21/2023	8	11	33.83	Yes	27.23	-6.60
847	10/21/2023	8	12	29.59	Yes	27.23	-2.36
848	10/21/2023	9	1	34.11	Yes	27.31	-6.80
849	10/21/2023	9	2	33.39	Yes	27.31	-6.08
850	10/21/2023	9	3	32.37	Yes	27.31	-5.06
851	10/21/2023	9	4	26.92	Yes	27.31	0.39
852	10/21/2023	9	5	17.94	Yes	27.31	9.37
853	10/21/2023	9	6	14.15	Yes	27.31	13.16
854	10/21/2023	9	7	12.70	Yes	27.31	14.61
855	10/21/2023	9	8	11.90	Yes	27.31	15.41
856	10/21/2023	9	9	11.50	Yes	27.31	15.81
857	10/21/2023	9	10	12.53	Yes	27.31	14.78
858	10/21/2023	9	11	13.23	Yes	27.31	14.08
859	10/21/2023	9	12	10.81	Yes	27.31	16.50
860	10/21/2023	10	1	16.22	Yes	27.31	11.09
861	10/21/2023	10	2	15.89	Yes	27.31	11.42
862	10/21/2023	10	3	13.33	Yes	27.31	13.98
863	10/21/2023	10	4	14.82	Yes	27.31	12.49
864	10/21/2023	10	5	12.97	Yes	27.31	14.34
865	10/21/2023	10	6	12.96	Yes	27.31	14.35
866	10/21/2023	10	7	12.61	Yes	27.31	14.70
867	10/21/2023	10	8	12.77	Yes	27.31	14.54
868	10/21/2023	10	9	12.83	Yes	27.31	14.48
869	10/21/2023	10	10	12.75	Yes	27.31	14.56
870	10/21/2023	10	11	14.01	Yes	27.31	13.30
871	10/21/2023	10	12	14.08	Yes	27.31	13.23
872	10/21/2023	11	1	19.91	Yes	27.3	7.39

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873	10/21/2023	11	2	20.71	Yes	27.3	6.59
874	10/21/2023	11	3	21.62	Yes	27.3	5.68
875	10/21/2023	11	4	21.69	Yes	27.3	5.61
876	10/21/2023	11	5	21.51	Yes	27.3	5.79
877	10/21/2023	11	6	21.53	Yes	27.3	5.77
878	10/21/2023	11	7	22.81	Yes	27.3	4.49
879	10/21/2023	11	8	22.07	Yes	27.3	5.23
880	10/21/2023	11	9	22.52	Yes	27.3	4.78
881	10/21/2023	11	10	22.54	Yes	27.3	4.76
882	10/21/2023	11	11	22.92	Yes	27.3	4.38
883	10/21/2023	11	12	22.83	Yes	27.3	4.47
884	10/21/2023	12	1	26.01	Yes	27.29	1.28
885	10/21/2023	12	2	26.46	Yes	27.29	0.83
886	10/21/2023	12	3	26.23	Yes	27.29	1.06
887	10/21/2023	12	4	26.45	Yes	27.29	0.84
888	10/21/2023	12	5	24.92	Yes	27.29	2.37
889	10/21/2023	12	6	26.01	Yes	27.29	1.28
890	10/21/2023	12	7	25.10	Yes	27.29	2.19
891	10/21/2023	12	8	25.14	Yes	27.29	2.15
892	10/21/2023	12	9	25.11	Yes	27.29	2.18
893	10/21/2023	12	10	25.30	Yes	27.29	1.99
894	10/21/2023	12	11	25.24	Yes	27.29	2.05
895	10/21/2023	12	12	25.13	Yes	27.29	2.16
896	10/21/2023	13	1	24.62	Yes	27.17	2.55
897	10/21/2023	13	2	23.17	Yes	27.17	4.00
898	10/21/2023	13	3	24.24	Yes	27.17	2.93
899	10/21/2023	13	4	25.16	Yes	27.17	2.01
900	10/21/2023	13	5	22.18	Yes	27.17	4.99
901	10/21/2023	13	6	25.12	Yes	27.17	2.05
902	10/21/2023	13	7	26.06	Yes	27.17	1.11
903	10/21/2023	13	8	27.32	Yes	27.17	-0.15
904	10/21/2023	13	9	26.81	Yes	27.17	0.36
905	10/21/2023	13	10	27.71	Yes	27.17	-0.54
906	10/21/2023	13	11	28.10	Yes	27.17	-0.93
907	10/21/2023	13	12	27.52	Yes	27.17	-0.35
908	10/21/2023	14	1	26.82	Yes	27.26	0.44
909	10/21/2023	14	2	25.65	Yes	27.26	1.61
910	10/21/2023	14	3	26.92	Yes	27.26	0.34

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911	10/21/2023	14	4	26.89	Yes	27.26	0.37
912	10/21/2023	14	5	25.62	Yes	27.26	1.64
913	10/21/2023	14	6	26.38	Yes	27.26	0.88
914	10/21/2023	14	7	26.89	Yes	27.26	0.37
915	10/21/2023	14	8	25.04	Yes	27.26	2.22
916	10/21/2023	14	9	25.80	Yes	27.26	1.46
917	10/21/2023	14	10	25.65	Yes	27.26	1.61
918	10/21/2023	14	11	25.56	Yes	27.26	1.70
919	10/21/2023	14	12	29.06	Yes	27.26	-1.80
920	10/21/2023	15	1	27.41	Yes	27.26	-0.15
921	10/21/2023	15	2	27.47	Yes	27.26	-0.21
922	10/21/2023	15	3	27.47	Yes	27.26	-0.21
923	10/21/2023	15	4	28.39	Yes	27.26	-1.13
924	10/21/2023	15	5	28.20	Yes	27.26	-0.94
925	10/21/2023	15	6	29.10	Yes	27.26	-1.84
926	10/21/2023	15	7	30.84	Yes	27.26	-3.58
927	10/21/2023	15	8	30.83	Yes	27.26	-3.57
928	10/21/2023	15	9	30.33	Yes	27.26	-3.07
929	10/21/2023	15	10	30.85	Yes	27.26	-3.59
930	10/21/2023	15	11	33.40	Yes	27.26	-6.14
931	10/21/2023	15	12	32.21	Yes	27.26	-4.95
932	10/21/2023	16	1	31.89	Yes	27.26	-4.63
933	10/21/2023	16	2	30.68	Yes	27.26	-3.42
934	10/21/2023	16	3	30.33	Yes	27.26	-3.07
935	10/21/2023	16	4	30.46	Yes	27.26	-3.20
936	10/21/2023	16	5	30.54	Yes	27.26	-3.28
937	10/21/2023	16	6	30.58	Yes	27.26	-3.32
938	10/21/2023	16	7	29.67	Yes	27.26	-2.41
939	10/21/2023	16	8	28.80	Yes	27.26	-1.54
940	10/21/2023	16	9	31.19	Yes	27.26	-3.93
941	10/21/2023	16	10	37.78	Yes	27.26	-10.52
942	10/21/2023	16	11	35.36	Yes	27.26	-8.10
943	10/21/2023	16	12	35.17	Yes	27.26	-7.91
944	10/21/2023	17	1	30.00	Yes	27.24	-2.76
945	10/21/2023	17	2	29.55	Yes	27.24	-2.31
946	10/21/2023	17	3	29.25	Yes	27.24	-2.01
947	10/21/2023	17	4	30.21	Yes	27.24	-2.97
948	10/21/2023	17	5	35.27	Yes	27.24	-8.03

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949	10/21/2023	17	6	45.21	Yes	27.24	-17.97
950	10/21/2023	17	7	47.28	Yes	27.24	-20.04
951	10/21/2023	17	8	56.85	Yes	27.24	-29.61
952	10/21/2023	17	9	60.59	Yes	27.24	-33.35
953	10/21/2023	17	10	66.29	Yes	27.24	-39.05
954	10/21/2023	17	11	76.79	Yes	27.24	-49.55
955	10/21/2023	17	12	82.02	Yes	27.24	-54.78
956	10/21/2023	18	1	61.77	Yes	27.25	-34.52
957	10/21/2023	18	2	62.00	Yes	27.25	-34.75
958	10/21/2023	18	3	63.29	Yes	27.25	-36.04
959	10/21/2023	18	4	67.26	Yes	27.25	-40.01
960	10/21/2023	18	5	72.95	Yes	27.25	-45.70
961	10/21/2023	18	6	74.53	Yes	27.25	-47.28
962	10/21/2023	18	7	78.40	Yes	27.25	-51.15
963	10/21/2023	18	8	83.08	Yes	27.25	-55.83
964	10/21/2023	18	9	82.96	Yes	27.25	-55.71
965	10/21/2023	18	10	76.80	Yes	27.25	-49.55
966	10/21/2023	18	11	78.54	Yes	27.25	-51.29
967	10/21/2023	18	12	78.93	Yes	27.25	-51.68
968	10/21/2023	19	1	72.34	Yes	27.31	-45.03
969	10/21/2023	19	2	72.24	Yes	27.31	-44.93
970	10/21/2023	19	3	72.34	Yes	27.31	-45.03
971	10/21/2023	19	4	74.03	Yes	27.31	-46.72
972	10/21/2023	19	5	74.59	Yes	27.31	-47.28
973	10/21/2023	19	6	72.83	Yes	27.31	-45.52
974	10/21/2023	19	7	72.34	Yes	27.31	-45.03
975	10/21/2023	19	8	72.44	Yes	27.31	-45.13
976	10/21/2023	19	9	72.34	Yes	27.31	-45.03
977	10/21/2023	19	10	72.26	Yes	27.31	-44.95
978	10/21/2023	19	11	71.39	Yes	27.31	-44.08
979	10/21/2023	19	12	70.03	Yes	27.31	-42.72
980	10/21/2023	20	1	69.11	Yes	27.25	-41.86
981	10/21/2023	20	2	68.70	Yes	27.25	-41.45
982	10/21/2023	20	3	68.06	Yes	27.25	-40.81
983	10/21/2023	20	4	66.73	Yes	27.25	-39.48
984	10/21/2023	20	5	64.95	Yes	27.25	-37.70
985	10/21/2023	20	6	63.60	Yes	27.25	-36.35
986	10/21/2023	20	7	59.87	Yes	27.25	-32.62

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
987	10/21/2023	20	8	57.17	Yes	27.25	-29.92
988	10/21/2023	20	9	56.35	Yes	27.25	-29.10
989	10/21/2023	20	10	56.93	Yes	27.25	-29.68
990	10/21/2023	20	11	56.93	Yes	27.25	-29.68
991	10/21/2023	20	12	58.55	Yes	27.25	-31.30
992	10/21/2023	21	1	66.81	Yes	27.26	-39.55
993	10/21/2023	21	2	66.52	Yes	27.26	-39.26
994	10/21/2023	21	3	66.40	Yes	27.26	-39.14
995	10/21/2023	21	4	64.70	Yes	27.26	-37.44
996	10/21/2023	21	5	64.70	Yes	27.26	-37.44
997	10/21/2023	21	6	61.84	Yes	27.26	-34.58
998	10/21/2023	21	7	60.66	Yes	27.26	-33.40
999	10/21/2023	21	8	61.40	Yes	27.26	-34.14
1000	10/21/2023	21	9	61.25	Yes	27.26	-33.99
1001	10/21/2023	21	10	62.85	Yes	27.26	-35.59
1002	10/21/2023	21	11	62.71	Yes	27.26	-35.45
1003	10/21/2023	21	12	63.29	Yes	27.26	-36.03
1004	10/21/2023	22	1	72.36	Yes	27.23	-45.13
1005	10/21/2023	22	2	71.71	Yes	27.23	-44.48
1006	10/21/2023	22	3	68.74	Yes	27.23	-41.51
1007	10/21/2023	22	4	67.74	Yes	27.23	-40.51
1008	10/21/2023	22	5	67.43	Yes	27.23	-40.20
1009	10/21/2023	22	6	67.37	Yes	27.23	-40.14
1010	10/22/2023	4	7	35.47	Yes	27.34	-8.13
1011	10/22/2023	4	8	34.50	Yes	27.34	-7.16
1012	10/22/2023	4	9	34.30	Yes	27.34	-6.96
1013	10/22/2023	4	10	33.41	Yes	27.34	-6.07
1014	10/22/2023	4	11	37.58	Yes	27.34	-10.24
1015	10/22/2023	4	12	38.60	Yes	27.34	-11.26
1016	10/22/2023	5	1	39.20	Yes	27.29	-11.91
1017	10/22/2023	5	2	39.26	Yes	27.29	-11.97
1018	10/22/2023	5	3	38.62	Yes	27.29	-11.33
1019	10/22/2023	5	4	38.57	Yes	27.29	-11.28
1020	10/22/2023	5	5	35.55	Yes	27.29	-8.26
1021	10/22/2023	5	6	34.93	Yes	27.29	-7.64
1022	10/22/2023	5	7	34.85	Yes	27.29	-7.56
1023	10/22/2023	5	8	34.62	Yes	27.29	-7.33
1024	10/22/2023	5	9	34.59	Yes	27.29	-7.30

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1025	10/22/2023	5	10	34.97	Yes	27.29	-7.68
1026	10/22/2023	5	11	35.83	Yes	27.29	-8.54
1027	10/22/2023	5	12	35.13	Yes	27.29	-7.84
1028	10/22/2023	6	1	34.79	Yes	27.29	-7.50
1029	10/22/2023	6	2	35.91	Yes	27.29	-8.62
1030	10/22/2023	6	3	34.48	Yes	27.29	-7.19
1031	10/22/2023	6	4	34.25	Yes	27.29	-6.96
1032	10/22/2023	6	5	34.07	Yes	27.29	-6.78
1033	10/22/2023	6	6	33.84	Yes	27.29	-6.55
1034	10/22/2023	6	7	33.98	Yes	27.29	-6.69
1035	10/22/2023	6	8	34.07	Yes	27.29	-6.78
1036	10/22/2023	6	9	34.34	Yes	27.29	-7.05
1037	10/22/2023	6	10	34.30	Yes	27.29	-7.01
1038	10/22/2023	6	11	34.23	Yes	27.29	-6.94
1039	10/22/2023	6	12	34.35	Yes	27.29	-7.06
1040	10/22/2023	7	1	34.39	Yes	28.33	-6.06
1041	10/22/2023	7	2	34.04	Yes	28.33	-5.71
1042	10/22/2023	7	3	34.04	Yes	28.33	-5.71
1043	10/22/2023	7	4	34.50	Yes	28.33	-6.17
1044	10/22/2023	7	5	34.55	Yes	28.33	-6.22
1045	10/22/2023	7	6	34.94	Yes	28.33	-6.61
1046	10/22/2023	7	7	35.79	Yes	28.33	-7.46
1047	10/22/2023	7	8	37.68	Yes	28.33	-9.35
1048	10/22/2023	7	9	37.95	Yes	28.33	-9.62
1049	10/22/2023	7	10	38.04	Yes	28.33	-9.71
1050	10/22/2023	7	11	38.02	Yes	28.33	-9.69
1051	10/22/2023	7	12	38.10	Yes	28.33	-9.77
1052	10/22/2023	8	1	37.68	Yes	27.33	-10.35
1053	10/22/2023	8	2	36.56	Yes	27.33	-9.23
1054	10/22/2023	8	3	35.06	Yes	27.33	-7.73
1055	10/22/2023	8	4	33.08	Yes	27.33	-5.75
1056	10/22/2023	8	5	28.03	Yes	27.33	-0.70
1057	10/22/2023	8	6	17.81	Yes	27.33	9.52
1058	10/22/2023	8	7	17.57	Yes	27.33	9.76
1059	10/22/2023	8	8	16.22	Yes	27.33	11.11
1060	10/22/2023	8	9	14.33	Yes	27.33	13.00
1061	10/22/2023	8	10	11.15	Yes	27.33	16.18
1062	10/22/2023	8	11	7.22	Yes	27.33	20.11

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1063	10/22/2023	8	12	5.64	Yes	27.33	21.69
1064	10/22/2023	9	1	11.68	Yes	27.34	15.66
1065	10/22/2023	9	2	10.86	Yes	27.34	16.48
1066	10/22/2023	9	3	9.55	Yes	27.34	17.79
1067	10/22/2023	9	4	7.06	Yes	27.34	20.28
1068	10/22/2023	9	5	1.06	Yes	27.34	26.28
1069	10/22/2023	9	6	0.13	Yes	27.34	27.21
1070	10/23/2023	18	1	39.37	Yes	24.3	-15.07
1071	10/23/2023	18	2	31.93	Yes	24.3	-7.63
1072	10/23/2023	18	3	38.62	Yes	24.3	-14.32
1073	10/23/2023	18	4	39.08	Yes	24.3	-14.78
1074	10/23/2023	18	5	47.99	Yes	24.3	-23.69
1075	10/23/2023	18	6	50.76	Yes	24.3	-26.46
1076	10/23/2023	18	7	58.20	Yes	24.3	-33.90
1077	10/23/2023	18	8	59.54	Yes	24.3	-35.24
1078	10/23/2023	18	9	63.26	Yes	24.3	-38.96
1079	10/23/2023	18	10	63.91	Yes	24.3	-39.61
1080	10/23/2023	18	11	64.49	Yes	24.3	-40.19
1081	10/23/2023	18	12	65.16	Yes	24.3	-40.86
1082	10/23/2023	19	1	54.20	Yes	27.28	-26.92
1083	10/23/2023	19	2	54.20	Yes	27.28	-26.92
1084	10/23/2023	19	3	55.33	Yes	27.28	-28.05
1085	10/23/2023	19	4	54.99	Yes	27.28	-27.71
1086	10/23/2023	19	5	54.17	Yes	27.28	-26.89
1087	10/23/2023	19	6	54.85	Yes	27.28	-27.57
1088	10/23/2023	19	7	54.46	Yes	27.28	-27.18
1089	10/23/2023	19	8	55.13	Yes	27.28	-27.85
1090	10/23/2023	19	9	54.49	Yes	27.28	-27.21
1091	10/23/2023	19	10	53.31	Yes	27.28	-26.03
1092	10/23/2023	19	11	53.09	Yes	27.28	-25.81
1093	10/23/2023	19	12	51.83	Yes	27.28	-24.55
1094	10/23/2023	20	1	58.80	Yes	27.28	-31.52
1095	10/23/2023	20	2	58.23	Yes	27.28	-30.95
1096	10/23/2023	20	3	57.26	Yes	27.28	-29.98
1097	10/23/2023	20	4	55.87	Yes	27.28	-28.59
1098	10/23/2023	20	5	56.11	Yes	27.28	-28.83
1099	10/23/2023	20	6	56.20	Yes	27.28	-28.92
1100	10/23/2023	20	7	55.40	Yes	27.28	-28.12

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1101	10/23/2023	20	8	54.91	Yes	27.28	-27.63
1102	10/23/2023	20	9	54.21	Yes	27.28	-26.93
1103	10/23/2023	20	10	54.75	Yes	27.28	-27.47
1104	10/23/2023	20	11	55.90	Yes	27.28	-28.62
1105	10/23/2023	20	12	55.51	Yes	27.28	-28.23
1106	10/23/2023	21	1	60.02	Yes	27.3	-32.72
1107	10/23/2023	21	2	60.03	Yes	27.3	-32.73
1108	10/23/2023	21	3	59.13	Yes	27.3	-31.83
1109	10/23/2023	21	4	58.55	Yes	27.3	-31.25
1110	10/23/2023	21	5	58.55	Yes	27.3	-31.25
1111	10/23/2023	21	6	57.85	Yes	27.3	-30.55
1112	10/23/2023	21	7	56.08	Yes	27.3	-28.78
1113	10/23/2023	21	8	56.08	Yes	27.3	-28.78
1114	10/23/2023	21	9	56.01	Yes	27.3	-28.71
1115	10/23/2023	21	10	55.93	Yes	27.3	-28.63
1116	10/23/2023	21	11	55.70	Yes	27.3	-28.40
1117	10/23/2023	21	12	55.17	Yes	27.3	-27.87
1118	10/23/2023	22	1	55.62	Yes	27.3	-28.32
1119	10/23/2023	22	2	55.71	Yes	27.3	-28.41
1120	10/23/2023	22	3	54.90	Yes	27.3	-27.60
1121	10/23/2023	22	4	54.97	Yes	27.3	-27.67
1122	10/23/2023	22	5	55.23	Yes	27.3	-27.93
1123	10/23/2023	22	6	54.97	Yes	27.3	-27.67
1124	10/23/2023	22	7	54.06	Yes	27.3	-26.76
1125	10/23/2023	22	8	52.89	Yes	27.3	-25.59
1126	10/23/2023	22	9	52.18	Yes	27.3	-24.88
1127	10/23/2023	22	10	50.53	Yes	27.3	-23.23
1128	10/23/2023	22	11	50.41	Yes	27.3	-23.11
1129	10/23/2023	22	12	50.25	Yes	27.3	-22.95
1130	10/23/2023	23	1	51.82	Yes	27.34	-24.48
1131	10/23/2023	23	2	50.78	Yes	27.34	-23.44
1132	10/23/2023	23	3	50.46	Yes	27.34	-23.12
1133	10/23/2023	23	4	49.04	Yes	27.34	-21.70
1134	10/23/2023	23	5	48.69	Yes	27.34	-21.35
1135	10/23/2023	23	6	45.97	Yes	27.34	-18.63
1136	10/23/2023	23	7	44.51	Yes	27.34	-17.17
1137	10/23/2023	23	8	43.54	Yes	27.34	-16.20
1138	10/23/2023	23	9	43.35	Yes	27.34	-16.01

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1139	10/24/2023	11	3	32.03	Yes	30.72	-1.31
1140	10/24/2023	11	4	32.03	Yes	30.72	-1.31
1141	10/24/2023	11	5	31.55	Yes	30.72	-0.83
1142	10/24/2023	11	6	31.71	Yes	30.72	-0.99
1143	10/24/2023	11	7	34.12	Yes	30.72	-3.40
1144	10/24/2023	11	8	33.82	Yes	30.72	-3.10
1145	10/24/2023	11	9	33.11	Yes	30.72	-2.39
1146	10/24/2023	11	10	31.71	Yes	30.72	-0.99
1147	10/24/2023	11	11	32.03	Yes	30.72	-1.31
1148	10/24/2023	11	12	32.73	Yes	30.72	-2.01
1149	10/24/2023	12	1	33.06	Yes	30.74	-2.32
1150	10/24/2023	12	2	32.29	Yes	30.74	-1.55
1151	10/24/2023	12	3	30.81	Yes	30.74	-0.07
1152	10/24/2023	12	4	32.55	Yes	30.74	-1.81
1153	10/24/2023	12	5	32.11	Yes	30.74	-1.37
1154	10/24/2023	12	6	32.89	Yes	30.74	-2.15
1155	10/24/2023	12	7	33.17	Yes	30.74	-2.43
1156	10/24/2023	12	8	33.02	Yes	30.74	-2.28
1157	10/24/2023	12	9	32.90	Yes	30.74	-2.16
1158	10/24/2023	12	10	32.72	Yes	30.74	-1.98
1159	10/24/2023	12	11	30.75	Yes	30.74	-0.01
1160	10/24/2023	12	12	32.30	Yes	30.74	-1.56
1161	10/24/2023	13	1	30.52	Yes	31.67	1.15
1162	10/24/2023	13	2	30.76	Yes	31.67	0.91
1163	10/24/2023	13	3	29.10	Yes	31.67	2.57
1164	10/24/2023	13	4	31.28	Yes	31.67	0.39
1165	10/24/2023	13	5	32.20	Yes	31.67	-0.53
1166	10/24/2023	13	6	31.84	Yes	31.67	-0.17
1167	10/24/2023	13	7	30.95	Yes	31.67	0.72
1168	10/24/2023	13	8	31.67	Yes	31.67	0.00
1169	10/24/2023	13	9	31.84	Yes	31.67	-0.17
1170	10/24/2023	13	10	31.89	Yes	31.67	-0.22
1171	10/24/2023	13	11	31.62	Yes	31.67	0.05
1172	10/24/2023	13	12	31.82	Yes	31.67	-0.15
1173	10/24/2023	14	1	32.33	Yes	31.74	-0.59
1174	10/24/2023	14	2	32.58	Yes	31.74	-0.84
1175	10/24/2023	14	3	32.84	Yes	31.74	-1.10
1176	10/24/2023	14	4	33.13	Yes	31.74	-1.39

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1177	10/24/2023	14	5	32.32	Yes	31.74	-0.58
1178	10/24/2023	14	6	33.33	Yes	31.74	-1.59
1179	10/24/2023	14	7	32.85	Yes	31.74	-1.11
1180	10/24/2023	14	8	31.94	Yes	31.74	-0.20
1181	10/24/2023	14	9	33.44	Yes	31.74	-1.70
1182	10/24/2023	14	10	36.00	Yes	31.74	-4.26
1183	10/24/2023	14	11	36.00	Yes	31.74	-4.26
1184	10/24/2023	14	12	36.00	Yes	31.74	-4.26
1185	10/24/2023	15	1	31.27	Yes	30.74	-0.53
1186	10/24/2023	15	2	30.67	Yes	30.74	0.07
1187	10/24/2023	15	3	30.72	Yes	30.74	0.02
1188	10/24/2023	15	4	30.74	Yes	30.74	0.00
1189	10/24/2023	15	5	29.93	Yes	30.74	0.81
1190	10/24/2023	15	6	30.74	Yes	30.74	0.00
1191	10/24/2023	15	7	30.50	Yes	30.74	0.24
1192	10/24/2023	15	8	30.36	Yes	30.74	0.38
1193	10/24/2023	15	9	29.77	Yes	30.74	0.97
1194	10/24/2023	15	10	32.59	Yes	30.74	-1.85
1195	10/24/2023	15	11	30.79	Yes	30.74	-0.05
1196	10/24/2023	15	12	31.04	Yes	30.74	-0.30
1197	10/24/2023	16	1	33.65	Yes	30.75	-2.90
1198	10/24/2023	16	2	34.81	Yes	30.75	-4.06
1199	10/24/2023	16	3	33.07	Yes	30.75	-2.32
1200	10/24/2023	16	4	34.54	Yes	30.75	-3.79
1201	10/24/2023	16	5	34.44	Yes	30.75	-3.69
1202	10/24/2023	16	6	36.35	Yes	30.75	-5.60
1203	10/24/2023	16	7	31.14	Yes	30.75	-0.39
1204	10/24/2023	16	8	34.68	Yes	30.75	-3.93
1205	10/24/2023	16	9	34.41	Yes	30.75	-3.66
1206	10/24/2023	16	10	34.48	Yes	30.75	-3.73
1207	10/24/2023	16	11	32.77	Yes	30.75	-2.02
1208	10/24/2023	16	12	31.74	Yes	30.75	-0.99
1209	10/24/2023	17	1	31.14	Yes	30.68	-0.46
1210	10/24/2023	17	2	31.36	Yes	30.68	-0.68
1211	10/24/2023	17	3	31.52	Yes	30.68	-0.84
1212	10/24/2023	17	4	31.22	Yes	30.68	-0.54
1213	10/24/2023	17	5	34.65	Yes	30.68	-3.97
1214	10/24/2023	17	6	38.36	Yes	30.68	-7.68

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1215	10/24/2023	17	7	39.91	Yes	30.68	-9.23
1216	10/24/2023	17	8	42.44	Yes	30.68	-11.76
1217	10/24/2023	17	9	51.43	Yes	30.68	-20.75
1218	10/24/2023	17	10	69.52	Yes	30.68	-38.84
1219	10/24/2023	17	11	73.68	Yes	30.68	-43.00
1220	10/24/2023	17	12	76.74	Yes	30.68	-46.06
1221	10/24/2023	18	1	55.65	Yes	30.76	-24.89
1222	10/24/2023	18	2	57.86	Yes	30.76	-27.10
1223	10/24/2023	18	3	61.57	Yes	30.76	-30.81
1224	10/24/2023	18	4	67.86	Yes	30.76	-37.10
1225	10/24/2023	18	5	72.13	Yes	30.76	-41.37
1226	10/24/2023	18	6	76.52	Yes	30.76	-45.76
1227	10/24/2023	18	7	80.36	Yes	30.76	-49.60
1228	10/24/2023	18	8	81.08	Yes	30.76	-50.32
1229	10/24/2023	18	9	81.17	Yes	30.76	-50.41
1230	10/24/2023	18	10	81.21	Yes	30.76	-50.45
1231	10/24/2023	18	11	85.10	Yes	30.76	-54.34
1232	10/24/2023	18	12	85.54	Yes	30.76	-54.78
1233	10/24/2023	19	1	75.81	Yes	30.75	-45.06
1234	10/24/2023	19	2	75.01	Yes	30.75	-44.26
1235	10/24/2023	19	3	75.01	Yes	30.75	-44.26
1236	10/24/2023	19	4	73.40	Yes	30.75	-42.65
1237	10/24/2023	19	5	75.24	Yes	30.75	-44.49
1238	10/24/2023	19	6	75.45	Yes	30.75	-44.70
1239	10/24/2023	19	7	77.55	Yes	30.75	-46.80
1240	10/24/2023	19	8	77.56	Yes	30.75	-46.81
1241	10/24/2023	19	9	77.56	Yes	30.75	-46.81
1242	10/24/2023	19	10	77.74	Yes	30.75	-46.99
1243	10/24/2023	19	11	77.55	Yes	30.75	-46.80
1244	10/24/2023	19	12	77.56	Yes	30.75	-46.81

Appendix C: Exceptional Dispatch Bid Mitigation Analysis

In October 2023, 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 \$37,143. Without the exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches would be \$53,871. The cost saving from the exceptional dispatch bid mitigation was \$16,728.

Table 10: Bid Mitigation Analysis for October 2023

Type	Number of Resources	Costs without Bid Mitigation	Costs with Bid Mitigation	Cost Saving
TMODEL	1	\$7	\$5	\$2
NONTMOD	6	\$41,072	\$35,356	\$5,716
SYSEMR	1	\$12,793	\$1,782	\$11,011
Total	8	\$53,872	\$37,144	\$16,728