Exceptional Dispatch Report

Table 2: June 2020

Market Quality and Renewable Integration   August 17, 2020

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

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 June 2020.

This report contains a price impact analysis as prescribed by FERC in its September 2 order. The price impact analysis for the month of June is presented in Appendix B. This report also includes mitigation analysis for June 2020 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 June is presented in Appendix C.

The Nature of Exceptional Dispatch

The CAISO can issue exceptional dispatch instructions for a resource as a pre-day-ahead unit commitment, a post day-ahead unit commitment or a real-time exceptional dispatch. A pre-day-ahead unit commitment is an exceptional dispatch instruction committing a resource at or above its physical minimum (Pmin) operating level in the day-ahead market. A post-day-ahead unit commitment is an exceptional dispatch instruction committing a resource at or above its (Pmin) operating level in the real-time market. A real-time exceptional dispatch instructs a resource to operate at or above its physical minimum operating point. A real-time exceptional dispatch above the resource's day-ahead award is an incremental exceptional dispatch instruction and a real-time exceptional dispatch below the day-ahead award is considered a decremental dispatch instruction. The CAISO issues exceptional dispatch instructions to maintain the reliability of the grid when the market software cannot do so. Whenever the CAISO issues an exceptional dispatch instruction, the operator logs the dispatch and the associated reason. Reliability requirements are calculated for both local area and the system wide needs, and are classified into various requirements including local generation, transmission management, non-modeled transmission outages, ramping and intertie emergency assistance. Whenever the CAISO issues an exceptional dispatch instruction, the operators log these instructions and the associated reason for each instruction.

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

Additional reasons for exceptional dispatch instructions in 2020 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 June, 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 June 2020. In addition, it contains volume (MWh) and cost information. Each entry in Table 1 is a summary of exceptional dispatches classified by (1) the reason for the exceptional dispatch; (2) the location of the resource by Participating Transmission Owner (PTO) service area; (3) the Local Reliability Area (LRA) where applicable; (4) the market in which the exceptional dispatch occurred (day-ahead vs. real-time); and (5) the date of the exceptional dispatch. For each classification the following information is provided: (1) Megawatts (MW); (2) Commitment; (3) Inc or Dec; (4) Hours; (5) Begin Time; (6) End Time; (7) Total Volume (MWh); (8) Min Load Cost; (9) Start Up Cost; (10) CC6470; (11) ED Volume (MWh INC/DEC); (12) CC6470 INC; (13) CC6470 DEC; (14) CC6482; (15) CC6488; and (16) CC6620. Each column is defined:

---

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

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

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

---

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

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

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

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

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

Exceptional dispatches issued for the following reasons accounted for approximately 84 percent of the total exceptional dispatches during the reporting period: planned transmission outages, reliability assement, unit testing, and software limitation. Exceptional dispatches with the reason "Reliability Assessment" were due to Real Time Contingency Analysis, Voltage Stability Analysis, and operating procedure number 7110 (along with 7230, 7320, 7450, 7720, and 7910). Reliability Assessment is the reason as explained in the operator procedure 2330C[7] that encompasses Control Point (CP), Interconnection Reliability Operating Limit (IROL), System Operating Limit (SOL) and congestion related EDs. This reason is used to mitigate reliability issues identified through the real – time assessment tools such as Real Time Contingency Analysis (RTCA), Voltage Stability Analysis (VSA), Dynamic Stability Analysis (DSA) and/or Operating Procedure (OP) or offline study.

---

1)   [7] The operator procedure 2330C - **http://www.caiso.com/Documents/2330C.pdf**

Table 1: Exceptional Dispatches in June 2020

													California Independent System Operator Corporation **Exceptional Dispatch Report** **August 17, 2020**								
												Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020									
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	PGAE	NA	6/1/2020	196	No	INC	3	15:45	18:00	-23.78	9328.08	0.00	464.43	34.02	0.00	0.00	0.00	0.00	0.00
2	RT	Fast Start Unit Management	SCE	Big Creek-Ventura	6/20/2020	0	No	INC	1	5:45	6:45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	RT	Fast Start Unit Management	SCE	LA Basin	6/4/2020	0	No	INC	1	23:15	0:00	-34.67	482.56	0.00	0.00	-69.34	0.00	0.00	0.00	0.00	0.00
4	RT	Fast Start Unit Management	SCE	LA Basin	6/5/2020	0	No	INC	1	0:00	0:15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	RT	Fast Start Unit Management	SCE	LA Basin	6/8/2020	0	No	INC	1	23:00	23:40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	RT	Fast Start Unit Management	SCE	LA Basin	6/13/2020	0	No	INC	2	1:00	2:05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	6/2/2020	50	No	INC	10	14:00	0:00	114.73	56773.10	86795.23	-45452.68	0.00	0.00	0.00	0.00	0.00	0.00
8	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	6/3/2020	50	No	INC	11	13:45	0:00	-244.78	156157.79	0.00	44075.71	2.25	-46.34	0.00	0.00	0.00	0.00
9	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	6/4/2020	50	No	INC	8	0:00	8:00	343.75	49323.84	0.00	-9298.30	0.00	0.00	0.00	0.00	0.00	0.00
10	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	6/10/2020	200	No	INC	2	15:55	17:00	-24.97	7385.79	0.00	3588.15	0.07	-0.63	0.00	-1.62	0.00	0.00
11	RT	Load Forecast Uncertainty	SCE	LA Basin	6/1/2020	20	No	INC	10	14:00	0:00	43.41	28510.70	28929.76	-10463.84	0.00	0.00	0.00	0.00	0.00	0.00
12	RT	Load Forecast Uncertainty	SCE	LA Basin	6/2/2020	20 - 70	No	INC	24	0:00	0:00	4.83	48125.50	69446.17	-253.60	0.00	0.00	0.00	0.00	0.00	0.00
13	RT	Load Forecast Uncertainty	SCE	LA Basin	6/3/2020	70	No	DEC	2	20:00	22:00	-25.62	-1348.01	0.00	691.06	0.00	0.00	0.00	0.00	0.00	0.00
14	RT	Load Forecast Uncertainty	SCE	LA Basin	6/3/2020	70	No	INC	2	22:00	0:00	0.06	10081.21	0.00	-10.56	0.00	0.00	0.00	0.00	0.00	0.00
15	RT	Load Forecast Uncertainty	SCE	LA Basin	6/4/2020	70	No	INC	24	0:00	0:00	-5.12	169507.79	0.00	216.23	8.79	-174.96	0.00	0.00	0.00	0.00
16	RT	Market Disruption	PGAE	Fresno	6/4/2020	83	No	INC	2	0:10	1:45	52.40	0.00	0.00	-1746.42	0.00	0.00	0.00	0.00	0.00	0.00
17	RT	Market Disruption	SCE	LA Basin	6/11/2020	500	No	INC	1	11:10	11:20	12.80	0.00	0.00	-254.28	12.80	-254.28	0.00	-37.70	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
18	RT	Other Reliability Requirement	SDGE	San Diego-IV	6/26/2020	50	No	INC	3	19:40	22:00	-41.05	5063.31	325.81	-2588.71	0.00	0.00	0.00	0.00	0.00	0.00
19	RT	Planned Transmission Outage	PGAE	Bay Area	6/16/2020	180	No	INC	3	15:00	18:00	0.00	14958.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	RT	Planned Transmission Outage	PGAE	Humboldt	6/2/2020	45	No	DEC	7	14:00	21:00	2.58	-3342.90	0.00	-73.86	0.00	0.00	0.00	0.00	0.00	0.00
21	RT	Planned Transmission Outage	PGAE	Humboldt	6/2/2020	30 - 45	No	INC	17	7:00	0:00	4.11	8868.40	0.00	-99.75	0.00	0.00	0.00	0.00	0.00	0.00
22	RT	Planned Transmission Outage	PGAE	Humboldt	6/3/2020	44	No	DEC	11	11:00	22:00	-0.57	-4115.76	0.00	69.21	0.00	0.00	0.00	0.00	-1884.02	0.00
23	RT	Planned Transmission Outage	PGAE	Humboldt	6/3/2020	44 - 60	No	INC	24	0:00	0:00	0.35	10420.76	0.00	-158.26	-4.54	0.00	54.59	0.00	-26.48	0.00
24	RT	Planned Transmission Outage	PGAE	Humboldt	6/4/2020	30 - 45	No	DEC	18	4:00	22:00	-4.64	-14461.34	0.00	190.62	0.00	0.00	0.00	0.00	-1827.31	0.00
25	RT	Planned Transmission Outage	PGAE	Humboldt	6/4/2020	30 - 45	No	INC	24	0:00	0:00	0.96	29327.88	0.00	-62.81	-6.28	0.00	79.58	0.00	-28.44	0.00
26	RT	Planned Transmission Outage	PGAE	Humboldt	6/5/2020	30	No	DEC	1	0:00	1:00	0.64	0.00	0.00	-13.48	0.00	0.00	0.00	0.00	-22.88	0.00
27	RT	Planned Transmission Outage	PGAE	Humboldt	6/5/2020	30 - 45	No	INC	24	0:00	0:00	3.43	51514.67	0.00	-137.38	-6.70	0.00	71.81	0.00	-112.17	0.00
28	RT	Planned Transmission Outage	PGAE	Humboldt	6/6/2020	30 - 45	No	INC	24	0:00	0:00	-3.83	22688.33	0.00	69.14	-3.10	0.00	27.67	0.00	-713.71	0.00
29	RT	Planned Transmission Outage	PGAE	Humboldt	6/7/2020	15	No	DEC	10	14:00	0:00	0.48	0.00	0.00	-13.28	0.00	0.00	0.00	0.00	-39.06	0.00
30	RT	Planned Transmission Outage	PGAE	Humboldt	6/7/2020	15 - 30	No	INC	24	0:00	0:00	-5.68	21689.46	0.00	-258.92	3.75	11.12	0.00	0.00	-700.91	0.00
31	RT	Planned Transmission Outage	PGAE	Humboldt	6/8/2020	15 - 45	No	INC	24	0:00	0:00	15.79	37243.06	0.00	-180.63	-0.30	-2.26	27.06	0.00	-544.35	0.00
32	RT	Planned Transmission Outage	PGAE	Humboldt	6/9/2020	30 - 45	No	INC	24	0:00	0:00	1.40	41735.32	0.00	45.59	-9.42	-9.08	130.22	0.00	-100.70	0.00
33	RT	Planned Transmission Outage	PGAE	Humboldt	6/10/2020	45	No	DEC	6	15:00	21:00	-0.92	0.00	0.00	22.39	-3.81	0.00	38.54	0.00	-827.76	0.00
34	RT	Planned Transmission Outage	PGAE	Humboldt	6/10/2020	28 - 45	No	INC	24	0:00	0:00	6.02	32356.99	0.00	-98.91	-7.91	0.00	74.57	0.00	-11.13	0.00
35	RT	Planned Transmission Outage	PGAE	Humboldt	6/11/2020	28 - 45	No	DEC	7	15:00	22:00	6.06	-4665.64	0.00	-210.91	-4.56	0.00	67.81	0.00	-191.41	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
36	RT	Planned Transmission Outage	PGAE	Humboldt	6/11/2020	28 - 45	No	INC	24	0:00	0:00	0.17	24611.68	0.00	-45.51	0.00	0.00	0.00	0.00	0.00	0.00
37	RT	Planned Transmission Outage	PGAE	Humboldt	6/12/2020	14 - 42	No	INC	24	0:00	0:00	39.78	40870.50	0.00	-1078.72	-2.33	0.00	25.62	0.00	-1.10	0.00
38	RT	Planned Transmission Outage	PGAE	Humboldt	6/13/2020	14	No	DEC	5	15:30	20:00	-6.74	0.00	0.00	-170.86	0.00	0.00	0.00	0.00	-87.46	0.00
39	RT	Planned Transmission Outage	PGAE	Humboldt	6/13/2020	14 - 42	No	INC	20	0:00	20:00	0.06	19826.10	0.00	-173.46	3.26	-0.17	0.00	0.00	-16.18	0.00
40	RT	Planned Transmission Outage	PGAE	Humboldt	6/15/2020	14	No	DEC	2	6:00	7:25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41	RT	Planned Transmission Outage	PGAE	Humboldt	6/15/2020	28	No	INC	19	5:50	0:00	0.03	18976.41	0.00	-60.08	0.24	0.00	0.00	0.00	0.00	0.00
42	RT	Planned Transmission Outage	PGAE	Humboldt	6/16/2020	28	No	INC	24	0:00	0:00	-23.01	19153.22	0.00	115.80	0.00	0.00	0.00	0.00	0.00	0.00
43	RT	Planned Transmission Outage	PGAE	Humboldt	6/17/2020	28	No	DEC	6	16:00	22:00	-0.99	0.00	0.00	-31.88	0.00	0.00	0.00	0.00	0.00	0.00
44	RT	Planned Transmission Outage	PGAE	Humboldt	6/17/2020	28 - 45	No	INC	24	0:00	0:00	-34.48	23520.16	0.00	-69.64	0.00	0.00	0.00	0.00	0.00	0.00
45	RT	Planned Transmission Outage	PGAE	Humboldt	6/18/2020	30	No	DEC	4	17:00	21:00	4.72	274.04	0.00	-166.60	0.00	0.00	0.00	0.00	0.00	0.00
46	RT	Planned Transmission Outage	PGAE	Humboldt	6/18/2020	28 - 45	No	INC	24	0:00	0:00	-2.82	28088.91	0.00	31.63	0.00	0.00	0.00	0.00	0.00	0.00
47	RT	Planned Transmission Outage	PGAE	Humboldt	6/19/2020	30 - 45	No	INC	24	0:00	0:00	-3.33	39676.01	0.00	164.82	-6.39	0.00	98.79	0.00	-55.32	0.00
48	RT	Planned Transmission Outage	PGAE	Humboldt	6/20/2020	28 - 45	No	INC	24	0:00	0:00	-6.37	38791.37	0.00	73.78	0.00	0.00	0.00	0.00	0.00	0.00
49	RT	Planned Transmission Outage	PGAE	Humboldt	6/21/2020	14 - 28	No	DEC	18	0:00	17:40	0.68	-609.08	0.00	-14.30	0.00	0.00	0.00	0.00	0.00	0.00
50	RT	Planned Transmission Outage	PGAE	Humboldt	6/21/2020	14 - 28	No	INC	24	0:00	0:00	6.84	21716.03	0.00	-177.12	0.00	0.00	0.00	0.00	0.00	0.00
51	RT	Planned Transmission Outage	PGAE	Humboldt	6/22/2020	14 - 28	No	DEC	21	0:00	20:15	-2.06	0.00	0.00	54.94	0.00	0.00	0.00	0.00	0.00	0.00
52	RT	Planned Transmission Outage	PGAE	Humboldt	6/22/2020	14 - 42	No	INC	19	1:00	20:00	52.05	21760.95	0.00	-630.35	0.00	0.00	0.00	0.00	0.00	0.00
53	RT	Planned Transmission Outage	PGAE	Humboldt	6/27/2020	15	No	DEC	5	1:15	6:15	0.84	0.00	0.00	-30.03	0.00	0.00	0.00	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
54	RT	Planned Transmission Outage	PGAE	Humboldt	6/27/2020	15 - 45	No	INC	22	1:15	23:15	160.90	29398.13	0.00	-5414.03	131.27	-4354.99	0.00	0.00	0.00	0.00
55	RT	Planned Transmission Outage	PGAE	Humboldt	6/28/2020	30 - 45	No	INC	5	9:55	14:30	-4.08	4442.40	0.00	27.82	6.37	-2.10	0.00	0.00	-25.88	0.00
56	RT	Planned Transmission Outage	PGAE	Humboldt	6/29/2020	14	No	DEC	6	16:00	22:00	-0.35	-2833.84	0.00	6.52	0.00	0.00	0.00	0.00	0.00	0.00
57	RT	Planned Transmission Outage	PGAE	Humboldt	6/29/2020	14 - 42	No	INC	18	6:20	0:00	1.24	11454.39	0.00	-108.67	0.00	0.00	0.00	0.00	0.00	0.00
58	RT	Planned Transmission Outage	PGAE	Humboldt	6/30/2020	14 - 45	No	INC	24	0:00	0:00	8.22	33206.64	0.00	-459.17	0.00	0.00	0.00	0.00	0.00	0.00
59	RT	Planned Transmission Outage	PGAE	NCNB	6/22/2020	70 - 71	No	DEC	12	1:20	12:30	-23.51	0.00	0.00	-597.05	-10.50	0.00	-77.49	0.00	-81.11	0.00
60	RT	Planned Transmission Outage	PGAE	Sierra	6/2/2020	35	No	INC	5	7:30	12:00	4.38	6238.49	207.69	-95.20	7.50	-65.87	0.00	0.00	-1696.92	0.00
61	RT	Planned Transmission Outage	PGAE	Sierra	6/17/2020	13 - 30	No	DEC	5	17:55	22:15	-23.75	0.00	0.00	379.57	-55.83	0.00	532.12	0.00	-702.87	0.00
62	RT	Planned Transmission Outage	PGAE	Sierra	6/21/2020	10	No	DEC	1	18:00	18:15	-6.28	0.00	0.00	109.97	-9.93	0.00	109.97	0.00	0.00	0.00
63	RT	Planned Transmission Outage	PGAE	Sierra	6/27/2020	0 - 40	No	DEC	5	17:10	22:00	-32.09	-3120.01	0.00	1162.96	-38.03	0.00	812.64	0.00	-4595.24	0.00
64	RT	Planned Transmission Outage	PGAE	Stockton	6/1/2020	88.8	No	INC	9	7:00	16:00	14.05	25995.78	2714.65	-311.53	0.00	0.00	0.00	0.00	0.00	0.00
65	RT	Planned Transmission Outage	PGAE	Stockton	6/2/2020	88.8	No	INC	6	7:00	13:00	2.00	17559.72	2516.02	-46.05	0.00	0.00	0.00	0.00	0.00	0.00
66	RT	Planned Transmission Outage	PGAE	Stockton	6/3/2020	88.8	No	DEC	1	1:40	2:00	9.88	0.00	0.00	-173.10	0.00	0.00	0.00	0.00	0.00	0.00
67	RT	Planned Transmission Outage	PGAE	Stockton	6/3/2020	88.8	No	INC	9	2:00	11:00	-36.03	28803.38	0.00	1010.87	0.00	0.00	0.00	0.00	0.00	0.00
68	RT	Planned Transmission Outage	PGAE	Stockton	6/5/2020	88.8	No	INC	21	3:00	0:00	58.86	62109.52	3408.85	-1324.08	0.00	0.00	0.00	0.00	0.00	0.00
69	RT	Planned Transmission Outage	PGAE	Stockton	6/6/2020	88.8	No	INC	14	0:00	13:15	0.00	38671.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	RT	Planned Transmission Outage	PGAE	Stockton	6/8/2020	89	No	INC	18	6:00	0:00	-27.61	54677.53	10516.30	782.55	0.00	0.00	0.00	0.00	-50.96	0.00
71	RT	Planned Transmission Outage	PGAE	Stockton	6/9/2020	88.8	No	INC	9	6:00	15:00	1.42	26958.93	0.00	1.75	0.00	0.00	0.00	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
72	RT	Planned Transmission Outage	PGAE	NA	6/6/2020	5 - 8	No	DEC	3	11:35	14:00	-4.38	0.00	0.00	-49.79	-15.31	0.00	-84.49	0.00	0.00	0.00
73	RT	Planned Transmission Outage	PGAE	NA	6/24/2020	5	No	INC	1	14:00	15:00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
74	RT	Planned Transmission Outage	PGAE	NA	6/25/2020	5	No	INC	1	14:00	15:00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	RT	Planned Transmission Outage	SDGE	San Diego-IV	6/6/2020	22 - 24	No	INC	11	9:35	20:00	-3.73	0.00	0.00	-47.83	0.00	0.00	0.00	0.00	0.00	0.00
76	RT	Pump Management	PGAE	Fresno	6/17/2020	0	No	INC	1	17:00	18:00	67.83	0.00	0.00	104.15	0.00	0.00	0.00	0.00	0.00	0.00
77	RT	Ramping Capacity	SCE	Big Creek-Ventura	6/3/2020	405	No	INC	6	16:45	22:00	-342.15	108988.24	0.00	49428.87	2.25	-46.34	0.00	0.00	0.00	0.00
78	RT	Ramping Capacity	SCE	LA Basin	6/3/2020	240	No	DEC	2	18:00	20:00	-3.37	-11392.08	0.00	2816.75	0.00	0.00	0.00	0.00	0.00	0.00
79	RT	Ramping Capacity	SCE	LA Basin	6/3/2020	190 - 240	No	INC	7	13:55	20:00	40.34	4293.79	0.00	-8764.63	141.80	-2908.77	0.00	0.00	0.00	0.00
80	RT	Ramping Capacity	SCE	LA Basin	6/4/2020	190 - 240.1	No	INC	8	15:00	22:30	-15.73	73774.98	0.00	388.69	10.58	-213.62	0.00	0.00	0.00	0.00
81	RT	Reliability Assessment	PGAE	Bay Area	6/3/2020	0 - 244	No	DEC	4	16:05	20:00	-66.42	-1679.28	0.00	779.14	-80.00	0.00	0.00	0.00	0.00	0.00
82	RT	Reliability Assessment	PGAE	Bay Area	6/4/2020	20	No	DEC	5	16:00	21:00	-41.12	-3449.61	739.23	1057.39	0.00	0.00	0.00	0.00	0.00	0.00
83	RT	Reliability Assessment	PGAE	Bay Area	6/4/2020	20	No	INC	9	15:20	0:00	-4.10	4532.12	184.81	327.34	0.00	0.00	0.00	0.00	0.00	0.00
84	RT	Reliability Assessment	PGAE	Bay Area	6/5/2020	20	No	INC	1	0:00	0:30	0.00	685.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	RT	Reliability Assessment	PGAE	Bay Area	6/24/2020	290	No	INC	6	7:00	13:00	-185.80	54221.26	0.00	2915.59	0.00	0.00	0.00	0.00	0.00	0.00
86	RT	Reliability Assessment	PGAE	Bay Area	6/25/2020	290	No	INC	7	8:00	15:00	-62.61	58359.04	0.00	543.16	5.10	-71.60	0.00	0.00	0.00	0.00
87	RT	Reliability Assessment	PGAE	Fresno	6/26/2020	83	No	INC	1	23:00	0:00	17.29	0.00	0.00	-353.89	0.00	0.00	0.00	0.00	0.00	0.00
88	RT	Reliability Assessment	PGAE	Fresno	6/27/2020	83	No	INC	3	0:00	3:00	6.92	6908.56	0.00	-115.48	0.00	0.00	0.00	0.00	0.00	0.00
89	RT	Reliability Assessment	PGAE	Humboldt	6/1/2020	15	No	DEC	23	0:00	23:00	0.97	0.00	0.00	-20.78	-0.53	0.00	0.00	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
90	RT	Reliability Assessment	PGAE	Humboldt	6/1/2020	15 - 30	No	INC	24	0:00	0:00	2.83	24181.54	0.00	-107.39	-1.17	0.00	5.52	0.00	0.00	0.00
91	RT	Reliability Assessment	PGAE	Humboldt	6/2/2020	15 - 30	No	DEC	19	2:45	21:00	0.45	-6251.86	0.00	7.38	0.50	-5.31	0.00	0.00	0.00	0.00
92	RT	Reliability Assessment	PGAE	Humboldt	6/2/2020	15 - 45	No	INC	24	0:00	0:00	7.89	17307.69	0.00	-179.76	0.00	0.00	0.00	0.00	0.00	0.00
93	RT	Reliability Assessment	PGAE	Humboldt	6/3/2020	30 - 44	No	DEC	9	13:00	22:00	0.36	-11362.83	0.00	71.30	1.89	-55.21	0.00	0.00	0.00	0.00
94	RT	Reliability Assessment	PGAE	Humboldt	6/3/2020	30 - 60	No	INC	24	0:00	0:00	-0.90	8953.00	0.00	14.81	-1.70	-15.03	1.91	0.00	0.00	0.00
95	RT	Reliability Assessment	PGAE	Humboldt	6/13/2020	14	No	DEC	4	20:00	0:00	-0.02	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00
96	RT	Reliability Assessment	PGAE	Humboldt	6/13/2020	14	No	INC	3	20:00	23:00	-0.07	0.00	0.00	1.72	0.00	0.00	0.00	0.00	0.00	0.00
97	RT	Reliability Assessment	PGAE	Humboldt	6/14/2020	14	No	DEC	24	0:00	0:00	0.00	0.00	891.61	4.08	0.00	0.00	0.00	0.00	0.00	0.00
98	RT	Reliability Assessment	PGAE	Humboldt	6/14/2020	14	No	INC	2	7:00	8:30	-0.24	0.00	0.00	-2.10	0.00	0.00	0.00	0.00	0.00	0.00
99	RT	Reliability Assessment	PGAE	Humboldt	6/15/2020	14	No	DEC	6	0:00	6:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	RT	Reliability Assessment	PGAE	Humboldt	6/22/2020	28 - 42	No	INC	5	19:55	0:00	1.20	4460.32	0.00	-37.23	0.00	0.00	0.00	0.00	0.00	0.00
101	RT	Reliability Assessment	PGAE	Humboldt	6/23/2020	28 - 42	No	DEC	21	0:00	21:00	3.39	0.00	0.00	-118.82	0.00	0.00	0.00	0.00	0.00	0.00
102	RT	Reliability Assessment	PGAE	Humboldt	6/23/2020	28 - 78	No	INC	24	0:00	0:00	8.52	48790.28	0.00	-424.44	0.00	0.00	0.00	0.00	0.00	0.00
103	RT	Reliability Assessment	PGAE	Humboldt	6/24/2020	30 - 64	No	INC	24	0:00	0:00	81.04	42655.76	0.00	-1868.05	61.02	-1390.66	0.00	0.00	0.00	0.00
104	RT	Reliability Assessment	PGAE	Humboldt	6/25/2020	15 - 30	No	DEC	22	0:00	22:00	3.28	-2176.10	89.13	-40.30	0.00	0.00	0.00	0.00	0.00	0.00
105	RT	Reliability Assessment	PGAE	Humboldt	6/25/2020	15 - 56	No	INC	24	0:00	0:00	-11.05	17954.25	178.26	2016.06	0.00	0.00	0.00	0.00	0.00	0.00
106	RT	Reliability Assessment	PGAE	Humboldt	6/26/2020	28 - 30	No	INC	24	0:00	0:00	17.55	26968.48	0.00	-542.28	0.00	0.00	0.00	0.00	0.00	0.00
107	RT	Reliability Assessment	PGAE	Humboldt	6/27/2020	15	No	DEC	23	1:15	0:00	-0.11	0.00	0.00	1.16	0.00	0.00	0.00	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commit ment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
108	RT	Reliability Assessment	PGAE	Humboldt	6/27/2020	15 - 30	No	INC	24	0:00	0:00	-3.47	4355.27	0.00	44.84	0.00	0.00	0.00	0.00	0.00	0.00
109	RT	Reliability Assessment	PGAE	Humboldt	6/28/2020	15	No	DEC	8	0:00	8:00	0.09	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00
110	RT	Reliability Assessment	PGAE	Humboldt	6/28/2020	15 - 30	No	INC	24	0:00	0:00	1.05	5618.37	0.00	10.73	1.93	-0.63	0.00	0.00	-5.49	0.00
111	RT	Reliability Assessment	PGAE	Humboldt	6/29/2020	15	No	DEC	8	0:00	7:05	-2.02	130.66	0.00	60.17	0.00	0.00	0.00	0.00	0.00	0.00
112	RT	Reliability Assessment	PGAE	Humboldt	6/29/2020	28 - 42	No	INC	1	7:05	8:00	3.50	261.32	0.00	-66.16	0.00	0.00	0.00	0.00	0.00	0.00
113	RT	Reliability Assessment	PGAE	Kern	6/4/2020	32	No	INC	7	16:50	23:00	37.46	0.00	0.00	-954.81	0.00	0.00	0.00	0.00	0.00	0.00
114	RT	Reliability Assessment	PGAE	Kern	6/23/2020	32	No	INC	2	17:45	19:00	0.05	1475.07	1145.44	-1.43	0.00	0.00	0.00	0.00	0.00	0.00
115	RT	Reliability Assessment	PGAE	Kern	6/24/2020	32	No	INC	10	12:15	22:00	0.01	11257.54	4772.99	5.39	0.00	0.00	0.00	0.00	0.00	0.00
116	RT	Reliability Assessment	PGAE	Kern	6/25/2020	32	No	INC	9	15:00	0:00	1.74	18931.77	9380.11	-47.36	0.00	0.00	0.00	0.00	0.00	0.00
117	RT	Reliability Assessment	PGAE	Kern	6/26/2020	32	No	INC	24	0:00	0:00	0.71	24449.17	9347.70	-17.85	0.00	0.00	0.00	0.00	0.00	0.00
118	RT	Reliability Assessment	PGAE	Kern	6/27/2020	32	No	DEC	4	18:00	22:00	3.50	0.00	0.00	-124.39	0.00	0.00	0.00	0.00	0.00	0.00
119	RT	Reliability Assessment	PGAE	Kern	6/27/2020	32	Yes	INC	24	0:00	0:00	-2.28	6308.28	0.00	21.77	0.00	0.00	0.00	0.00	0.00	0.00
120	RT	Reliability Assessment	PGAE	Sierra	6/2/2020	20	No	DEC	3	17:00	20:00	-3.30	0.00	0.00	-957.35	0.00	0.00	0.00	0.00	0.00	0.00
121	RT	Reliability Assessment	PGAE	Sierra	6/2/2020	20	No	INC	11	13:00	0:00	28.57	3119.24	0.00	-1996.58	0.00	0.00	0.00	0.00	0.00	0.00
122	RT	Reliability Assessment	PGAE	Sierra	6/3/2020	20	No	DEC	5	15:00	19:30	-2.29	0.00	0.00	-496.38	0.00	0.00	0.00	0.00	0.00	0.00
123	RT	Reliability Assessment	PGAE	Sierra	6/3/2020	20 - 46	No	INC	24	0:00	0:00	257.56	18188.69	0.00	-54319.70	15.08	-337.21	0.00	0.00	0.00	0.00
124	RT	Reliability Assessment	PGAE	Sierra	6/4/2020	20	No	DEC	3	17:00	20:00	-42.47	0.00	0.00	1475.36	0.00	0.00	0.00	0.00	0.00	0.00
125	RT	Reliability Assessment	PGAE	Sierra	6/4/2020	20	No	INC	24	0:00	0:00	-27.97	17019.96	0.00	979.64	0.00	0.00	0.00	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
126	RT	Reliability Assessment	PGAE	Sierra	6/5/2020	20	No	INC	8	0:00	8:00	0.00	11116.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127	RT	Reliability Assessment	PGAE	Sierra	6/9/2020	40	No	INC	2	22:00	23:45	19.58	1020.55	0.00	-747.95	20.00	-467.80	0.00	0.00	0.00	0.00
128	RT	Reliability Assessment	PGAE	Sierra	6/14/2020	20	No	INC	4	19:00	23:00	5.00	4043.79	240.00	-195.96	0.00	0.00	0.00	0.00	0.00	0.00
129	RT	Reliability Assessment	PGAE	Sierra	6/15/2020	20	No	INC	8	16:25	0:00	7.24	6178.01	0.00	-227.73	0.00	0.00	0.00	0.00	0.00	0.00
130	RT	Reliability Assessment	PGAE	Sierra	6/16/2020	20	No	INC	5	18:50	23:30	3.12	6260.47	266.67	-137.50	0.00	0.00	0.00	0.00	0.00	0.00
131	RT	Reliability Assessment	PGAE	Sierra	6/17/2020	20	No	INC	5	18:40	23:30	0.00	6283.00	263.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
132	RT	Reliability Assessment	PGAE	Sierra	6/18/2020	20	No	INC	3	19:25	22:00	6.98	3374.69	163.16	-284.68	0.00	0.00	0.00	0.00	0.00	0.00
133	RT	Reliability Assessment	PGAE	Sierra	6/20/2020	20	No	DEC	1	19:00	20:00	-1.61	0.00	0.00	52.31	0.00	0.00	0.00	0.00	0.00	0.00
134	RT	Reliability Assessment	PGAE	Sierra	6/20/2020	20	No	INC	11	13:45	0:00	2.16	10618.82	0.00	-130.47	0.00	0.00	0.00	0.00	0.00	0.00
135	RT	Reliability Assessment	PGAE	Sierra	6/22/2020	20 - 40	No	DEC	5	17:00	22:00	5.21	0.00	0.00	-354.12	0.00	0.00	0.00	0.00	0.00	0.00
136	RT	Reliability Assessment	PGAE	Sierra	6/22/2020	20 - 40	No	INC	13	11:10	0:00	9.24	15332.04	0.00	-1673.26	0.00	0.00	0.00	0.00	0.00	0.00
137	RT	Reliability Assessment	PGAE	Sierra	6/23/2020	40	No	DEC	6	16:00	22:00	-1.84	0.00	0.00	-16.03	0.00	0.00	0.00	0.00	0.00	0.00
138	RT	Reliability Assessment	PGAE	Sierra	6/23/2020	20 - 42	No	INC	24	0:00	0:00	1.93	22327.98	161.25	-32.53	0.00	0.00	0.00	0.00	0.00	0.00
139	RT	Reliability Assessment	PGAE	Sierra	6/24/2020	20 - 42	No	INC	24	0:00	0:00	1020.54	18151.07	0.00	-37124.07	0.00	0.00	0.00	0.00	0.00	0.00
140	RT	Reliability Assessment	PGAE	Sierra	6/25/2020	20	No	DEC	6	16:30	22:00	-5.68	0.00	0.00	214.17	0.00	0.00	0.00	0.00	0.00	0.00
141	RT	Reliability Assessment	PGAE	Sierra	6/25/2020	20 - 42	No	INC	24	0:00	0:00	1020.59	332.18	0.00	-52182.45	0.00	0.00	0.00	0.00	0.00	0.00
142	RT	Reliability Assessment	PGAE	Sierra	6/26/2020	20	No	DEC	1	21:40	22:00	1.04	0.00	0.00	-36.88	0.00	0.00	0.00	0.00	0.00	0.00
143	RT	Reliability Assessment	PGAE	Sierra	6/26/2020	20 - 48	No	INC	24	0:00	0:00	-21.78	11030.18	0.00	-646.82	2.24	0.00	0.00	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commi tment	INC_D EC	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
144	RT	Reliability Assessment	PGAE	Sierra	6/27/2020	40 - 48	No	INC	24	0:00	0:00	1.44	0.00	0.00	-38.66	0.00	0.00	0.00	0.00	0.00	0.00
145	RT	Reliability Assessment	PGAE	Sierra	6/28/2020	40	No	DEC	1	21:45	22:0 0	0.97	0.00	0.00	-14.69	0.00	0.00	0.00	0.00	0.00	0.00
146	RT	Reliability Assessment	PGAE	Sierra	6/28/2020	40	No	INC	23	0:00	23:0 0	20.00	0.00	0.00	-399.32	0.00	0.00	0.00	0.00	0.00	0.00
147	RT	Reliability Assessment	PGAE	Sierra	6/29/2020	20	No	DEC	1	19:45	20:4 5	14.29	0.00	0.00	-451.52	0.00	0.00	0.00	0.00	0.00	0.00
148	RT	Reliability Assessment	PGAE	Sierra	6/29/2020	20	No	INC	1	21:45	22:3 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
149	RT	Reliability Assessment	PGAE	Sierra	6/30/2020	45	No	DEC	4	17:30	21:0 0	20.12	0.00	0.00	-1123.55	30.60	-583.98	0.00	0.00	0.00	0.00
150	RT	Reliability Assessment	PGAE	Sierra	6/30/2020	40 - 45	No	INC	3	21:00	0:00	18.18	6804.01	0.00	-380.50	0.00	0.00	0.00	0.00	0.00	0.00
151	RT	Reliability Assessment	PGAE	Stockton	6/2/2020	30	No	DEC	1	4:45	5:30	-8.07	0.00	0.00	-19.43	0.00	0.00	0.00	0.00	0.00	0.00
152	RT	Reliability Assessment	PGAE	Stockton	6/2/2020	50 - 70	No	INC	1	3:55	4:45	7.47	0.00	0.00	-8563.13	35.06	-8765.10	0.00	0.00	0.00	0.00
153	RT	Reliability Assessment	PGAE	Stockton	6/3/2020	300	No	DEC	2	17:30	19:0 0	2.97	0.00	0.00	-2014.87	2.82	-55.57	0.00	0.00	0.00	0.00
154	RT	Reliability Assessment	PGAE	Stockton	6/3/2020	300 - 310	No	INC	3	17:25	20:0 0	2.51	0.00	0.00	-103.17	5.69	-111.87	0.00	0.00	0.00	0.00
155	RT	Reliability Assessment	PGAE	Stockton	6/27/2020	88.8	No	INC	7	17:15	0:00	-35.83	12547.22	5942.03	1803.27	0.00	0.00	0.00	0.00	0.00	0.00
156	RT	Reliability Assessment	PGAE	NA	6/2/2020	40	No	INC	1	13:55	14:4 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
157	RT	Reliability Assessment	SCE	NA	6/2/2020	450 - 474	No	DEC	7	14:00	21:0 0	7.31	-13297.17	0.00	-184.29	-0.33	0.00	4.30	0.00	0.00	0.00
158	RT	Reliability Assessment	SCE	NA	6/2/2020	450	No	INC	7	7:00	14:0 0	90.17	14271.08	0.00	-2324.38	0.00	0.00	0.00	0.00	0.00	0.00
159	RT	Reliability Assessment	SCE	NA	6/3/2020	450	No	DEC	6	14:05	20:0 0	-19.37	-4297.65	0.00	455.33	-13.33	0.00	176.91	0.00	0.00	0.00
160	RT	Reliability Assessment	SCE	NA	6/5/2020	409	No	DEC	2	6:40	7:55	3.80	-4692.95	0.00	-79.95	0.00	0.00	0.00	0.00	0.00	0.00
161	RT	Reliability Assessment	SCE	NA	6/5/2020	415	No	INC	6	7:55	13:0 0	200.83	-305.60	0.00	-5345.18	0.00	0.00	0.00	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commi tment	INC_D EC	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
162	RT	Reliability Assessment	SCE	NA	6/10/2020	460 - 475	No	DEC	5	19:10	0:00	-9.42	-4516.38	0.00	115.57	0.00	0.00	0.00	0.00	0.00	0.00
163	RT	Reliability Assessment	SCE	NA	6/11/2020	475	No	DEC	7	17:35	0:00	-0.48	-3591.75	0.00	-14.56	0.00	0.00	0.00	0.00	0.00	0.00
164	RT	Reliability Assessment	SCE	NA	6/16/2020	60 - 70	No	DEC	10	8:25	18:0 0	-27.96	0.00	0.00	-59.38	-51.80	0.00	-0.29	0.00	0.00	0.00
165	RT	Reliability Assessment	SCE	NA	6/16/2020	70	No	INC	1	18:00	19:0 0	1.88	0.00	0.00	-74.46	0.00	0.00	0.00	0.00	0.00	0.00
166	RT	Reliability Assessment	SCE	NA	6/18/2020	60 - 475	No	DEC	16	8:10	0:00	76.94	-13526.16	0.00	-2779.78	-52.42	0.00	-0.29	0.00	0.00	0.00
167	RT	Reliability Assessment	SCE	NA	6/19/2020	470	No	DEC	15	5:00	20:0 0	-21.37	-1263.39	0.00	507.51	0.00	0.00	0.00	0.00	0.00	0.00
168	RT	Reliability Assessment	SCE	NA	6/19/2020	470	No	INC	18	0:00	18:0 0	-35.21	8341.37	0.00	850.14	0.00	0.00	0.00	0.00	0.00	0.00
169	RT	Reliability Assessment	SCE	NA	6/22/2020	474	No	DEC	3	19:50	22:0 0	77.12	-4401.54	0.00	-2199.16	-3.61	0.00	47.35	0.00	0.00	0.00
170	RT	Reliability Assessment	SCE	NA	6/23/2020	470	No	DEC	6	17:05	23:0 0	-15.94	-10145.63	0.00	363.55	0.00	0.00	0.00	0.00	0.00	0.00
171	RT	Reliability Assessment	SCE	NA	6/23/2020	470	No	INC	1	23:00	0:00	5.97	0.00	0.00	-161.30	-2.50	0.00	33.46	0.00	0.00	0.00
172	RT	Reliability Assessment	SCE	NA	6/24/2020	50 - 474	No	DEC	16	8:25	0:00	9.65	-11357.84	0.00	-1016.32	-42.51	0.00	-0.22	0.00	0.00	0.00
173	RT	Reliability Assessment	SCE	NA	6/24/2020	474	No	INC	4	12:25	16:0 0	-31.08	-481.11	0.00	513.87	0.00	0.00	0.00	0.00	0.00	0.00
174	RT	Reliability Assessment	SCE	NA	6/25/2020	474	No	DEC	5	17:00	22:0 0	-5.83	-8324.38	0.00	137.53	-0.50	0.00	6.54	0.00	0.00	0.00
175	RT	Reliability Assessment	SCE	NA	6/25/2020	474	No	INC	24	0:00	0:00	207.64	4921.61	0.00	-3938.90	0.00	0.00	0.00	0.00	0.00	0.00
176	RT	Reliability Assessment	SCE	NA	6/26/2020	474	No	DEC	5	17:00	22:0 0	-15.28	-5673.15	0.00	385.31	0.00	0.00	0.00	0.00	0.00	0.00
177	RT	Reliability Assessment	SCE	NA	6/26/2020	474	No	INC	17	0:00	17:0 0	5.08	0.00	0.00	-655.28	-0.65	0.00	8.40	0.00	0.00	0.00
178	RT	Reliability Assessment	SCE	NA	6/27/2020	480	No	DEC	3	19:00	22:0 0	-5.46	0.00	0.00	161.39	0.00	0.00	0.00	0.00	0.00	0.00
179	RT	Reliability Assessment	SCE	NA	6/27/2020	480	No	INC	9	15:35	0:00	8.28	4615.85	0.00	-160.02	-1.67	0.00	23.82	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commit ment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
180	RT	Reliability Assessment	SDGE	San Diego-IV	6/7/2020	20	No	DEC	1	16:20	17:00	-2.90	0.00	0.00	-25.20	-5.52	0.00	-24.49	0.00	0.00	0.00
181	RT	Reliability Assessment	SDGE	San Diego-IV	6/7/2020	20	No	INC	1	17:00	18:00	-3.28	0.00	0.00	-35.10	0.00	0.00	0.00	0.00	0.00	0.00
182	RT	Reliability Assessment	SDGE	San Diego-IV	6/8/2020	15	No	DEC	5	13:00	18:00	0.44	0.00	0.00	1.47	0.00	0.00	0.00	0.00	0.00	0.00
183	RT	Reliability Assessment	SDGE	San Diego-IV	6/8/2020	15	No	INC	10	11:00	21:00	-5.43	0.00	0.00	-43.25	-11.85	0.00	-52.59	0.00	0.00	0.00
184	RT	Software Limitation	PGAE	Bay Area	6/2/2020	0	No	DEC	1	23:00	0:00	-4.92	0.00	0.00	-25.22	-11.80	0.00	0.00	0.00	0.00	0.00
185	RT	Software Limitation	PGAE	Fresno	6/13/2020	0	No	INC	3	1:20	4:20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
186	RT	Software Limitation	PGAE	Sierra	6/21/2020	1	No	DEC	3	17:00	20:00	3.53	0.00	0.00	-33.17	0.00	0.00	0.00	0.00	0.00	0.00
187	RT	Software Limitation	PGAE	Sierra	6/21/2020	1	No	INC	11	6:30	17:00	14.42	0.00	0.00	-29.29	0.99	-22.29	0.00	0.00	0.00	0.00
188	RT	Software Limitation	PGAE	NA	6/16/2020	49	No	INC	11	7:00	18:00	-49.53	21892.72	0.00	552.66	0.00	0.00	0.00	0.00	0.00	0.00
189	RT	Software Limitation	SCE	LA Basin	6/8/2020	0	No	INC	2	2:20	3:25	-11.39	0.00	0.00	0.00	-41.75	0.00	0.00	0.00	0.00	0.00
190	RT	Software Limitation	SCE	LA Basin	6/29/2020	0	No	INC	1	22:35	23:35	-31.27	638.01	0.00	0.00	-62.53	0.00	0.00	0.00	0.00	0.00
191	RT	Software Limitation	SDGE	San Diego-IV	6/10/2020	0	No	DEC	3	18:05	21:00	-16.18	-1632.42	0.00	-2666.82	-32.78	0.00	14.95	0.00	0.00	0.00
192	RT	Software Limitation	SDGE	San Diego-IV	6/10/2020	0	No	INC	3	21:00	0:00	-4.30	0.00	0.00	101.74	0.00	0.00	0.00	0.00	0.00	0.00
193	RT	Unit Testing	PGAE	Bay Area	6/2/2020	572	No	DEC	1	21:30	22:00	29.11	-9519.27	0.00	-798.51	15.94	-336.54	0.00	0.00	0.00	0.00
194	RT	Unit Testing	PGAE	Bay Area	6/2/2020	572	No	INC	1	22:00	22:15	-4.48	0.00	0.00	128.25	0.00	0.00	0.00	0.00	0.00	0.00
195	RT	Unit Testing	PGAE	Bay Area	6/3/2020	104	No	INC	1	9:25	9:55	17.66	-1333.48	0.00	-688.35	34.45	-699.09	0.00	0.00	0.00	0.00
196	RT	Unit Testing	PGAE	Bay Area	6/5/2020	0	No	INC	2	17:10	18:15	-30.00	0.00	0.00	-0.07	-90.00	0.00	-0.07	0.00	0.00	0.00
197	RT	Unit Testing	PGAE	Bay Area	6/8/2020	597 - 737	No	INC	2	22:15	0:00	134.68	0.00	0.00	-3534.96	69.47	-1043.41	0.00	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
198	RT	Unit Testing	PGAE	Bay Area	6/9/2020	250 - 793	No	INC	3	0:00	3:00	-158.31	0.00	0.00	5637.23	5.04	-1236.78	675.77	0.00	0.00	0.00
199	RT	Unit Testing	PGAE	Bay Area	6/22/2020	440	No	INC	5	7:10	11:45	9.97	-35555.78	0.00	-190.51	0.00	0.00	0.00	0.00	0.00	0.00
200	RT	Unit Testing	PGAE	Bay Area	6/23/2020	309	No	INC	1	9:00	9:45	17.94	0.00	0.00	-588.10	42.48	-554.96	0.00	0.00	0.00	0.00
201	RT	Unit Testing	PGAE	Fresno	6/4/2020	44	No	INC	1	18:25	19:00	21.90	0.00	0.00	-1273.31	47.50	-1334.80	0.00	0.00	0.00	0.00
202	RT	Unit Testing	PGAE	Sierra	6/10/2020	165.73	No	INC	2	16:30	18:00	192.15	0.00	0.00	-6169.23	0.00	0.00	0.00	0.00	0.00	0.00
203	RT	Unit Testing	SCE	Big Creek-Ventura	6/1/2020	100	No	INC	11	6:00	16:30	0.01	1960.29	0.00	-3.89	0.00	0.00	0.00	0.00	0.00	0.00
204	RT	Unit Testing	SCE	Big Creek-Ventura	6/25/2020	100 - 200	No	INC	4	14:50	18:00	107.29	1983.89	0.00	-2116.64	0.00	0.00	0.00	0.00	0.00	0.00
205	RT	Unit Testing	SCE	LA Basin	6/2/2020	147 - 249	No	INC	19	4:20	23:00	103.65	-1214.89	6915.40	-2595.07	73.46	-1131.39	0.00	0.00	0.00	0.00
206	RT	Unit Testing	SCE	LA Basin	6/9/2020	155.69	No	DEC	1	14:40	15:00	16.89	0.00	0.00	-612.85	0.96	-20.87	0.00	0.00	0.00	0.00
207	RT	Unit Testing	SCE	LA Basin	6/10/2020	210 - 382	No	DEC	1	12:00	13:00	-208.77	-7085.55	0.00	4754.70	-417.54	0.00	4766.68	0.00	0.00	0.00
208	RT	Unit Testing	SCE	LA Basin	6/11/2020	45	No	INC	1	19:30	20:00	14.40	0.00	0.00	-719.33	27.13	-719.33	0.00	0.00	0.00	0.00
209	RT	Unit Testing	SCE	LA Basin	6/29/2020	105 - 250	No	INC	2	22:10	0:00	48.48	0.00	0.00	-1265.04	148.20	-1591.64	0.00	0.00	0.00	0.00
210	RT	Unit Testing	SDGE	San Diego-IV	6/4/2020	381	No	DEC	2	19:55	21:00	-51.50	-9751.99	0.00	299.33	0.00	0.00	0.00	0.00	0.00	0.00
211	RT	Unit Testing	SDGE	San Diego-IV	6/4/2020	247 - 316	No	INC	18	2:20	20:00	186.39	-1941.81	680.14	-3621.98	365.05	-5192.17	0.00	0.00	0.00	0.00
212	RT	Unit Testing	SDGE	San Diego-IV	6/11/2020	595	No	INC	1	18:35	19:00	9.16	0.00	0.00	-321.78	0.00	0.00	0.00	0.00	0.00	0.00
213	RT	Unplanned Outage	SCE	Big Creek-Ventura	6/10/2020	0	No	INC	8	16:35	0:00	-83.33	5086.73	0.00	5285.50	0.00	0.00	0.00	0.00	0.00	0.00
214	RT	Unplanned Outage	SCE	Big Creek-Ventura	6/11/2020	0	No	INC	7	0:00	6:35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
215	RT	Voltage Support	PGAE	Fresno	6/7/2020	-305	No	DEC	1	23:30	0:00	-77.50	0.00	0.00	2170.20	0.00	0.00	0.00	0.00	0.00	0.00

California Independent System Operator Corporation
Exceptional Dispatch Report
August 17, 2020

Chart 2: Table of Exceptional Dispatches for Period 01/June/2020 - 30/June/2020

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commi tment	INC_D EC	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
216	RT	Voltage Support	PGAE	Fresno	6/8/2020	-305	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
217	RT	Voltage Support	PGAE	Fresno	6/16/2020	-297	No	DEC	7	0:15	7:00	-74.25	0.00	0.00	1476.30	0.00	0.00	0.00	0.00	0.00	0.00
218	RT	Voltage Support	PGAE	Fresno	6/16/2020	83	No	INC	1	23:40	0:00	-2.01	1288.50	0.00	47.39	0.00	0.00	0.00	0.00	0.00	0.00
219	RT	Voltage Support	PGAE	Fresno	6/17/2020	83	No	INC	6	0:00	6:00	6.09	11596.50	0.00	-150.74	0.00	0.00	0.00	0.00	0.00	0.00
220	RT	Voltage Support	PGAE	Fresno	6/27/2020	83	No	INC	3	15:30	18:0 0	-63.51	11267.54	0.00	1613.97	0.00	0.00	0.00	0.00	0.00	0.00
221	RT	Voltage Support	PGAE	Sierra	6/7/2020	20 - 40	No	INC	16	8:35	0:00	-6.67	21446.52	300.00	-120.35	0.00	0.00	0.00	0.00	0.00	0.00
222	RT	Voltage Support	PGAE	Sierra	6/8/2020	20	No	INC	24	0:00	0:00	-15.70	12586.75	117.39	589.79	0.00	0.00	0.00	0.00	0.00	0.00
223	RT	Voltage Support	PGAE	Sierra	6/21/2020	20	No	INC	2	22:00	0:00	-0.29	1283.93	0.00	11.23	0.00	0.00	0.00	0.00	0.00	0.00
224	RT	Voltage Support	PGAE	Sierra	6/22/2020	20	No	INC	1	0:00	0:30	-2.69	320.98	0.00	56.39	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 costs[8]. 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

---

[8] 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 8,640 five-minute intervals in June, this resource was issued exceptional dispatch instructions in 8,283 five-minute intervals. This resource was eligible to set the LMP in 1,999 intervals. Out of the 1,999 intervals, resource calculated LMP was larger than the market LMP in 79 intervals. In the 79 intervals, the average increase in five minute LMP was $6.36/MWh. Out of the 1,999 intervals, resource calculated LMP was less than the market LMP in 1,920 intervals. In the 1,920 intervals, the average decrease in five minute LMP was $16.09/MWh. This implies that if the CAISO could model the constraint for this exceptional dispatch, then this resource and all other pricing nodes associated with that constraint would observe an average decrease of $15.19/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 8,640 five-minute intervals in June, this resource was issued exceptional dispatch instructions in 36 five-minute intervals. This resource was eligible to set the LMP in 12 intervals. Out of the 12 intervals, resource calculated LMP was larger than the market LMP in 12 intervals. In the 12 intervals, the average increase in five minute LMP was $5.97/MWh. Out of the 12 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 $5.97/MWh

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

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1	6/2/2020	7	11	22.55	Yes	10.62	-11.93
2	6/2/2020	7	12	22.24	Yes	10.62	-11.62
3	6/2/2020	8	1	30.08	Yes	10.62	-19.46
4	6/2/2020	8	2	30.39	Yes	10.62	-19.77
5	6/2/2020	8	3	31.96	Yes	10.62	-21.34
6	6/2/2020	8	4	29.25	Yes	10.62	-18.63
7	6/2/2020	8	5	30.27	Yes	10.62	-19.65
8	6/2/2020	8	6	28.57	Yes	10.62	-17.95
9	6/2/2020	8	7	30.07	Yes	10.62	-19.45
10	6/2/2020	8	8	30.27	Yes	10.62	-19.65
11	6/2/2020	8	9	28.67	Yes	10.62	-18.05
12	6/2/2020	8	10	28.74	Yes	10.62	-18.12
13	6/2/2020	8	11	26.15	Yes	10.62	-15.53
14	6/2/2020	8	12	27.51	Yes	10.62	-16.89
15	6/2/2020	9	1	29.24	Yes	10.62	-18.62
16	6/2/2020	9	2	29.41	Yes	10.62	-18.79
17	6/2/2020	9	3	25.54	Yes	10.62	-14.92
18	6/2/2020	9	4	21.02	Yes	10.62	-10.40
19	6/2/2020	9	5	26.49	Yes	10.62	-15.87
20	6/2/2020	9	6	26.28	Yes	10.62	-15.66
21	6/2/2020	9	7	26.43	Yes	10.62	-15.81
22	6/2/2020	9	8	25.56	Yes	10.62	-14.94
23	6/2/2020	9	9	31.20	Yes	10.62	-20.58
24	6/2/2020	9	10	29.57	Yes	10.62	-18.95
25	6/2/2020	9	11	30.08	Yes	10.62	-19.46
26	6/2/2020	9	12	33.49	Yes	10.62	-22.87
27	6/2/2020	10	1	23.80	Yes	10.62	-13.18
28	6/2/2020	10	2	22.42	Yes	10.62	-11.80
29	6/2/2020	10	3	23.08	Yes	10.62	-12.46
30	6/2/2020	10	4	22.97	Yes	10.62	-12.35
31	6/2/2020	10	5	26.59	Yes	10.62	-15.97
32	6/2/2020	10	6	30.30	Yes	10.62	-19.68
33	6/2/2020	10	7	33.36	Yes	10.62	-22.74
34	6/2/2020	10	8	45.83	Yes	10.62	-35.21

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
35	6/2/2020	10	9	37.80	Yes	10.62	-27.18
36	6/2/2020	10	10	19.64	Yes	10.62	-9.02
37	6/2/2020	10	11	21.18	Yes	10.62	-10.56
38	6/2/2020	10	12	22.08	Yes	10.62	-11.46
39	6/2/2020	11	1	22.27	Yes	10.62	-11.65
40	6/2/2020	11	2	27.77	Yes	10.62	-17.15
41	6/2/2020	11	3	29.54	Yes	10.62	-18.92
42	6/2/2020	11	4	27.67	Yes	10.62	-17.05
43	6/2/2020	11	5	28.55	Yes	10.62	-17.93
44	6/2/2020	11	6	27.97	Yes	10.62	-17.35
45	6/2/2020	11	7	36.84	Yes	10.62	-26.22
46	6/2/2020	11	8	32.15	Yes	10.62	-21.53
47	6/2/2020	11	9	31.92	Yes	10.62	-21.30
48	6/2/2020	11	10	32.75	Yes	10.62	-22.13
49	6/2/2020	11	11	35.83	Yes	10.62	-25.21
50	6/2/2020	11	12	41.66	Yes	10.62	-31.04
51	6/2/2020	12	1	36.17	Yes	10.62	-25.55
52	6/2/2020	12	2	32.18	Yes	10.62	-21.56
53	6/2/2020	12	3	32.79	Yes	10.62	-22.17
54	6/2/2020	12	4	29.88	Yes	10.62	-19.26
55	6/2/2020	12	5	31.59	Yes	10.62	-20.97
56	6/2/2020	12	6	31.90	Yes	10.62	-21.28
57	6/2/2020	12	7	31.45	Yes	10.62	-20.83
58	6/2/2020	12	8	32.13	Yes	10.62	-21.51
59	6/2/2020	12	9	33.08	Yes	10.62	-22.46
60	6/2/2020	12	10	35.15	Yes	10.62	-24.53
61	6/2/2020	12	11	35.15	Yes	10.62	-24.53
62	6/2/2020	12	12	33.13	Yes	10.62	-22.51
63	6/2/2020	13	1	34.90	Yes	10.62	-24.28
64	6/2/2020	13	2	32.67	Yes	10.62	-22.05
65	6/2/2020	13	3	32.10	Yes	10.62	-21.48
66	6/2/2020	13	4	32.22	Yes	10.62	-21.60
67	6/2/2020	13	5	33.38	Yes	10.62	-22.76
68	6/2/2020	13	6	32.62	Yes	10.62	-22.00
69	6/2/2020	13	7	42.15	Yes	10.62	-31.53
70	6/2/2020	13	8	42.35	Yes	10.62	-31.73
71	6/2/2020	13	9	42.95	Yes	10.62	-32.33
72	6/2/2020	13	10	44.59	Yes	10.62	-33.97

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
73	6/2/2020	13	11	44.47	Yes	10.62	-33.85
74	6/2/2020	13	12	50.93	Yes	10.62	-40.31
75	6/2/2020	14	1	23.46	Yes	10.62	-12.84
76	6/2/2020	14	2	22.31	Yes	10.62	-11.69
77	6/2/2020	14	3	22.80	Yes	10.62	-12.18
78	6/2/2020	14	4	24.30	Yes	10.62	-13.68
79	6/2/2020	14	5	25.21	Yes	10.62	-14.59
80	6/2/2020	14	6	27.15	Yes	10.62	-16.53
81	6/2/2020	14	7	29.02	Yes	10.62	-18.40
82	6/2/2020	14	8	38.98	Yes	10.62	-28.36
83	6/2/2020	14	9	34.08	Yes	10.62	-23.46
84	6/2/2020	14	10	34.48	Yes	10.62	-23.86
85	6/2/2020	14	11	28.14	Yes	10.62	-17.52
86	6/2/2020	14	12	30.26	Yes	10.62	-19.64
87	6/2/2020	15	1	33.52	Yes	10.62	-22.90
88	6/2/2020	15	2	33.72	Yes	10.62	-23.10
89	6/2/2020	15	3	35.74	Yes	10.62	-25.12
90	6/2/2020	15	4	33.77	Yes	10.62	-23.15
91	6/2/2020	15	5	35.04	Yes	10.62	-24.42
92	6/2/2020	15	6	40.23	Yes	10.62	-29.61
93	6/2/2020	15	7	37.80	Yes	10.62	-27.18
94	6/2/2020	15	8	40.51	Yes	10.62	-29.89
95	6/2/2020	15	9	51.39	Yes	10.62	-40.77
96	6/2/2020	15	10	54.03	Yes	10.62	-43.41
97	6/2/2020	15	11	42.09	Yes	10.62	-31.47
98	6/2/2020	15	12	50.69	Yes	10.62	-40.07
99	6/2/2020	16	1	11.32	Yes	10.62	-0.70
100	6/2/2020	16	2	12.74	Yes	10.62	-2.12
101	6/2/2020	16	3	14.09	Yes	10.62	-3.47
102	6/2/2020	16	4	14.57	Yes	10.62	-3.95
103	6/2/2020	16	5	15.35	Yes	10.62	-4.73
104	6/2/2020	16	6	15.45	Yes	10.62	-4.83
105	6/2/2020	16	7	14.97	Yes	10.62	-4.35
106	6/2/2020	16	8	15.51	Yes	10.62	-4.89
107	6/2/2020	16	9	15.26	Yes	10.62	-4.64
108	6/2/2020	16	10	69.53	Yes	10.62	-58.91
109	6/2/2020	16	11	27.78	Yes	10.62	-17.16
110	6/2/2020	16	12	11.49	Yes	10.62	-0.87

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
111	6/2/2020	17	1	12.37	Yes	10.62	-1.75
112	6/2/2020	17	2	11.84	Yes	10.62	-1.22
113	6/2/2020	17	3	12.57	Yes	10.62	-1.95
114	6/2/2020	17	4	12.38	Yes	10.62	-1.76
115	6/2/2020	17	5	13.14	Yes	10.62	-2.52
116	6/2/2020	17	6	13.48	Yes	10.62	-2.86
117	6/2/2020	17	7	15.27	Yes	10.62	-4.65
118	6/2/2020	17	8	49.52	Yes	10.62	-38.90
119	6/2/2020	17	9	129.46	Yes	10.62	-118.84
120	6/2/2020	17	10	175.89	Yes	10.62	-165.27
121	6/2/2020	17	11	164.53	Yes	10.62	-153.91
122	6/2/2020	17	12	151.29	Yes	10.62	-140.67
123	6/2/2020	18	1	-0.54	Yes	10.62	11.16
124	6/2/2020	18	2	1.04	Yes	10.62	9.58
125	6/2/2020	18	3	2.80	Yes	10.62	7.82
126	6/2/2020	18	4	6.20	Yes	10.62	4.42
127	6/2/2020	18	5	5.96	Yes	10.62	4.66
128	6/2/2020	18	6	105.64	Yes	10.62	-95.02
129	6/2/2020	18	7	13.59	Yes	10.62	-2.97
130	6/2/2020	18	8	89.27	Yes	10.62	-78.65
131	6/2/2020	18	9	98.29	Yes	10.62	-87.67
132	6/2/2020	18	10	117.07	Yes	10.62	-106.45
133	6/2/2020	18	11	119.86	Yes	10.62	-109.24
134	6/2/2020	18	12	123.31	Yes	10.62	-112.69
135	6/2/2020	19	1	-24.58	Yes	10.62	35.20
136	6/2/2020	19	2	14.66	Yes	10.62	-4.04
137	6/2/2020	19	3	14.52	Yes	10.62	-3.90
138	6/2/2020	19	4	17.47	Yes	10.62	-6.85
139	6/2/2020	19	5	17.42	Yes	10.62	-6.80
140	6/2/2020	19	6	17.52	Yes	10.62	-6.90
141	6/2/2020	19	7	17.37	Yes	10.62	-6.75
142	6/2/2020	19	8	18.09	Yes	10.62	-7.47
143	6/2/2020	19	9	18.46	Yes	10.62	-7.84
144	6/2/2020	19	10	21.24	Yes	10.62	-10.62
145	6/2/2020	19	11	23.59	Yes	10.62	-12.97
146	6/2/2020	19	12	24.69	Yes	10.62	-14.07
147	6/2/2020	20	1	25.60	Yes	10.62	-14.98
148	6/2/2020	20	2	25.60	Yes	10.62	-14.98

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
149	6/2/2020	20	3	29.28	Yes	10.62	-18.66
150	6/2/2020	20	4	27.29	Yes	10.62	-16.67
151	6/2/2020	20	5	25.11	Yes	10.62	-14.49
152	6/2/2020	20	6	22.60	Yes	10.62	-11.98
153	6/2/2020	20	7	18.73	Yes	10.62	-8.11
154	6/2/2020	20	8	21.92	Yes	10.62	-11.30
155	6/2/2020	20	9	23.75	Yes	10.62	-13.13
156	6/2/2020	20	10	23.91	Yes	10.62	-13.29
157	6/2/2020	20	11	23.24	Yes	10.62	-12.62
158	6/2/2020	20	12	21.31	Yes	10.62	-10.69
159	6/2/2020	21	1	20.80	Yes	10.62	-10.18
160	6/2/2020	21	2	21.21	Yes	10.62	-10.59
161	6/2/2020	21	3	21.68	Yes	10.62	-11.06
162	6/2/2020	21	4	12.38	Yes	10.62	-1.76
163	6/2/2020	21	5	12.70	Yes	10.62	-2.08
164	6/2/2020	21	6	20.52	Yes	10.62	-9.90
165	6/2/2020	21	7	12.04	Yes	10.62	-1.42
166	6/2/2020	21	8	11.29	Yes	10.62	-0.67
167	6/2/2020	21	9	10.68	Yes	10.62	-0.06
168	6/2/2020	21	10	10.62	Yes	10.62	0.00
169	6/2/2020	21	11	10.62	Yes	10.62	0.00
170	6/2/2020	21	12	10.62	Yes	10.62	0.00
171	6/2/2020	22	1	30.45	Yes	10.62	-19.83
172	6/2/2020	22	2	32.35	Yes	10.62	-21.73
173	6/2/2020	22	3	23.67	Yes	10.62	-13.05
174	6/2/2020	22	5	21.24	Yes	10.62	-10.62
175	6/2/2020	22	6	20.40	Yes	10.62	-9.78
176	6/2/2020	22	7	17.36	Yes	10.62	-6.74
177	6/2/2020	22	8	16.08	Yes	10.62	-5.46
178	6/2/2020	22	9	13.70	Yes	10.62	-3.08
179	6/2/2020	22	10	13.45	Yes	10.62	-2.83
180	6/2/2020	22	11	13.41	Yes	10.62	-2.79
181	6/2/2020	22	12	12.15	Yes	10.62	-1.53
182	6/2/2020	23	1	16.24	Yes	10.62	-5.62
183	6/2/2020	23	2	18.42	Yes	10.62	-7.80
184	6/2/2020	23	3	24.70	Yes	10.62	-14.08
185	6/2/2020	23	4	26.81	Yes	10.62	-16.19
186	6/2/2020	23	5	25.58	Yes	10.62	-14.96

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
187	6/2/2020	23	6	24.15	Yes	10.62	-13.53
188	6/2/2020	23	7	17.92	Yes	10.62	-7.30
189	6/2/2020	23	8	18.56	Yes	10.62	-7.94
190	6/2/2020	23	9	24.28	Yes	10.62	-13.66
191	6/2/2020	23	10	22.93	Yes	10.62	-12.31
192	6/2/2020	23	11	22.34	Yes	10.62	-11.72
193	6/2/2020	23	12	21.50	Yes	10.62	-10.88
194	6/2/2020	24	1	23.11	Yes	10.62	-12.49
195	6/2/2020	24	2	25.64	Yes	10.62	-15.02
196	6/2/2020	24	3	486.99	Yes	10.62	-476.37
197	6/2/2020	24	4	76.80	Yes	10.62	-66.18
198	6/2/2020	24	5	36.49	Yes	10.62	-25.87
199	6/2/2020	24	6	26.65	Yes	10.62	-16.03
200	6/2/2020	24	7	24.31	Yes	10.62	-13.69
201	6/2/2020	24	8	23.32	Yes	10.62	-12.70
202	6/2/2020	24	9	22.22	Yes	10.62	-11.60
203	6/2/2020	24	10	20.33	Yes	10.62	-9.71
204	6/2/2020	24	11	20.59	Yes	10.62	-9.97
205	6/2/2020	24	12	20.59	Yes	10.62	-9.97
206	6/3/2020	1	1	23.13	Yes	10.89	-12.24
207	6/3/2020	1	2	24.93	Yes	10.89	-14.04
208	6/3/2020	1	3	26.49	Yes	10.89	-15.60
209	6/3/2020	1	4	40.32	Yes	10.89	-29.43
210	6/3/2020	1	5	28.11	Yes	10.89	-17.22
211	6/3/2020	1	6	28.59	Yes	10.89	-17.70
212	6/3/2020	1	7	23.94	Yes	10.89	-13.05
213	6/3/2020	1	8	24.09	Yes	10.89	-13.20
214	6/3/2020	1	9	23.35	Yes	10.89	-12.46
215	6/3/2020	1	10	21.44	Yes	10.89	-10.55
216	6/3/2020	1	11	21.22	Yes	10.89	-10.33
217	6/3/2020	1	12	20.97	Yes	10.89	-10.08
218	6/3/2020	2	1	25.21	Yes	10.89	-14.32
219	6/3/2020	2	2	28.91	Yes	10.89	-18.02
220	6/3/2020	2	3	24.49	Yes	10.89	-13.60
221	6/3/2020	2	4	27.38	Yes	10.89	-16.49
222	6/3/2020	2	5	25.39	Yes	10.89	-14.50
223	6/3/2020	2	6	24.25	Yes	10.89	-13.36
224	6/3/2020	2	7	24.01	Yes	10.89	-13.12

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
225	6/3/2020	2	8	23.87	Yes	10.89	-12.98
226	6/3/2020	2	9	23.55	Yes	10.89	-12.66
227	6/3/2020	2	10	22.55	Yes	10.89	-11.66
228	6/3/2020	2	11	22.51	Yes	10.89	-11.62
229	6/3/2020	3	2	23.35	Yes	10.89	-12.46
230	6/3/2020	3	4	22.50	Yes	10.89	-11.61
231	6/3/2020	3	5	22.26	Yes	10.89	-11.37
232	6/17/2020	22	8	32.21	Yes	10.16	-22.05
233	6/17/2020	22	9	31.61	Yes	10.16	-21.45
234	6/17/2020	22	10	29.68	Yes	10.16	-19.52
235	6/17/2020	22	11	24.86	Yes	10.16	-14.70
236	6/17/2020	22	12	21.42	Yes	10.16	-11.26
237	6/17/2020	23	1	23.13	Yes	10.16	-12.97
238	6/17/2020	23	2	28.96	Yes	10.16	-18.80
239	6/17/2020	23	3	34.30	Yes	10.16	-24.14
240	6/17/2020	23	4	28.76	Yes	10.16	-18.60
241	6/17/2020	23	5	32.34	Yes	10.16	-22.18
242	6/17/2020	23	6	30.13	Yes	10.16	-19.97
243	6/17/2020	23	7	22.74	Yes	10.16	-12.58
244	6/17/2020	23	8	22.69	Yes	10.16	-12.53
245	6/17/2020	23	9	22.17	Yes	10.16	-12.01
246	6/17/2020	23	10	18.87	Yes	10.16	-8.71
247	6/17/2020	23	11	18.32	Yes	10.16	-8.16
248	6/17/2020	23	12	17.08	Yes	10.16	-6.92
249	6/17/2020	24	1	21.65	Yes	10.16	-11.49
250	6/17/2020	24	2	21.65	Yes	10.16	-11.49
251	6/17/2020	24	3	21.65	Yes	10.16	-11.49
252	6/17/2020	24	4	20.95	Yes	10.16	-10.79
253	6/17/2020	24	5	18.80	Yes	10.16	-8.64
254	6/17/2020	24	6	19.34	Yes	10.16	-9.18
255	6/17/2020	24	7	17.15	Yes	10.16	-6.99
256	6/17/2020	24	8	18.23	Yes	10.16	-8.07
257	6/17/2020	24	9	17.70	Yes	10.16	-7.54
258	6/17/2020	24	10	15.90	Yes	10.16	-5.74
259	6/17/2020	24	11	15.69	Yes	10.16	-5.53
260	6/17/2020	24	12	13.36	Yes	10.16	-3.20
261	6/18/2020	1	1	16.89	Yes	10.18	-6.71
262	6/18/2020	1	2	21.11	Yes	10.18	-10.93

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
263	6/18/2020	1	3	18.30	Yes	10.18	-8.12
264	6/18/2020	1	4	18.01	Yes	10.18	-7.83
265	6/18/2020	1	5	19.86	Yes	10.18	-9.68
266	6/18/2020	1	6	18.49	Yes	10.18	-8.31
267	6/18/2020	1	7	17.99	Yes	10.18	-7.81
268	6/18/2020	1	8	18.12	Yes	10.18	-7.94
269	6/18/2020	1	9	18.12	Yes	10.18	-7.94
270	6/18/2020	1	10	15.64	Yes	10.18	-5.46
271	6/18/2020	1	11	15.62	Yes	10.18	-5.44
272	6/18/2020	1	12	14.99	Yes	10.18	-4.81
273	6/18/2020	2	1	19.45	Yes	10.18	-9.27
274	6/18/2020	2	2	18.20	Yes	10.18	-8.02
275	6/18/2020	2	3	19.45	Yes	10.18	-9.27
276	6/18/2020	2	4	19.29	Yes	10.18	-9.11
277	6/18/2020	2	5	19.29	Yes	10.18	-9.11
278	6/18/2020	2	6	19.29	Yes	10.18	-9.11
279	6/18/2020	2	7	17.75	Yes	10.18	-7.57
280	6/18/2020	2	8	17.84	Yes	10.18	-7.66
281	6/18/2020	2	9	17.88	Yes	10.18	-7.70
282	6/18/2020	2	10	17.65	Yes	10.18	-7.47
283	6/18/2020	2	11	17.44	Yes	10.18	-7.26
284	6/18/2020	2	12	15.67	Yes	10.18	-5.49
285	6/18/2020	3	1	17.44	Yes	10.18	-7.26
286	6/18/2020	3	2	16.35	Yes	10.18	-6.17
287	6/18/2020	3	3	16.94	Yes	10.18	-6.76
288	6/18/2020	3	4	16.44	Yes	10.18	-6.26
289	6/18/2020	3	5	16.63	Yes	10.18	-6.45
290	6/18/2020	3	6	16.02	Yes	10.18	-5.84
291	6/18/2020	3	7	13.81	Yes	10.18	-3.63
292	6/18/2020	3	8	13.81	Yes	10.18	-3.63
293	6/18/2020	3	9	13.81	Yes	10.18	-3.63
294	6/18/2020	3	10	13.67	Yes	10.18	-3.49
295	6/18/2020	3	11	13.81	Yes	10.18	-3.63
296	6/18/2020	3	12	13.32	Yes	10.18	-3.14
297	6/18/2020	4	1	15.59	Yes	10.18	-5.41
298	6/18/2020	4	2	14.76	Yes	10.18	-4.58
299	6/18/2020	4	3	16.19	Yes	10.18	-6.01
300	6/18/2020	4	4	16.29	Yes	10.18	-6.11

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
301	6/18/2020	4	5	16.64	Yes	10.18	-6.46
302	6/18/2020	4	6	16.82	Yes	10.18	-6.64
303	6/18/2020	4	7	16.56	Yes	10.18	-6.38
304	6/18/2020	4	8	17.67	Yes	10.18	-7.49
305	6/18/2020	4	9	16.56	Yes	10.18	-6.38
306	6/18/2020	4	10	16.69	Yes	10.18	-6.51
307	6/18/2020	4	11	17.88	Yes	10.18	-7.70
308	6/18/2020	4	12	18.06	Yes	10.18	-7.88
309	6/18/2020	5	1	19.33	Yes	10.18	-9.15
310	6/18/2020	5	2	18.13	Yes	10.18	-7.95
311	6/18/2020	5	3	18.80	Yes	10.18	-8.62
312	6/18/2020	5	4	17.73	Yes	10.18	-7.55
313	6/18/2020	5	5	18.09	Yes	10.18	-7.91
314	6/18/2020	5	6	20.21	Yes	10.18	-10.03
315	6/18/2020	5	7	17.41	Yes	10.18	-7.23
316	6/18/2020	5	8	22.92	Yes	10.18	-12.74
317	6/18/2020	5	9	22.92	Yes	10.18	-12.74
318	6/18/2020	5	10	22.50	Yes	10.18	-12.32
319	6/18/2020	5	11	21.06	Yes	10.18	-10.88
320	6/18/2020	5	12	23.01	Yes	10.18	-12.83
321	6/18/2020	6	1	19.35	Yes	10.18	-9.17
322	6/18/2020	6	2	18.00	Yes	10.18	-7.82
323	6/18/2020	6	3	19.20	Yes	10.18	-9.02
324	6/18/2020	6	4	20.32	Yes	10.18	-10.14
325	6/18/2020	6	5	21.59	Yes	10.18	-11.41
326	6/18/2020	6	6	23.33	Yes	10.18	-13.15
327	6/18/2020	6	7	25.49	Yes	10.18	-15.31
328	6/18/2020	6	8	23.84	Yes	10.18	-13.66
329	6/18/2020	6	9	23.84	Yes	10.18	-13.66
330	6/18/2020	6	10	22.75	Yes	10.18	-12.57
331	6/18/2020	6	11	20.49	Yes	10.18	-10.31
332	6/18/2020	6	12	27.24	Yes	10.18	-17.06
333	6/18/2020	7	1	44.56	Yes	10.18	-34.38
334	6/18/2020	7	2	51.67	Yes	10.18	-41.49
335	6/18/2020	7	3	51.48	Yes	10.18	-41.30
336	6/18/2020	7	4	48.83	Yes	10.18	-38.65
337	6/18/2020	7	5	37.38	Yes	10.18	-27.20
338	6/18/2020	7	6	33.22	Yes	10.18	-23.04

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
339	6/18/2020	7	7	28.51	Yes	10.18	-18.33
340	6/18/2020	7	8	23.65	Yes	10.18	-13.47
341	6/18/2020	7	9	20.22	Yes	10.18	-10.04
342	6/18/2020	7	10	17.83	Yes	10.18	-7.65
343	6/18/2020	7	11	16.48	Yes	10.18	-6.30
344	6/18/2020	7	12	19.36	Yes	10.18	-9.18
345	6/18/2020	8	1	18.27	Yes	10.18	-8.09
346	6/18/2020	8	2	16.22	Yes	10.18	-6.04
347	6/18/2020	8	3	16.98	Yes	10.18	-6.80
348	6/18/2020	8	4	15.11	Yes	10.18	-4.93
349	6/18/2020	8	5	15.11	Yes	10.18	-4.93
350	6/18/2020	8	6	14.66	Yes	10.18	-4.48
351	6/18/2020	8	7	15.42	Yes	10.18	-5.24
352	6/18/2020	8	8	12.98	Yes	10.18	-2.80
353	6/18/2020	8	9	8.59	Yes	10.18	1.59
354	6/18/2020	8	10	5.00	Yes	10.18	5.18
355	6/18/2020	8	11	5.08	Yes	10.18	5.10
356	6/18/2020	8	12	5.71	Yes	10.18	4.47
357	6/18/2020	9	1	12.75	Yes	10.18	-2.57
358	6/18/2020	9	2	10.18	Yes	10.18	0.00
359	6/18/2020	9	3	11.08	Yes	10.18	-0.90
360	6/18/2020	9	4	11.00	Yes	10.18	-0.82
361	6/18/2020	9	5	11.64	Yes	10.18	-1.46
362	6/18/2020	9	6	12.24	Yes	10.18	-2.06
363	6/18/2020	9	7	12.23	Yes	10.18	-2.05
364	6/18/2020	9	8	13.36	Yes	10.18	-3.18
365	6/18/2020	9	9	13.28	Yes	10.18	-3.10
366	6/18/2020	9	10	12.78	Yes	10.18	-2.60
367	6/18/2020	9	11	12.96	Yes	10.18	-2.78
368	6/18/2020	9	12	13.26	Yes	10.18	-3.08
369	6/18/2020	10	1	13.95	Yes	10.18	-3.77
370	6/18/2020	10	2	13.95	Yes	10.18	-3.77
371	6/18/2020	10	3	13.72	Yes	10.18	-3.54
372	6/18/2020	10	4	14.22	Yes	10.18	-4.04
373	6/18/2020	10	5	15.02	Yes	10.18	-4.84
374	6/18/2020	10	6	15.57	Yes	10.18	-5.39
375	6/18/2020	10	7	15.74	Yes	10.18	-5.56
376	6/18/2020	10	8	15.01	Yes	10.18	-4.83

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
377	6/18/2020	10	9	15.01	Yes	10.18	-4.83
378	6/18/2020	10	10	14.95	Yes	10.18	-4.77
379	6/18/2020	10	11	15.53	Yes	10.18	-5.35
380	6/18/2020	10	12	15.95	Yes	10.18	-5.77
381	6/18/2020	11	1	15.89	Yes	10.18	-5.71
382	6/18/2020	11	2	16.30	Yes	10.18	-6.12
383	6/18/2020	11	3	16.47	Yes	10.18	-6.29
384	6/18/2020	11	4	16.60	Yes	10.18	-6.42
385	6/18/2020	11	5	16.67	Yes	10.18	-6.49
386	6/18/2020	11	6	20.80	Yes	10.18	-10.62
387	6/18/2020	11	7	21.38	Yes	10.18	-11.20
388	6/18/2020	11	8	17.56	Yes	10.18	-7.38
389	6/18/2020	11	9	17.69	Yes	10.18	-7.51
390	6/18/2020	11	10	22.00	Yes	10.18	-11.82
391	6/18/2020	11	11	21.85	Yes	10.18	-11.67
392	6/18/2020	11	12	22.02	Yes	10.18	-11.84
393	6/18/2020	12	1	17.81	Yes	10.18	-7.63
394	6/18/2020	12	2	16.85	Yes	10.18	-6.67
395	6/18/2020	12	3	17.04	Yes	10.18	-6.86
396	6/18/2020	12	4	17.54	Yes	10.18	-7.36
397	6/18/2020	12	5	17.38	Yes	10.18	-7.20
398	6/18/2020	12	6	19.11	Yes	10.18	-8.93
399	6/18/2020	12	7	19.57	Yes	10.18	-9.39
400	6/18/2020	12	8	21.52	Yes	10.18	-11.34
401	6/18/2020	12	9	21.52	Yes	10.18	-11.34
402	6/18/2020	12	10	22.71	Yes	10.18	-12.53
403	6/18/2020	12	11	23.52	Yes	10.18	-13.34
404	6/18/2020	12	12	21.85	Yes	10.18	-11.67
405	6/18/2020	13	1	18.85	Yes	10.18	-8.67
406	6/18/2020	13	2	16.61	Yes	10.18	-6.43
407	6/18/2020	13	3	17.58	Yes	10.18	-7.40
408	6/18/2020	13	4	17.44	Yes	10.18	-7.26
409	6/18/2020	13	5	19.49	Yes	10.18	-9.31
410	6/18/2020	13	6	19.52	Yes	10.18	-9.34
411	6/18/2020	13	7	18.91	Yes	10.18	-8.73
412	6/18/2020	13	8	19.46	Yes	10.18	-9.28
413	6/18/2020	13	9	19.48	Yes	10.18	-9.30
414	6/18/2020	13	10	20.74	Yes	10.18	-10.56

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
415	6/18/2020	13	11	20.11	Yes	10.18	-9.93
416	6/18/2020	13	12	22.11	Yes	10.18	-11.93
417	6/18/2020	14	1	21.80	Yes	10.18	-11.62
418	6/18/2020	14	2	21.80	Yes	10.18	-11.62
419	6/18/2020	14	3	22.03	Yes	10.18	-11.85
420	6/18/2020	14	4	24.17	Yes	10.18	-13.99
421	6/18/2020	14	5	25.02	Yes	10.18	-14.84
422	6/18/2020	14	6	24.75	Yes	10.18	-14.57
423	6/18/2020	14	7	25.15	Yes	10.18	-14.97
424	6/18/2020	14	8	25.15	Yes	10.18	-14.97
425	6/18/2020	14	9	25.58	Yes	10.18	-15.40
426	6/18/2020	14	10	24.77	Yes	10.18	-14.59
427	6/18/2020	14	11	25.03	Yes	10.18	-14.85
428	6/18/2020	14	12	25.27	Yes	10.18	-15.09
429	6/18/2020	15	1	23.61	Yes	10.18	-13.43
430	6/18/2020	15	2	23.30	Yes	10.18	-13.12
431	6/18/2020	15	3	23.30	Yes	10.18	-13.12
432	6/18/2020	15	4	24.35	Yes	10.18	-14.17
433	6/18/2020	15	5	24.34	Yes	10.18	-14.16
434	6/18/2020	15	6	28.46	Yes	10.18	-18.28
435	6/18/2020	15	7	28.46	Yes	10.18	-18.28
436	6/18/2020	15	8	28.46	Yes	10.18	-18.28
437	6/18/2020	15	9	35.39	Yes	10.18	-25.21
438	6/18/2020	15	10	29.25	Yes	10.18	-19.07
439	6/18/2020	15	11	29.16	Yes	10.18	-18.98
440	6/18/2020	15	12	38.24	Yes	10.18	-28.06
441	6/18/2020	16	1	33.61	Yes	10.18	-23.43
442	6/18/2020	16	2	20.84	Yes	10.18	-10.66
443	6/18/2020	16	3	20.49	Yes	10.18	-10.31
444	6/18/2020	16	4	28.02	Yes	10.18	-17.84
445	6/18/2020	16	5	16.94	Yes	10.18	-6.76
446	6/18/2020	16	6	20.36	Yes	10.18	-10.18
447	6/18/2020	16	7	23.52	Yes	10.18	-13.34
448	6/18/2020	16	8	21.71	Yes	10.18	-11.53
449	6/18/2020	16	9	22.14	Yes	10.18	-11.96
450	6/18/2020	16	10	24.90	Yes	10.18	-14.72
451	6/18/2020	16	11	24.90	Yes	10.18	-14.72
452	6/18/2020	16	12	24.89	Yes	10.18	-14.71

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
453	6/18/2020	17	1	22.43	Yes	10.18	-12.25
454	6/18/2020	17	2	21.62	Yes	10.18	-11.44
455	6/18/2020	17	3	22.57	Yes	10.18	-12.39
456	6/18/2020	17	4	23.62	Yes	10.18	-13.44
457	6/18/2020	17	5	25.20	Yes	10.18	-15.02
458	6/18/2020	17	6	25.27	Yes	10.18	-15.09
459	6/18/2020	17	7	25.76	Yes	10.18	-15.58
460	6/18/2020	17	8	25.56	Yes	10.18	-15.38
461	6/18/2020	17	9	25.79	Yes	10.18	-15.61
462	6/18/2020	17	10	27.62	Yes	10.18	-17.44
463	6/18/2020	17	11	27.62	Yes	10.18	-17.44
464	6/18/2020	17	12	27.94	Yes	10.18	-17.76
465	6/18/2020	18	1	59.54	Yes	10.18	-49.36
466	6/18/2020	18	2	54.59	Yes	10.18	-44.41
467	6/18/2020	18	3	53.84	Yes	10.18	-43.66
468	6/18/2020	18	4	40.18	Yes	10.18	-30.00
469	6/18/2020	18	5	29.70	Yes	10.18	-19.52
470	6/18/2020	18	6	31.13	Yes	10.18	-20.95
471	6/18/2020	18	7	27.96	Yes	10.18	-17.78
472	6/18/2020	18	8	28.36	Yes	10.18	-18.18
473	6/18/2020	18	9	28.42	Yes	10.18	-18.24
474	6/18/2020	18	10	33.20	Yes	10.18	-23.02
475	6/18/2020	18	11	32.98	Yes	10.18	-22.80
476	6/18/2020	18	12	31.45	Yes	10.18	-21.27
477	6/18/2020	19	1	18.93	Yes	10.18	-8.75
478	6/18/2020	19	2	20.34	Yes	10.18	-10.16
479	6/18/2020	19	3	21.04	Yes	10.18	-10.86
480	6/18/2020	23	3	27.35	Yes	10.18	-17.17
481	6/18/2020	23	4	25.64	Yes	10.18	-15.46
482	6/18/2020	23	5	23.89	Yes	10.18	-13.71
483	6/18/2020	23	6	22.96	Yes	10.18	-12.78
484	6/18/2020	23	7	22.68	Yes	10.18	-12.50
485	6/18/2020	23	8	22.52	Yes	10.18	-12.34
486	6/18/2020	23	9	20.99	Yes	10.18	-10.81
487	6/18/2020	23	10	18.72	Yes	10.18	-8.54
488	6/18/2020	23	11	20.07	Yes	10.18	-9.89
489	6/18/2020	23	12	19.95	Yes	10.18	-9.77
490	6/18/2020	24	1	23.89	Yes	10.18	-13.71

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
491	6/18/2020	24	2	24.59	Yes	10.18	-14.41
492	6/18/2020	24	3	23.68	Yes	10.18	-13.50
493	6/18/2020	24	4	22.24	Yes	10.18	-12.06
494	6/18/2020	24	5	22.10	Yes	10.18	-11.92
495	6/18/2020	24	6	21.46	Yes	10.18	-11.28
496	6/18/2020	24	7	21.58	Yes	10.18	-11.40
497	6/18/2020	24	8	21.41	Yes	10.18	-11.23
498	6/18/2020	24	9	21.28	Yes	10.18	-11.10
499	6/18/2020	24	10	21.53	Yes	10.18	-11.35
500	6/18/2020	24	11	22.25	Yes	10.18	-12.07
501	6/18/2020	24	12	18.56	Yes	10.18	-8.38
502	6/19/2020	1	1	24.81	Yes	10.07	-14.74
503	6/19/2020	1	2	31.39	Yes	10.07	-21.32
504	6/19/2020	1	3	34.16	Yes	10.07	-24.09
505	6/19/2020	1	4	28.31	Yes	10.07	-18.24
506	6/19/2020	1	5	24.84	Yes	10.07	-14.77
507	6/19/2020	1	6	24.84	Yes	10.07	-14.77
508	6/19/2020	1	7	24.62	Yes	10.07	-14.55
509	6/19/2020	1	8	24.62	Yes	10.07	-14.55
510	6/19/2020	1	9	23.60	Yes	10.07	-13.53
511	6/19/2020	1	10	20.79	Yes	10.07	-10.72
512	6/19/2020	1	11	20.85	Yes	10.07	-10.78
513	6/19/2020	1	12	20.79	Yes	10.07	-10.72
514	6/19/2020	2	1	24.65	Yes	10.07	-14.58
515	6/19/2020	2	2	24.93	Yes	10.07	-14.86
516	6/19/2020	2	3	25.03	Yes	10.07	-14.96
517	6/19/2020	2	4	24.03	Yes	10.07	-13.96
518	6/19/2020	2	5	23.38	Yes	10.07	-13.31
519	6/19/2020	2	6	21.73	Yes	10.07	-11.66
520	6/19/2020	2	7	20.93	Yes	10.07	-10.86
521	6/19/2020	2	8	21.07	Yes	10.07	-11.00
522	6/19/2020	2	9	23.67	Yes	10.07	-13.60
523	6/19/2020	2	10	22.59	Yes	10.07	-12.52
524	6/19/2020	2	11	21.32	Yes	10.07	-11.25
525	6/19/2020	2	12	22.82	Yes	10.07	-12.75
526	6/19/2020	3	1	23.07	Yes	10.07	-13.00
527	6/19/2020	3	2	22.97	Yes	10.07	-12.90
528	6/19/2020	3	3	25.16	Yes	10.07	-15.09

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
529	6/19/2020	3	4	31.17	Yes	10.07	-21.10
530	6/19/2020	3	5	27.95	Yes	10.07	-17.88
531	6/19/2020	3	6	23.55	Yes	10.07	-13.48
532	6/19/2020	3	7	22.81	Yes	10.07	-12.74
533	6/19/2020	3	8	22.81	Yes	10.07	-12.74
534	6/19/2020	3	9	23.08	Yes	10.07	-13.01
535	6/19/2020	3	10	23.02	Yes	10.07	-12.95
536	6/19/2020	3	11	20.00	Yes	10.07	-9.93
537	6/19/2020	3	12	20.00	Yes	10.07	-9.93
538	6/19/2020	4	1	24.17	Yes	10.07	-14.10
539	6/19/2020	4	2	21.50	Yes	10.07	-11.43
540	6/19/2020	4	3	22.81	Yes	10.07	-12.74
541	6/19/2020	4	4	25.80	Yes	10.07	-15.73
542	6/19/2020	4	5	25.86	Yes	10.07	-15.79
543	6/19/2020	4	6	26.06	Yes	10.07	-15.99
544	6/19/2020	4	7	23.47	Yes	10.07	-13.40
545	6/19/2020	4	8	23.46	Yes	10.07	-13.39
546	6/19/2020	4	9	22.69	Yes	10.07	-12.62
547	6/19/2020	4	10	23.02	Yes	10.07	-12.95
548	6/19/2020	4	11	23.74	Yes	10.07	-13.67
549	6/19/2020	4	12	23.02	Yes	10.07	-12.95
550	6/19/2020	5	1	21.79	Yes	10.07	-11.72
551	6/19/2020	5	2	19.72	Yes	10.07	-9.65
552	6/19/2020	5	3	18.74	Yes	10.07	-8.67
553	6/19/2020	5	4	18.62	Yes	10.07	-8.55
554	6/19/2020	5	5	18.62	Yes	10.07	-8.55
555	6/19/2020	5	6	18.92	Yes	10.07	-8.85
556	6/19/2020	5	7	18.77	Yes	10.07	-8.70
557	6/19/2020	5	8	19.01	Yes	10.07	-8.94
558	6/19/2020	5	9	19.29	Yes	10.07	-9.22
559	6/19/2020	5	10	19.39	Yes	10.07	-9.32
560	6/19/2020	5	11	19.32	Yes	10.07	-9.25
561	6/19/2020	5	12	21.01	Yes	10.07	-10.94
562	6/19/2020	6	1	19.60	Yes	10.07	-9.53
563	6/19/2020	6	2	19.41	Yes	10.07	-9.34
564	6/19/2020	6	3	19.60	Yes	10.07	-9.53
565	6/19/2020	6	4	20.00	Yes	10.07	-9.93
566	6/19/2020	6	5	21.37	Yes	10.07	-11.30

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
567	6/19/2020	6	6	21.37	Yes	10.07	-11.30
568	6/19/2020	6	7	20.01	Yes	10.07	-9.94
569	6/19/2020	6	8	23.73	Yes	10.07	-13.66
570	6/19/2020	6	9	23.60	Yes	10.07	-13.53
571	6/19/2020	6	10	23.09	Yes	10.07	-13.02
572	6/19/2020	6	11	23.02	Yes	10.07	-12.95
573	6/19/2020	6	12	23.88	Yes	10.07	-13.81
574	6/19/2020	7	1	40.82	Yes	10.07	-30.75
575	6/19/2020	7	2	40.92	Yes	10.07	-30.85
576	6/19/2020	7	3	52.32	Yes	10.07	-42.25
577	6/19/2020	7	4	59.20	Yes	10.07	-49.13
578	6/19/2020	7	5	49.80	Yes	10.07	-39.73
579	6/19/2020	7	9	24.58	Yes	10.07	-14.51
580	6/19/2020	7	10	21.53	Yes	10.07	-11.46
581	6/19/2020	7	11	16.21	Yes	10.07	-6.14
582	6/19/2020	7	12	14.28	Yes	10.07	-4.21
583	6/19/2020	8	1	29.80	Yes	10.07	-19.73
584	6/19/2020	8	2	18.53	Yes	10.07	-8.46
585	6/19/2020	8	3	18.32	Yes	10.07	-8.25
586	6/19/2020	8	4	15.69	Yes	10.07	-5.62
587	6/19/2020	8	5	15.65	Yes	10.07	-5.58
588	6/19/2020	8	6	18.50	Yes	10.07	-8.43
589	6/19/2020	8	7	16.17	Yes	10.07	-6.10
590	6/19/2020	8	8	14.39	Yes	10.07	-4.32
591	6/19/2020	8	9	13.31	Yes	10.07	-3.24
592	6/19/2020	8	10	11.63	Yes	10.07	-1.56
593	6/19/2020	8	11	12.39	Yes	10.07	-2.32
594	6/19/2020	8	12	11.96	Yes	10.07	-1.89
595	6/19/2020	9	1	17.47	Yes	10.07	-7.40
596	6/19/2020	9	2	13.75	Yes	10.07	-3.68
597	6/19/2020	9	3	21.12	Yes	10.07	-11.05
598	6/19/2020	9	4	21.10	Yes	10.07	-11.03
599	6/19/2020	9	5	20.19	Yes	10.07	-10.12
600	6/19/2020	9	6	20.51	Yes	10.07	-10.44
601	6/19/2020	9	7	18.68	Yes	10.07	-8.61
602	6/19/2020	9	8	20.01	Yes	10.07	-9.94
603	6/19/2020	9	9	17.00	Yes	10.07	-6.93
604	6/19/2020	9	10	19.60	Yes	10.07	-9.53

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
605	6/19/2020	9	11	19.69	Yes	10.07	-9.62
606	6/19/2020	9	12	19.32	Yes	10.07	-9.25
607	6/19/2020	10	1	24.44	Yes	10.07	-14.37
608	6/19/2020	10	2	20.12	Yes	10.07	-10.05
609	6/19/2020	10	3	21.92	Yes	10.07	-11.85
610	6/19/2020	10	4	21.60	Yes	10.07	-11.53
611	6/19/2020	10	5	21.60	Yes	10.07	-11.53
612	6/19/2020	10	6	21.95	Yes	10.07	-11.88
613	6/19/2020	10	7	22.89	Yes	10.07	-12.82
614	6/19/2020	10	8	23.08	Yes	10.07	-13.01
615	6/19/2020	10	9	23.11	Yes	10.07	-13.04
616	6/19/2020	10	10	23.02	Yes	10.07	-12.95
617	6/19/2020	10	11	23.04	Yes	10.07	-12.97
618	6/19/2020	10	12	23.87	Yes	10.07	-13.80
619	6/19/2020	11	1	23.35	Yes	10.07	-13.28
620	6/19/2020	11	2	23.38	Yes	10.07	-13.31
621	6/19/2020	11	3	23.37	Yes	10.07	-13.30
622	6/19/2020	11	4	17.47	Yes	10.07	-7.40
623	6/19/2020	11	5	18.46	Yes	10.07	-8.39
624	6/19/2020	11	6	18.43	Yes	10.07	-8.36
625	6/19/2020	11	7	22.60	Yes	10.07	-12.53
626	6/19/2020	11	8	22.60	Yes	10.07	-12.53
627	6/19/2020	11	9	22.29	Yes	10.07	-12.22
628	6/19/2020	11	10	18.46	Yes	10.07	-8.39
629	6/19/2020	11	11	18.48	Yes	10.07	-8.41
630	6/19/2020	11	12	18.46	Yes	10.07	-8.39
631	6/19/2020	12	1	22.12	Yes	10.07	-12.05
632	6/19/2020	12	2	22.58	Yes	10.07	-12.51
633	6/19/2020	12	3	23.10	Yes	10.07	-13.03
634	6/19/2020	12	4	23.55	Yes	10.07	-13.48
635	6/19/2020	12	5	23.89	Yes	10.07	-13.82
636	6/19/2020	12	6	24.82	Yes	10.07	-14.75
637	6/19/2020	12	7	21.56	Yes	10.07	-11.49
638	6/19/2020	12	8	19.47	Yes	10.07	-9.40
639	6/19/2020	12	9	19.12	Yes	10.07	-9.05
640	6/19/2020	12	10	24.92	Yes	10.07	-14.85
641	6/19/2020	12	11	24.54	Yes	10.07	-14.47
642	6/19/2020	12	12	24.40	Yes	10.07	-14.33

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
643	6/19/2020	13	1	23.23	Yes	10.07	-13.16
644	6/19/2020	13	2	21.57	Yes	10.07	-11.50
645	6/19/2020	13	3	22.51	Yes	10.07	-12.44
646	6/19/2020	13	4	21.27	Yes	10.07	-11.20
647	6/19/2020	13	5	22.64	Yes	10.07	-12.57
648	6/19/2020	13	6	23.13	Yes	10.07	-13.06
649	6/19/2020	13	7	23.40	Yes	10.07	-13.33
650	6/19/2020	13	8	24.24	Yes	10.07	-14.17
651	6/19/2020	13	9	23.82	Yes	10.07	-13.75
652	6/19/2020	13	10	24.32	Yes	10.07	-14.25
653	6/19/2020	13	11	24.52	Yes	10.07	-14.45
654	6/19/2020	13	12	24.59	Yes	10.07	-14.52
655	6/19/2020	14	1	21.70	Yes	10.07	-11.63
656	6/19/2020	14	2	23.01	Yes	10.07	-12.94
657	6/19/2020	14	3	24.26	Yes	10.07	-14.19
658	6/19/2020	14	4	24.76	Yes	10.07	-14.69
659	6/19/2020	14	5	25.40	Yes	10.07	-15.33
660	6/19/2020	14	6	25.46	Yes	10.07	-15.39
661	6/19/2020	14	7	25.87	Yes	10.07	-15.80
662	6/19/2020	14	8	25.89	Yes	10.07	-15.82
663	6/19/2020	14	9	25.86	Yes	10.07	-15.79
664	6/19/2020	14	10	26.77	Yes	10.07	-16.70
665	6/19/2020	14	11	26.86	Yes	10.07	-16.79
666	6/19/2020	14	12	27.89	Yes	10.07	-17.82
667	6/19/2020	15	1	25.03	Yes	10.07	-14.96
668	6/19/2020	15	2	24.66	Yes	10.07	-14.59
669	6/19/2020	15	3	25.51	Yes	10.07	-15.44
670	6/19/2020	15	4	26.15	Yes	10.07	-16.08
671	6/19/2020	15	5	26.52	Yes	10.07	-16.45
672	6/19/2020	15	6	26.76	Yes	10.07	-16.69
673	6/19/2020	15	7	26.34	Yes	10.07	-16.27
674	6/19/2020	15	8	26.97	Yes	10.07	-16.90
675	6/19/2020	15	9	34.02	Yes	10.07	-23.95
676	6/19/2020	15	10	36.62	Yes	10.07	-26.55
677	6/19/2020	15	11	36.62	Yes	10.07	-26.55
678	6/19/2020	15	12	36.12	Yes	10.07	-26.05
679	6/19/2020	16	1	25.73	Yes	10.07	-15.66
680	6/19/2020	16	2	22.99	Yes	10.07	-12.92

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
681	6/19/2020	16	3	23.41	Yes	10.07	-13.34
682	6/19/2020	16	4	24.75	Yes	10.07	-14.68
683	6/19/2020	16	5	26.20	Yes	10.07	-16.13
684	6/19/2020	16	6	30.00	Yes	10.07	-19.93
685	6/19/2020	16	7	24.07	Yes	10.07	-14.00
686	6/19/2020	16	8	26.96	Yes	10.07	-16.89
687	6/19/2020	16	9	32.61	Yes	10.07	-22.54
688	6/19/2020	22	1	28.99	Yes	10.07	-18.92
689	6/19/2020	22	2	28.83	Yes	10.07	-18.76
690	6/19/2020	22	3	29.13	Yes	10.07	-19.06
691	6/19/2020	22	4	35.86	Yes	10.07	-25.79
692	6/19/2020	22	5	34.45	Yes	10.07	-24.38
693	6/19/2020	22	6	34.45	Yes	10.07	-24.38
694	6/19/2020	22	7	33.77	Yes	10.07	-23.70
695	6/19/2020	22	8	31.07	Yes	10.07	-21.00
696	6/19/2020	22	9	31.07	Yes	10.07	-21.00
697	6/19/2020	22	10	25.97	Yes	10.07	-15.90
698	6/19/2020	22	11	24.98	Yes	10.07	-14.91
699	6/19/2020	22	12	23.32	Yes	10.07	-13.25
700	6/19/2020	23	1	31.73	Yes	10.07	-21.66
701	6/19/2020	23	2	30.96	Yes	10.07	-20.89
702	6/19/2020	23	3	25.46	Yes	10.07	-15.39
703	6/19/2020	23	4	24.05	Yes	10.07	-13.98
704	6/19/2020	23	5	24.23	Yes	10.07	-14.16
705	6/19/2020	23	6	24.17	Yes	10.07	-14.10
706	6/19/2020	23	7	22.09	Yes	10.07	-12.02
707	6/19/2020	23	8	22.51	Yes	10.07	-12.44
708	6/19/2020	23	9	22.45	Yes	10.07	-12.38
709	6/19/2020	23	10	20.00	Yes	10.07	-9.93
710	6/19/2020	23	11	21.49	Yes	10.07	-11.42
711	6/19/2020	23	12	21.45	Yes	10.07	-11.38
712	6/19/2020	24	1	23.71	Yes	10.07	-13.64
713	6/19/2020	24	2	25.72	Yes	10.07	-15.65
714	6/19/2020	24	3	23.73	Yes	10.07	-13.66
715	6/19/2020	24	4	23.41	Yes	10.07	-13.34
716	6/19/2020	24	5	23.41	Yes	10.07	-13.34
717	6/19/2020	24	6	23.41	Yes	10.07	-13.34
718	6/19/2020	24	7	19.98	Yes	10.07	-9.91

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
719	6/19/2020	24	8	19.98	Yes	10.07	-9.91
720	6/19/2020	24	9	19.14	Yes	10.07	-9.07
721	6/19/2020	24	10	18.77	Yes	10.07	-8.70
722	6/19/2020	24	11	19.60	Yes	10.07	-9.53
723	6/19/2020	24	12	19.60	Yes	10.07	-9.53
724	6/20/2020	1	1	21.32	Yes	10.05	-11.27
725	6/20/2020	1	2	22.84	Yes	10.05	-12.79
726	6/20/2020	1	3	22.80	Yes	10.05	-12.75
727	6/20/2020	1	4	21.87	Yes	10.05	-11.82
728	6/20/2020	1	5	21.90	Yes	10.05	-11.85
729	6/20/2020	1	6	21.75	Yes	10.05	-11.70
730	6/20/2020	1	7	18.52	Yes	10.05	-8.47
731	6/20/2020	1	8	15.41	Yes	10.05	-5.36
732	6/20/2020	1	9	17.28	Yes	10.05	-7.23
733	6/20/2020	1	10	16.31	Yes	10.05	-6.26
734	6/20/2020	1	11	16.31	Yes	10.05	-6.26
735	6/20/2020	1	12	15.06	Yes	10.05	-5.01
736	6/20/2020	2	1	18.62	Yes	10.05	-8.57
737	6/20/2020	2	2	19.31	Yes	10.05	-9.26
738	6/20/2020	2	3	16.19	Yes	10.05	-6.14
739	6/20/2020	2	4	15.94	Yes	10.05	-5.89
740	6/20/2020	2	5	18.28	Yes	10.05	-8.23
741	6/20/2020	2	6	18.28	Yes	10.05	-8.23
742	6/20/2020	2	7	17.99	Yes	10.05	-7.94
743	6/20/2020	2	8	18.78	Yes	10.05	-8.73
744	6/20/2020	2	9	17.18	Yes	10.05	-7.13
745	6/20/2020	2	10	17.60	Yes	10.05	-7.55
746	6/20/2020	2	11	15.60	Yes	10.05	-5.55
747	6/20/2020	2	12	14.89	Yes	10.05	-4.84
748	6/20/2020	3	1	19.84	Yes	10.05	-9.79
749	6/20/2020	3	2	21.31	Yes	10.05	-11.26
750	6/20/2020	3	3	21.30	Yes	10.05	-11.25
751	6/20/2020	3	4	20.44	Yes	10.05	-10.39
752	6/20/2020	3	5	19.38	Yes	10.05	-9.33
753	6/20/2020	3	6	19.20	Yes	10.05	-9.15
754	6/20/2020	3	7	18.46	Yes	10.05	-8.41
755	6/20/2020	3	8	18.94	Yes	10.05	-8.89
756	6/20/2020	3	9	18.05	Yes	10.05	-8.00

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
757	6/20/2020	3	10	19.09	Yes	10.05	-9.04
758	6/20/2020	3	11	18.36	Yes	10.05	-8.31
759	6/20/2020	3	12	15.59	Yes	10.05	-5.54
760	6/20/2020	4	1	15.40	Yes	10.05	-5.35
761	6/20/2020	4	2	15.40	Yes	10.05	-5.35
762	6/20/2020	4	3	15.56	Yes	10.05	-5.51
763	6/20/2020	4	4	18.68	Yes	10.05	-8.63
764	6/20/2020	4	5	18.68	Yes	10.05	-8.63
765	6/20/2020	4	6	15.48	Yes	10.05	-5.43
766	6/20/2020	4	7	16.97	Yes	10.05	-6.92
767	6/20/2020	4	8	17.88	Yes	10.05	-7.83
768	6/20/2020	4	9	16.97	Yes	10.05	-6.92
769	6/20/2020	4	10	16.90	Yes	10.05	-6.85
770	6/20/2020	4	11	16.08	Yes	10.05	-6.03
771	6/20/2020	4	12	15.33	Yes	10.05	-5.28
772	6/20/2020	5	1	14.55	Yes	10.05	-4.50
773	6/20/2020	5	2	14.55	Yes	10.05	-4.50
774	6/20/2020	5	3	16.01	Yes	10.05	-5.96
775	6/20/2020	5	4	17.48	Yes	10.05	-7.43
776	6/20/2020	5	5	17.16	Yes	10.05	-7.11
777	6/20/2020	5	6	17.49	Yes	10.05	-7.44
778	6/20/2020	5	7	17.12	Yes	10.05	-7.07
779	6/20/2020	5	8	18.18	Yes	10.05	-8.13
780	6/20/2020	5	9	17.82	Yes	10.05	-7.77
781	6/20/2020	5	10	17.71	Yes	10.05	-7.66
782	6/20/2020	5	11	17.70	Yes	10.05	-7.65
783	6/20/2020	5	12	18.26	Yes	10.05	-8.21
784	6/20/2020	6	1	19.85	Yes	10.05	-9.80
785	6/20/2020	6	2	19.67	Yes	10.05	-9.62
786	6/20/2020	6	3	21.48	Yes	10.05	-11.43
787	6/20/2020	6	4	21.20	Yes	10.05	-11.15
788	6/20/2020	6	5	34.48	Yes	10.05	-24.43
789	6/20/2020	6	6	34.43	Yes	10.05	-24.38
790	6/20/2020	6	7	23.23	Yes	10.05	-13.18
791	6/20/2020	6	8	25.20	Yes	10.05	-15.15
792	6/20/2020	6	9	21.31	Yes	10.05	-11.26
793	6/20/2020	6	10	21.86	Yes	10.05	-11.81
794	6/20/2020	6	11	20.23	Yes	10.05	-10.18

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
795	6/20/2020	6	12	21.17	Yes	10.05	-11.12
796	6/20/2020	7	1	38.67	Yes	10.05	-28.62
797	6/20/2020	7	2	37.73	Yes	10.05	-27.68
798	6/20/2020	7	3	37.83	Yes	10.05	-27.78
799	6/20/2020	7	4	36.80	Yes	10.05	-26.75
800	6/20/2020	7	5	28.94	Yes	10.05	-18.89
801	6/20/2020	7	6	20.53	Yes	10.05	-10.48
802	6/20/2020	7	7	22.03	Yes	10.05	-11.98
803	6/20/2020	7	8	19.48	Yes	10.05	-9.43
804	6/20/2020	7	9	18.86	Yes	10.05	-8.81
805	6/20/2020	7	10	16.20	Yes	10.05	-6.15
806	6/20/2020	7	11	15.85	Yes	10.05	-5.80
807	6/20/2020	7	12	16.11	Yes	10.05	-6.06
808	6/20/2020	8	1	17.25	Yes	10.05	-7.20
809	6/20/2020	8	2	21.29	Yes	10.05	-11.24
810	6/20/2020	8	3	21.29	Yes	10.05	-11.24
811	6/20/2020	8	4	17.97	Yes	10.05	-7.92
812	6/20/2020	8	5	14.75	Yes	10.05	-4.70
813	6/20/2020	8	6	14.01	Yes	10.05	-3.96
814	6/20/2020	8	7	10.82	Yes	10.05	-0.77
815	6/20/2020	8	8	2.55	Yes	10.05	7.50
816	6/20/2020	8	9	0.00	Yes	10.05	10.05
817	6/20/2020	8	10	0.05	Yes	10.05	10.00
818	6/20/2020	8	11	-0.01	Yes	10.05	10.06
819	6/20/2020	8	12	0.00	Yes	10.05	10.05
820	6/20/2020	9	1	2.41	Yes	10.05	7.64
821	6/20/2020	9	2	3.62	Yes	10.05	6.43
822	6/20/2020	9	3	5.95	Yes	10.05	4.10
823	6/20/2020	9	4	5.93	Yes	10.05	4.12
824	6/20/2020	9	5	3.55	Yes	10.05	6.50
825	6/20/2020	9	6	3.55	Yes	10.05	6.50
826	6/20/2020	9	7	0.05	Yes	10.05	10.00
827	6/20/2020	9	8	0.05	Yes	10.05	10.00
828	6/20/2020	9	9	2.41	Yes	10.05	7.64
829	6/20/2020	9	10	3.54	Yes	10.05	6.51
830	6/20/2020	9	11	3.54	Yes	10.05	6.51
831	6/20/2020	9	12	4.77	Yes	10.05	5.28
832	6/20/2020	10	1	9.85	Yes	10.05	0.20

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
833	6/20/2020	10	2	9.85	Yes	10.05	0.20
834	6/20/2020	10	3	11.00	Yes	10.05	-0.95
835	6/20/2020	10	4	12.97	Yes	10.05	-2.92
836	6/20/2020	10	5	12.97	Yes	10.05	-2.92
837	6/20/2020	10	6	15.36	Yes	10.05	-5.31
838	6/20/2020	10	7	14.87	Yes	10.05	-4.82
839	6/20/2020	10	8	16.84	Yes	10.05	-6.79
840	6/20/2020	10	9	16.30	Yes	10.05	-6.25
841	6/20/2020	10	10	24.30	Yes	10.05	-14.25
842	6/20/2020	10	11	22.33	Yes	10.05	-12.28
843	6/20/2020	10	12	24.03	Yes	10.05	-13.98
844	6/20/2020	11	1	22.70	Yes	10.05	-12.65
845	6/20/2020	11	2	20.85	Yes	10.05	-10.80
846	6/20/2020	11	3	21.31	Yes	10.05	-11.26
847	6/20/2020	11	4	21.03	Yes	10.05	-10.98
848	6/20/2020	11	5	21.31	Yes	10.05	-11.26
849	6/20/2020	11	6	21.38	Yes	10.05	-11.33
850	6/20/2020	11	7	23.32	Yes	10.05	-13.27
851	6/20/2020	11	8	22.74	Yes	10.05	-12.69
852	6/20/2020	11	9	22.74	Yes	10.05	-12.69
853	6/20/2020	11	10	22.68	Yes	10.05	-12.63
854	6/20/2020	11	11	22.68	Yes	10.05	-12.63
855	6/20/2020	11	12	22.08	Yes	10.05	-12.03
856	6/20/2020	12	1	21.78	Yes	10.05	-11.73
857	6/20/2020	12	2	21.35	Yes	10.05	-11.30
858	6/20/2020	12	3	22.15	Yes	10.05	-12.10
859	6/20/2020	12	4	22.90	Yes	10.05	-12.85
860	6/20/2020	12	5	23.34	Yes	10.05	-13.29
861	6/20/2020	12	6	25.14	Yes	10.05	-15.09
862	6/20/2020	12	7	24.68	Yes	10.05	-14.63
863	6/20/2020	12	8	24.02	Yes	10.05	-13.97
864	6/20/2020	12	9	23.36	Yes	10.05	-13.31
865	6/20/2020	12	10	25.75	Yes	10.05	-15.70
866	6/20/2020	12	11	22.07	Yes	10.05	-12.02
867	6/20/2020	12	12	21.51	Yes	10.05	-11.46
868	6/20/2020	13	1	20.81	Yes	10.05	-10.76
869	6/20/2020	13	2	16.64	Yes	10.05	-6.59
870	6/20/2020	13	3	16.11	Yes	10.05	-6.06

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
871	6/20/2020	13	4	18.48	Yes	10.05	-8.43
872	6/20/2020	13	5	17.17	Yes	10.05	-7.12
873	6/20/2020	13	6	20.19	Yes	10.05	-10.14
874	6/20/2020	13	7	21.33	Yes	10.05	-11.28
875	6/20/2020	13	8	21.54	Yes	10.05	-11.49
876	6/20/2020	13	9	23.16	Yes	10.05	-13.11
877	6/20/2020	13	10	23.71	Yes	10.05	-13.66
878	6/20/2020	13	11	21.16	Yes	10.05	-11.11
879	6/20/2020	13	12	22.31	Yes	10.05	-12.26
880	6/20/2020	14	1	19.77	Yes	10.05	-9.72
881	6/20/2020	14	2	20.30	Yes	10.05	-10.25
882	6/20/2020	14	3	22.55	Yes	10.05	-12.50
883	6/20/2020	14	4	14.62	Yes	10.05	-4.57
884	6/20/2020	14	5	15.62	Yes	10.05	-5.57
885	6/20/2020	14	6	16.28	Yes	10.05	-6.23
886	6/20/2020	14	7	20.40	Yes	10.05	-10.35
887	6/20/2020	14	8	21.15	Yes	10.05	-11.10
888	6/20/2020	14	9	21.62	Yes	10.05	-11.57
889	6/20/2020	14	10	23.15	Yes	10.05	-13.10
890	6/20/2020	14	11	23.37	Yes	10.05	-13.32
891	6/20/2020	14	12	23.25	Yes	10.05	-13.20
892	6/20/2020	15	1	18.20	Yes	10.05	-8.15
893	6/20/2020	15	2	20.63	Yes	10.05	-10.58
894	6/20/2020	15	3	21.74	Yes	10.05	-11.69
895	6/20/2020	15	4	24.09	Yes	10.05	-14.04
896	6/20/2020	15	5	23.70	Yes	10.05	-13.65
897	6/20/2020	15	6	24.75	Yes	10.05	-14.70
898	6/20/2020	15	7	26.52	Yes	10.05	-16.47
899	6/20/2020	15	8	28.75	Yes	10.05	-18.70
900	6/20/2020	15	9	24.95	Yes	10.05	-14.90
901	6/20/2020	15	10	26.73	Yes	10.05	-16.68
902	6/20/2020	15	11	26.95	Yes	10.05	-16.90
903	6/20/2020	15	12	22.59	Yes	10.05	-12.54
904	6/20/2020	16	1	23.36	Yes	10.05	-13.31
905	6/20/2020	16	2	23.36	Yes	10.05	-13.31
906	6/20/2020	16	3	23.73	Yes	10.05	-13.68
907	6/20/2020	16	4	24.22	Yes	10.05	-14.17
908	6/20/2020	16	5	24.48	Yes	10.05	-14.43

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
909	6/20/2020	16	6	25.24	Yes	10.05	-15.19
910	6/20/2020	16	7	25.82	Yes	10.05	-15.77
911	6/20/2020	16	8	26.81	Yes	10.05	-16.76
912	6/20/2020	16	9	26.66	Yes	10.05	-16.61
913	6/20/2020	16	10	29.15	Yes	10.05	-19.10
914	6/20/2020	16	11	28.30	Yes	10.05	-18.25
915	6/20/2020	16	12	27.72	Yes	10.05	-17.67
916	6/20/2020	17	1	25.39	Yes	10.05	-15.34
917	6/20/2020	17	2	24.98	Yes	10.05	-14.93
918	6/20/2020	17	3	24.66	Yes	10.05	-14.61
919	6/20/2020	17	4	25.62	Yes	10.05	-15.57
920	6/20/2020	17	5	25.47	Yes	10.05	-15.42
921	6/20/2020	17	6	25.62	Yes	10.05	-15.57
922	6/20/2020	17	7	27.05	Yes	10.05	-17.00
923	6/20/2020	17	8	26.11	Yes	10.05	-16.06
924	6/20/2020	17	9	26.52	Yes	10.05	-16.47
925	6/20/2020	17	10	28.87	Yes	10.05	-18.82
926	6/20/2020	17	11	28.96	Yes	10.05	-18.91
927	6/20/2020	17	12	29.47	Yes	10.05	-19.42
928	6/20/2020	18	1	22.97	Yes	10.05	-12.92
929	6/20/2020	18	2	22.67	Yes	10.05	-12.62
930	6/20/2020	18	3	23.24	Yes	10.05	-13.19
931	6/20/2020	18	4	25.89	Yes	10.05	-15.84
932	6/20/2020	18	5	26.14	Yes	10.05	-16.09
933	6/20/2020	18	6	28.96	Yes	10.05	-18.91
934	6/20/2020	18	7	29.26	Yes	10.05	-19.21
935	6/20/2020	18	8	33.63	Yes	10.05	-23.58
936	6/20/2020	18	9	36.33	Yes	10.05	-26.28
937	6/20/2020	18	10	51.31	Yes	10.05	-41.26
938	6/20/2020	18	11	53.52	Yes	10.05	-43.47
939	6/20/2020	18	12	54.27	Yes	10.05	-44.22
940	6/20/2020	19	1	23.94	Yes	10.05	-13.89
941	6/20/2020	19	2	24.61	Yes	10.05	-14.56
942	6/20/2020	19	3	23.94	Yes	10.05	-13.89
943	6/20/2020	19	4	28.59	Yes	10.05	-18.54
944	6/20/2020	19	5	31.48	Yes	10.05	-21.43
945	6/20/2020	19	6	37.04	Yes	10.05	-26.99
946	6/20/2020	19	7	35.58	Yes	10.05	-25.53

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
947	6/20/2020	19	8	40.18	Yes	10.05	-30.13
948	6/20/2020	19	9	49.32	Yes	10.05	-39.27
949	6/20/2020	19	10	51.77	Yes	10.05	-41.72
950	6/20/2020	19	11	52.15	Yes	10.05	-42.10
951	6/20/2020	19	12	54.35	Yes	10.05	-44.30
952	6/20/2020	20	1	35.56	Yes	10.05	-25.51
953	6/20/2020	20	2	40.76	Yes	10.05	-30.71
954	6/20/2020	20	3	45.71	Yes	10.05	-35.66
955	6/20/2020	20	4	41.22	Yes	10.05	-31.17
956	6/20/2020	20	5	45.65	Yes	10.05	-35.60
957	6/20/2020	20	6	49.08	Yes	10.05	-39.03
958	6/20/2020	20	7	47.78	Yes	10.05	-37.73
959	6/20/2020	20	8	47.78	Yes	10.05	-37.73
960	6/20/2020	20	9	48.90	Yes	10.05	-38.85
961	6/20/2020	20	10	51.89	Yes	10.05	-41.84
962	6/20/2020	20	11	66.39	Yes	10.05	-56.34
963	6/20/2020	20	12	53.17	Yes	10.05	-43.12
964	6/20/2020	21	1	48.83	Yes	10.05	-38.78
965	6/20/2020	21	2	50.21	Yes	10.05	-40.16
966	6/20/2020	21	3	46.56	Yes	10.05	-36.51
967	6/20/2020	21	4	43.34	Yes	10.05	-33.29
968	6/20/2020	21	5	43.00	Yes	10.05	-32.95
969	6/20/2020	21	6	42.71	Yes	10.05	-32.66
970	6/23/2020	19	12	38.73	Yes	10.62	-28.11
971	6/23/2020	20	1	41.00	Yes	10.62	-30.38
972	6/23/2020	20	2	41.00	Yes	10.62	-30.38
973	6/23/2020	20	3	41.78	Yes	10.62	-31.16
974	6/23/2020	20	4	41.46	Yes	10.62	-30.84
975	6/23/2020	20	5	46.50	Yes	10.62	-35.88
976	6/23/2020	20	6	43.80	Yes	10.62	-33.18
977	6/23/2020	20	7	34.41	Yes	10.62	-23.79
978	6/23/2020	20	8	36.01	Yes	10.62	-25.39
979	6/23/2020	20	9	32.55	Yes	10.62	-21.93
980	6/23/2020	20	10	35.00	Yes	10.62	-24.38
981	6/23/2020	24	5	29.59	Yes	10.62	-18.97
982	6/23/2020	24	6	31.74	Yes	10.62	-21.12
983	6/23/2020	24	7	36.14	Yes	10.62	-25.52
984	6/23/2020	24	8	36.14	Yes	10.62	-25.52

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
985	6/23/2020	24	9	35.20	Yes	10.62	-24.58
986	6/23/2020	24	10	35.52	Yes	10.62	-24.90
987	6/23/2020	24	11	31.74	Yes	10.62	-21.12
988	6/23/2020	24	12	27.61	Yes	10.62	-16.99
989	6/24/2020	1	1	31.39	Yes	10.42	-20.97
990	6/24/2020	1	2	32.48	Yes	10.42	-22.06
991	6/24/2020	1	3	31.06	Yes	10.42	-20.64
992	6/24/2020	1	4	27.81	Yes	10.42	-17.39
993	6/24/2020	1	7	21.45	Yes	10.42	-11.03
994	6/24/2020	1	8	21.08	Yes	10.42	-10.66
995	6/24/2020	1	9	19.87	Yes	10.42	-9.45
996	6/24/2020	1	10	18.86	Yes	10.42	-8.44
997	6/24/2020	1	11	19.06	Yes	10.42	-8.64
998	6/24/2020	1	12	15.23	Yes	10.42	-4.81
999	6/24/2020	2	1	31.51	Yes	10.42	-21.09
1000	6/24/2020	2	2	25.52	Yes	10.42	-15.10
1001	6/24/2020	2	3	23.85	Yes	10.42	-13.43
1002	6/24/2020	2	4	26.31	Yes	10.42	-15.89
1003	6/24/2020	2	5	24.38	Yes	10.42	-13.96
1004	6/24/2020	2	6	23.59	Yes	10.42	-13.17
1005	6/24/2020	2	7	22.55	Yes	10.42	-12.13
1006	6/24/2020	2	8	22.56	Yes	10.42	-12.14
1007	6/24/2020	2	9	22.81	Yes	10.42	-12.39
1008	6/24/2020	2	10	22.93	Yes	10.42	-12.51
1009	6/24/2020	2	11	22.67	Yes	10.42	-12.25
1010	6/24/2020	2	12	21.27	Yes	10.42	-10.85
1011	6/24/2020	3	1	23.24	Yes	10.42	-12.82
1012	6/24/2020	3	2	22.25	Yes	10.42	-11.83
1013	6/24/2020	3	3	22.48	Yes	10.42	-12.06
1014	6/24/2020	3	4	21.47	Yes	10.42	-11.05
1015	6/24/2020	3	5	21.94	Yes	10.42	-11.52
1016	6/24/2020	3	6	20.85	Yes	10.42	-10.43
1017	6/24/2020	3	7	20.26	Yes	10.42	-9.84
1018	6/24/2020	3	8	20.06	Yes	10.42	-9.64
1019	6/24/2020	3	9	19.84	Yes	10.42	-9.42
1020	6/24/2020	3	10	19.77	Yes	10.42	-9.35
1021	6/24/2020	3	11	19.49	Yes	10.42	-9.07
1022	6/24/2020	3	12	19.49	Yes	10.42	-9.07

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1023	6/24/2020	4	1	19.83	Yes	10.42	-9.41
1024	6/24/2020	4	2	19.67	Yes	10.42	-9.25
1025	6/24/2020	4	3	19.73	Yes	10.42	-9.31
1026	6/24/2020	4	4	17.98	Yes	10.42	-7.56
1027	6/24/2020	4	5	17.98	Yes	10.42	-7.56
1028	6/24/2020	4	6	18.87	Yes	10.42	-8.45
1029	6/24/2020	4	7	18.47	Yes	10.42	-8.05
1030	6/24/2020	4	8	19.19	Yes	10.42	-8.77
1031	6/24/2020	4	9	18.64	Yes	10.42	-8.22
1032	6/24/2020	5	1	20.43	Yes	10.42	-10.01
1033	6/24/2020	6	1	18.50	Yes	10.42	-8.08
1034	6/24/2020	7	1	43.66	Yes	10.42	-33.24
1035	6/24/2020	8	1	31.60	Yes	10.42	-21.18
1036	6/24/2020	9	1	17.78	Yes	10.42	-7.36
1037	6/24/2020	10	1	16.13	Yes	10.42	-5.71
1038	6/24/2020	11	1	20.80	Yes	10.42	-10.38
1039	6/24/2020	12	1	24.45	Yes	10.42	-14.03
1040	6/24/2020	13	1	25.86	Yes	10.42	-15.44
1041	6/24/2020	13	10	28.94	Yes	10.42	-18.52
1042	6/24/2020	14	4	45.10	Yes	10.42	-34.68
1043	6/24/2020	14	5	47.84	Yes	10.42	-37.42
1044	6/24/2020	14	6	49.75	Yes	10.42	-39.33
1045	6/24/2020	14	7	42.53	Yes	10.42	-32.11
1046	6/24/2020	14	8	44.00	Yes	10.42	-33.58
1047	6/24/2020	14	9	48.39	Yes	10.42	-37.97
1048	6/24/2020	14	10	48.26	Yes	10.42	-37.84
1049	6/24/2020	14	11	49.71	Yes	10.42	-39.29
1050	6/24/2020	14	12	56.22	Yes	10.42	-45.80
1051	6/24/2020	15	1	37.10	Yes	10.42	-26.68
1052	6/24/2020	15	2	32.79	Yes	10.42	-22.37
1053	6/24/2020	15	3	32.51	Yes	10.42	-22.09
1054	6/24/2020	15	4	32.25	Yes	10.42	-21.83
1055	6/24/2020	15	5	32.66	Yes	10.42	-22.24
1056	6/24/2020	15	6	32.25	Yes	10.42	-21.83
1057	6/24/2020	15	7	33.94	Yes	10.42	-23.52
1058	6/24/2020	15	8	34.53	Yes	10.42	-24.11
1059	6/24/2020	15	9	37.00	Yes	10.42	-26.58
1060	6/24/2020	15	10	33.52	Yes	10.42	-23.10

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1061	6/24/2020	15	11	32.60	Yes	10.42	-22.18
1062	6/24/2020	15	12	31.71	Yes	10.42	-21.29
1063	6/24/2020	16	1	28.39	Yes	10.42	-17.97
1064	6/24/2020	16	2	25.27	Yes	10.42	-14.85
1065	6/24/2020	16	3	25.62	Yes	10.42	-15.20
1066	6/24/2020	16	4	21.03	Yes	10.42	-10.61
1067	6/24/2020	16	5	20.71	Yes	10.42	-10.29
1068	6/24/2020	16	6	21.43	Yes	10.42	-11.01
1069	6/24/2020	16	7	21.48	Yes	10.42	-11.06
1070	6/24/2020	16	8	22.34	Yes	10.42	-11.92
1071	6/24/2020	16	9	21.88	Yes	10.42	-11.46
1072	6/24/2020	16	10	22.45	Yes	10.42	-12.03
1073	6/24/2020	16	11	24.14	Yes	10.42	-13.72
1074	6/24/2020	16	12	25.60	Yes	10.42	-15.18
1075	6/24/2020	17	1	23.92	Yes	10.42	-13.50
1076	6/24/2020	17	2	28.19	Yes	10.42	-17.77
1077	6/24/2020	17	3	26.52	Yes	10.42	-16.10
1078	6/24/2020	17	4	29.55	Yes	10.42	-19.13
1079	6/24/2020	17	5	29.60	Yes	10.42	-19.18
1080	6/24/2020	17	6	31.15	Yes	10.42	-20.73
1081	6/24/2020	17	7	39.44	Yes	10.42	-29.02
1082	6/24/2020	17	8	39.91	Yes	10.42	-29.49
1083	6/24/2020	17	9	50.63	Yes	10.42	-40.21
1084	6/24/2020	17	10	46.86	Yes	10.42	-36.44
1085	6/24/2020	17	11	44.37	Yes	10.42	-33.95
1086	6/24/2020	17	12	68.51	Yes	10.42	-58.09
1087	6/24/2020	18	1	68.25	Yes	10.42	-57.83
1088	6/24/2020	18	2	67.46	Yes	10.42	-57.04
1089	6/24/2020	18	3	63.05	Yes	10.42	-52.63
1090	6/24/2020	18	4	70.89	Yes	10.42	-60.47
1091	6/24/2020	18	5	74.11	Yes	10.42	-63.69
1092	6/24/2020	18	6	74.29	Yes	10.42	-63.87
1093	6/24/2020	18	7	92.02	Yes	10.42	-81.60
1094	6/24/2020	18	8	94.78	Yes	10.42	-84.36
1095	6/24/2020	18	9	96.36	Yes	10.42	-85.94
1096	6/24/2020	18	10	112.65	Yes	10.42	-102.23
1097	6/24/2020	18	11	120.53	Yes	10.42	-110.11
1098	6/24/2020	18	12	104.00	Yes	10.42	-93.58

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1099	6/24/2020	19	1	47.62	Yes	10.42	-37.20
1100	6/24/2020	19	2	50.72	Yes	10.42	-40.30
1101	6/24/2020	19	3	52.99	Yes	10.42	-42.57
1102	6/24/2020	19	4	53.97	Yes	10.42	-43.55
1103	6/24/2020	19	5	69.77	Yes	10.42	-59.35
1104	6/24/2020	19	6	62.22	Yes	10.42	-51.80
1105	6/24/2020	19	7	63.40	Yes	10.42	-52.98
1106	6/24/2020	19	8	76.28	Yes	10.42	-65.86
1107	6/24/2020	19	9	1393.73	Yes	10.42	-1383.31
1108	6/24/2020	19	10	128.64	Yes	10.42	-118.22
1109	6/24/2020	19	11	345.62	Yes	10.42	-335.20
1110	6/24/2020	19	12	147.17	Yes	10.42	-136.75
1111	6/24/2020	20	1	65.16	Yes	10.42	-54.74
1112	6/24/2020	20	2	65.16	Yes	10.42	-54.74
1113	6/24/2020	20	3	65.16	Yes	10.42	-54.74
1114	6/24/2020	20	4	52.91	Yes	10.42	-42.49
1115	6/24/2020	20	5	52.91	Yes	10.42	-42.49
1116	6/24/2020	20	6	51.26	Yes	10.42	-40.84
1117	6/24/2020	20	7	50.84	Yes	10.42	-40.42
1118	6/24/2020	20	8	50.84	Yes	10.42	-40.42
1119	6/24/2020	20	9	52.43	Yes	10.42	-42.01
1120	6/24/2020	20	10	49.56	Yes	10.42	-39.14
1121	6/24/2020	20	11	49.56	Yes	10.42	-39.14
1122	6/24/2020	20	12	48.52	Yes	10.42	-38.10
1123	6/24/2020	21	1	41.31	Yes	10.42	-30.89
1124	6/24/2020	21	2	41.31	Yes	10.42	-30.89
1125	6/24/2020	21	3	41.31	Yes	10.42	-30.89
1126	6/24/2020	21	4	36.72	Yes	10.42	-26.30
1127	6/24/2020	21	5	36.72	Yes	10.42	-26.30
1128	6/24/2020	21	6	34.07	Yes	10.42	-23.65
1129	6/24/2020	21	7	32.43	Yes	10.42	-22.01
1130	6/24/2020	21	8	32.61	Yes	10.42	-22.19
1131	6/24/2020	21	9	29.89	Yes	10.42	-19.47
1132	6/24/2020	21	10	27.91	Yes	10.42	-17.49
1133	6/24/2020	21	11	28.48	Yes	10.42	-18.06
1134	6/24/2020	21	12	28.10	Yes	10.42	-17.68
1135	6/24/2020	22	1	30.41	Yes	10.42	-19.99
1136	6/24/2020	22	2	30.89	Yes	10.42	-20.47

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1137	6/24/2020	22	3	31.26	Yes	10.42	-20.84
1138	6/24/2020	22	4	33.89	Yes	10.42	-23.47
1139	6/24/2020	22	5	33.89	Yes	10.42	-23.47
1140	6/24/2020	22	6	35.51	Yes	10.42	-25.09
1141	6/24/2020	22	7	37.99	Yes	10.42	-27.57
1142	6/24/2020	22	8	30.29	Yes	10.42	-19.87
1143	6/24/2020	22	9	30.90	Yes	10.42	-20.48
1144	6/24/2020	22	10	29.26	Yes	10.42	-18.84
1145	6/24/2020	22	11	27.33	Yes	10.42	-16.91
1146	6/24/2020	22	12	27.33	Yes	10.42	-16.91
1147	6/24/2020	23	1	30.68	Yes	10.42	-20.26
1148	6/24/2020	23	2	27.03	Yes	10.42	-16.61
1149	6/24/2020	23	3	26.36	Yes	10.42	-15.94
1150	6/24/2020	23	4	31.03	Yes	10.42	-20.61
1151	6/24/2020	23	5	32.36	Yes	10.42	-21.94
1152	6/24/2020	23	6	35.07	Yes	10.42	-24.65
1153	6/24/2020	23	7	33.27	Yes	10.42	-22.85
1154	6/24/2020	23	8	36.73	Yes	10.42	-26.31
1155	6/24/2020	23	9	38.03	Yes	10.42	-27.61
1156	6/24/2020	23	10	31.51	Yes	10.42	-21.09
1157	6/24/2020	23	11	30.73	Yes	10.42	-20.31
1158	6/24/2020	23	12	30.06	Yes	10.42	-19.64
1159	6/24/2020	24	1	31.17	Yes	10.42	-20.75
1160	6/24/2020	24	2	32.14	Yes	10.42	-21.72
1161	6/24/2020	24	3	28.57	Yes	10.42	-18.15
1162	6/24/2020	24	4	31.69	Yes	10.42	-21.27
1163	6/24/2020	24	5	34.86	Yes	10.42	-24.44
1164	6/24/2020	24	6	36.26	Yes	10.42	-25.84
1165	6/24/2020	24	7	32.33	Yes	10.42	-21.91
1166	6/24/2020	24	8	30.54	Yes	10.42	-20.12
1167	6/24/2020	24	9	31.31	Yes	10.42	-20.89
1168	6/24/2020	24	10	25.19	Yes	10.42	-14.77
1169	6/24/2020	24	11	28.33	Yes	10.42	-17.91
1170	6/24/2020	24	12	28.35	Yes	10.42	-17.93
1171	6/25/2020	1	1	20.22	Yes	10.33	-9.89
1172	6/25/2020	1	2	23.45	Yes	10.33	-13.12
1173	6/25/2020	1	3	24.23	Yes	10.33	-13.90
1174	6/25/2020	1	4	22.71	Yes	10.33	-12.38

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1175	6/25/2020	1	5	22.47	Yes	10.33	-12.14
1176	6/25/2020	1	6	18.94	Yes	10.33	-8.61
1177	6/25/2020	1	7	24.87	Yes	10.33	-14.54
1178	6/25/2020	1	8	24.02	Yes	10.33	-13.69
1179	6/25/2020	1	9	21.00	Yes	10.33	-10.67
1180	6/25/2020	1	10	20.61	Yes	10.33	-10.28
1181	6/25/2020	1	11	20.03	Yes	10.33	-9.70
1182	6/25/2020	1	12	18.01	Yes	10.33	-7.68
1183	6/25/2020	2	1	21.51	Yes	10.33	-11.18
1184	6/25/2020	2	2	22.43	Yes	10.33	-12.10
1185	6/25/2020	2	3	21.05	Yes	10.33	-10.72
1186	6/25/2020	2	4	21.19	Yes	10.33	-10.86
1187	6/25/2020	2	5	21.10	Yes	10.33	-10.77
1188	6/25/2020	2	6	21.10	Yes	10.33	-10.77
1189	6/25/2020	2	7	20.94	Yes	10.33	-10.61
1190	6/25/2020	2	8	22.33	Yes	10.33	-12.00
1191	6/25/2020	2	9	21.18	Yes	10.33	-10.85
1192	6/25/2020	2	10	22.15	Yes	10.33	-11.82
1193	6/25/2020	2	11	20.61	Yes	10.33	-10.28
1194	6/25/2020	2	12	20.72	Yes	10.33	-10.39
1195	6/25/2020	3	1	25.09	Yes	10.33	-14.76
1196	6/25/2020	3	2	25.09	Yes	10.33	-14.76
1197	6/25/2020	3	3	25.41	Yes	10.33	-15.08
1198	6/25/2020	3	4	25.01	Yes	10.33	-14.68
1199	6/25/2020	3	5	27.08	Yes	10.33	-16.75
1200	6/25/2020	3	6	24.57	Yes	10.33	-14.24
1201	6/25/2020	3	7	24.70	Yes	10.33	-14.37
1202	6/25/2020	3	8	24.86	Yes	10.33	-14.53
1203	6/25/2020	3	9	24.56	Yes	10.33	-14.23
1204	6/25/2020	3	10	24.36	Yes	10.33	-14.03
1205	6/25/2020	3	11	23.82	Yes	10.33	-13.49
1206	6/25/2020	3	12	23.28	Yes	10.33	-12.95
1207	6/25/2020	5	1	17.25	Yes	10.33	-6.92
1208	6/25/2020	5	2	17.25	Yes	10.33	-6.92
1209	6/25/2020	5	3	18.09	Yes	10.33	-7.76
1210	6/25/2020	5	4	17.25	Yes	10.33	-6.92
1211	6/25/2020	5	5	17.25	Yes	10.33	-6.92
1212	6/25/2020	5	6	17.14	Yes	10.33	-6.81

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1213	6/25/2020	5	7	21.81	Yes	10.33	-11.48
1214	6/25/2020	5	8	21.97	Yes	10.33	-11.64
1215	6/25/2020	5	9	21.84	Yes	10.33	-11.51
1216	6/25/2020	5	10	22.09	Yes	10.33	-11.76
1217	6/25/2020	5	11	22.18	Yes	10.33	-11.85
1218	6/25/2020	5	12	23.28	Yes	10.33	-12.95
1219	6/25/2020	6	1	20.87	Yes	10.33	-10.54
1220	6/25/2020	6	2	21.16	Yes	10.33	-10.83
1221	6/25/2020	6	3	21.26	Yes	10.33	-10.93
1222	6/25/2020	6	4	21.40	Yes	10.33	-11.07
1223	6/25/2020	6	5	21.40	Yes	10.33	-11.07
1224	6/25/2020	6	6	24.22	Yes	10.33	-13.89
1225	6/25/2020	6	7	24.60	Yes	10.33	-14.27
1226	6/25/2020	6	8	24.65	Yes	10.33	-14.32
1227	6/25/2020	6	9	24.65	Yes	10.33	-14.32
1228	6/25/2020	6	10	24.58	Yes	10.33	-14.25
1229	6/25/2020	6	11	24.53	Yes	10.33	-14.20
1230	6/25/2020	6	12	24.66	Yes	10.33	-14.33
1231	6/25/2020	7	1	26.85	Yes	10.33	-16.52
1232	6/25/2020	7	2	27.14	Yes	10.33	-16.81
1233	6/25/2020	7	3	34.85	Yes	10.33	-24.52
1234	6/25/2020	7	4	32.98	Yes	10.33	-22.65
1235	6/25/2020	7	5	32.92	Yes	10.33	-22.59
1236	6/25/2020	7	6	32.98	Yes	10.33	-22.65
1237	6/25/2020	7	7	31.77	Yes	10.33	-21.44
1238	6/25/2020	7	8	28.21	Yes	10.33	-17.88
1239	6/25/2020	7	9	24.68	Yes	10.33	-14.35
1240	6/25/2020	7	10	28.58	Yes	10.33	-18.25
1241	6/25/2020	7	11	21.88	Yes	10.33	-11.55
1242	6/25/2020	7	12	25.63	Yes	10.33	-15.30
1243	6/25/2020	8	1	24.89	Yes	10.33	-14.56
1244	6/25/2020	8	2	24.92	Yes	10.33	-14.59
1245	6/25/2020	8	3	24.92	Yes	10.33	-14.59
1246	6/25/2020	8	4	24.55	Yes	10.33	-14.22
1247	6/25/2020	8	5	23.90	Yes	10.33	-13.57
1248	6/25/2020	8	6	18.47	Yes	10.33	-8.14
1249	6/25/2020	8	7	15.97	Yes	10.33	-5.64
1250	6/25/2020	8	8	12.67	Yes	10.33	-2.34

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1251	6/25/2020	8	9	13.24	Yes	10.33	-2.91
1252	6/25/2020	8	10	13.74	Yes	10.33	-3.41
1253	6/25/2020	8	11	13.74	Yes	10.33	-3.41
1254	6/25/2020	8	12	13.56	Yes	10.33	-3.23
1255	6/25/2020	9	1	11.39	Yes	10.33	-1.06
1256	6/25/2020	9	2	11.13	Yes	10.33	-0.80
1257	6/25/2020	9	3	12.04	Yes	10.33	-1.71
1258	6/25/2020	9	4	13.97	Yes	10.33	-3.64
1259	6/25/2020	9	5	13.68	Yes	10.33	-3.35
1260	6/25/2020	9	6	13.44	Yes	10.33	-3.11
1261	6/25/2020	9	7	13.49	Yes	10.33	-3.16
1262	6/25/2020	9	8	14.05	Yes	10.33	-3.72
1263	6/25/2020	9	9	15.15	Yes	10.33	-4.82
1264	6/25/2020	9	10	13.26	Yes	10.33	-2.93
1265	6/25/2020	9	11	13.26	Yes	10.33	-2.93
1266	6/25/2020	9	12	12.64	Yes	10.33	-2.31
1267	6/25/2020	10	1	13.85	Yes	10.33	-3.52
1268	6/25/2020	10	2	15.30	Yes	10.33	-4.97
1269	6/25/2020	10	3	19.94	Yes	10.33	-9.61
1270	6/25/2020	10	4	15.96	Yes	10.33	-5.63
1271	6/25/2020	10	5	14.74	Yes	10.33	-4.41
1272	6/25/2020	10	6	14.58	Yes	10.33	-4.25
1273	6/25/2020	10	7	14.33	Yes	10.33	-4.00
1274	6/25/2020	10	8	13.90	Yes	10.33	-3.57
1275	6/25/2020	10	9	13.84	Yes	10.33	-3.51
1276	6/25/2020	10	10	14.26	Yes	10.33	-3.93
1277	6/25/2020	10	11	14.66	Yes	10.33	-4.33
1278	6/25/2020	10	12	14.71	Yes	10.33	-4.38
1279	6/25/2020	11	1	15.20	Yes	10.33	-4.87
1280	6/25/2020	11	2	15.64	Yes	10.33	-5.31
1281	6/25/2020	11	3	16.70	Yes	10.33	-6.37
1282	6/25/2020	11	4	17.98	Yes	10.33	-7.65
1283	6/25/2020	11	5	17.80	Yes	10.33	-7.47
1284	6/25/2020	11	6	17.73	Yes	10.33	-7.40
1285	6/25/2020	11	7	18.91	Yes	10.33	-8.58
1286	6/25/2020	11	8	17.82	Yes	10.33	-7.49
1287	6/25/2020	11	9	21.38	Yes	10.33	-11.05
1288	6/25/2020	11	10	21.38	Yes	10.33	-11.05

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1289	6/25/2020	11	11	20.77	Yes	10.33	-10.44
1290	6/25/2020	11	12	24.53	Yes	10.33	-14.20
1291	6/25/2020	12	1	22.26	Yes	10.33	-11.93
1292	6/25/2020	12	2	22.29	Yes	10.33	-11.96
1293	6/25/2020	12	3	23.13	Yes	10.33	-12.80
1294	6/25/2020	12	4	25.34	Yes	10.33	-15.01
1295	6/25/2020	12	5	28.84	Yes	10.33	-18.51
1296	6/25/2020	12	6	38.77	Yes	10.33	-28.44
1297	6/25/2020	12	7	38.86	Yes	10.33	-28.53
1298	6/25/2020	12	8	30.19	Yes	10.33	-19.86
1299	6/25/2020	12	9	25.41	Yes	10.33	-15.08
1300	6/25/2020	12	10	27.39	Yes	10.33	-17.06
1301	6/25/2020	12	11	30.17	Yes	10.33	-19.84
1302	6/25/2020	12	12	29.79	Yes	10.33	-19.46
1303	6/25/2020	13	1	24.99	Yes	10.33	-14.66
1304	6/25/2020	13	2	24.83	Yes	10.33	-14.50
1305	6/25/2020	13	3	22.20	Yes	10.33	-11.87
1306	6/25/2020	13	4	23.40	Yes	10.33	-13.07
1307	6/25/2020	13	5	22.71	Yes	10.33	-12.38
1308	6/25/2020	13	6	24.41	Yes	10.33	-14.08
1309	6/25/2020	13	7	25.97	Yes	10.33	-15.64
1310	6/25/2020	13	8	27.13	Yes	10.33	-16.80
1311	6/25/2020	13	9	35.96	Yes	10.33	-25.63
1312	6/25/2020	13	10	50.01	Yes	10.33	-39.68
1313	6/25/2020	13	11	27.39	Yes	10.33	-17.06
1314	6/25/2020	13	12	28.78	Yes	10.33	-18.45
1315	6/25/2020	14	1	34.86	Yes	10.33	-24.53
1316	6/25/2020	14	2	28.12	Yes	10.33	-17.79
1317	6/25/2020	14	3	30.37	Yes	10.33	-20.04
1318	6/25/2020	14	4	30.86	Yes	10.33	-20.53
1319	6/25/2020	14	5	29.59	Yes	10.33	-19.26
1320	6/25/2020	14	6	29.59	Yes	10.33	-19.26
1321	6/25/2020	14	7	33.59	Yes	10.33	-23.26
1322	6/25/2020	14	8	40.46	Yes	10.33	-30.13
1323	6/25/2020	14	9	35.22	Yes	10.33	-24.89
1324	6/25/2020	14	10	40.01	Yes	10.33	-29.68
1325	6/25/2020	14	11	30.89	Yes	10.33	-20.56
1326	6/25/2020	14	12	31.98	Yes	10.33	-21.65

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1327	6/25/2020	15	1	22.75	Yes	10.33	-12.42
1328	6/25/2020	15	2	22.57	Yes	10.33	-12.24
1329	6/25/2020	15	3	22.39	Yes	10.33	-12.06
1330	6/25/2020	15	4	30.66	Yes	10.33	-20.33
1331	6/25/2020	15	5	29.83	Yes	10.33	-19.50
1332	6/25/2020	15	6	28.51	Yes	10.33	-18.18
1333	6/25/2020	15	7	33.42	Yes	10.33	-23.09
1334	6/25/2020	15	8	29.78	Yes	10.33	-19.45
1335	6/25/2020	15	9	34.39	Yes	10.33	-24.06
1336	6/25/2020	15	10	37.43	Yes	10.33	-27.10
1337	6/25/2020	15	11	30.29	Yes	10.33	-19.96
1338	6/25/2020	15	12	27.71	Yes	10.33	-17.38
1339	6/25/2020	16	1	25.94	Yes	10.33	-15.61
1340	6/25/2020	16	2	23.85	Yes	10.33	-13.52
1341	6/25/2020	16	3	25.20	Yes	10.33	-14.87
1342	6/25/2020	16	4	24.14	Yes	10.33	-13.81
1343	6/25/2020	16	5	24.29	Yes	10.33	-13.96
1344	6/25/2020	16	6	24.46	Yes	10.33	-14.13
1345	6/25/2020	16	7	24.71	Yes	10.33	-14.38
1346	6/25/2020	16	8	24.71	Yes	10.33	-14.38
1347	6/25/2020	16	9	24.48	Yes	10.33	-14.15
1348	6/25/2020	16	10	27.62	Yes	10.33	-17.29
1349	6/25/2020	16	11	25.13	Yes	10.33	-14.80
1350	6/25/2020	16	12	25.61	Yes	10.33	-15.28
1351	6/25/2020	17	1	24.80	Yes	10.33	-14.47
1352	6/25/2020	17	2	23.90	Yes	10.33	-13.57
1353	6/25/2020	17	3	24.98	Yes	10.33	-14.65
1354	6/25/2020	17	4	25.14	Yes	10.33	-14.81
1355	6/25/2020	17	5	25.86	Yes	10.33	-15.53
1356	6/25/2020	17	6	26.85	Yes	10.33	-16.52
1357	6/25/2020	17	7	27.72	Yes	10.33	-17.39
1358	6/25/2020	17	8	28.98	Yes	10.33	-18.65
1359	6/25/2020	17	9	29.23	Yes	10.33	-18.90
1360	6/25/2020	17	10	28.61	Yes	10.33	-18.28
1361	6/25/2020	17	11	27.43	Yes	10.33	-17.10
1362	6/25/2020	17	12	29.12	Yes	10.33	-18.79
1363	6/25/2020	18	1	27.11	Yes	10.33	-16.78
1364	6/25/2020	18	2	27.04	Yes	10.33	-16.71

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1365	6/25/2020	18	3	27.04	Yes	10.33	-16.71
1366	6/27/2020	2	4	19.58	Yes	9.72	-9.86
1367	6/27/2020	2	5	18.40	Yes	9.72	-8.68
1368	6/27/2020	2	6	14.85	Yes	9.72	-5.13
1369	6/27/2020	2	7	15.90	Yes	9.72	-6.18
1370	6/27/2020	2	8	15.47	Yes	9.72	-5.75
1371	6/27/2020	2	9	17.73	Yes	9.72	-8.01
1372	6/27/2020	2	10	16.23	Yes	9.72	-6.51
1373	6/27/2020	2	11	17.61	Yes	9.72	-7.89
1374	6/27/2020	2	12	15.29	Yes	9.72	-5.57
1375	6/27/2020	3	1	25.42	Yes	9.72	-15.70
1376	6/27/2020	3	2	21.96	Yes	9.72	-12.24
1377	6/27/2020	3	3	20.24	Yes	9.72	-10.52
1378	6/27/2020	3	4	19.82	Yes	9.72	-10.10
1379	6/27/2020	3	5	18.39	Yes	9.72	-8.67
1380	6/27/2020	3	6	19.42	Yes	9.72	-9.70
1381	6/27/2020	3	7	15.80	Yes	9.72	-6.08
1382	6/27/2020	3	8	15.41	Yes	9.72	-5.69
1383	6/27/2020	3	9	14.90	Yes	9.72	-5.18
1384	6/27/2020	3	10	13.51	Yes	9.72	-3.79
1385	6/27/2020	3	11	14.78	Yes	9.72	-5.06
1386	6/27/2020	3	12	16.95	Yes	9.72	-7.23
1387	6/27/2020	4	1	44.19	Yes	9.72	-34.47
1388	6/27/2020	4	2	33.10	Yes	9.72	-23.38
1389	6/27/2020	4	3	22.86	Yes	9.72	-13.14
1390	6/27/2020	4	4	27.01	Yes	9.72	-17.29
1391	6/27/2020	4	5	27.59	Yes	9.72	-17.87
1392	6/27/2020	4	6	26.85	Yes	9.72	-17.13
1393	6/27/2020	4	7	26.71	Yes	9.72	-16.99
1394	6/27/2020	4	8	24.40	Yes	9.72	-14.68
1395	6/27/2020	4	9	24.45	Yes	9.72	-14.73
1396	6/27/2020	4	10	21.33	Yes	9.72	-11.61
1397	6/27/2020	4	11	19.14	Yes	9.72	-9.42
1398	6/27/2020	4	12	21.33	Yes	9.72	-11.61
1399	6/27/2020	5	1	17.82	Yes	9.72	-8.10
1400	6/27/2020	5	2	16.04	Yes	9.72	-6.32
1401	6/27/2020	5	3	16.04	Yes	9.72	-6.32
1402	6/27/2020	5	4	19.81	Yes	9.72	-10.09

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1403	6/27/2020	5	5	19.46	Yes	9.72	-9.74
1404	6/27/2020	5	6	22.82	Yes	9.72	-13.10
1405	6/27/2020	5	7	20.93	Yes	9.72	-11.21
1406	6/27/2020	5	8	21.28	Yes	9.72	-11.56
1407	6/27/2020	5	9	22.00	Yes	9.72	-12.28
1408	6/27/2020	5	10	19.47	Yes	9.72	-9.75
1409	6/27/2020	5	11	21.33	Yes	9.72	-11.61
1410	6/27/2020	5	12	21.52	Yes	9.72	-11.80
1411	6/27/2020	6	1	20.91	Yes	9.72	-11.19
1412	6/27/2020	6	2	16.69	Yes	9.72	-6.97
1413	6/27/2020	6	3	18.33	Yes	9.72	-8.61
1414	6/27/2020	6	4	24.89	Yes	9.72	-15.17
1415	6/27/2020	6	5	22.92	Yes	9.72	-13.20
1416	6/27/2020	6	6	22.51	Yes	9.72	-12.79
1417	6/27/2020	6	7	21.29	Yes	9.72	-11.57
1418	6/27/2020	6	8	20.26	Yes	9.72	-10.54
1419	6/27/2020	6	9	21.04	Yes	9.72	-11.32
1420	6/27/2020	6	10	21.81	Yes	9.72	-12.09
1421	6/27/2020	6	11	14.68	Yes	9.72	-4.96
1422	6/27/2020	6	12	20.82	Yes	9.72	-11.10
1423	6/27/2020	7	1	35.41	Yes	9.72	-25.69
1424	6/27/2020	7	2	35.93	Yes	9.72	-26.21
1425	6/27/2020	7	3	35.93	Yes	9.72	-26.21
1426	6/27/2020	8	1	18.92	Yes	9.72	-9.20
1427	6/27/2020	9	1	17.43	Yes	9.72	-7.71
1428	6/27/2020	10	1	21.13	Yes	9.72	-11.41
1429	6/27/2020	11	1	21.10	Yes	9.72	-11.38
1430	6/27/2020	12	1	31.91	Yes	9.72	-22.19
1431	6/27/2020	13	1	25.21	Yes	9.72	-15.49
1432	6/27/2020	14	1	26.70	Yes	9.72	-16.98
1433	6/27/2020	15	1	34.64	Yes	9.72	-24.92
1434	6/27/2020	16	1	31.44	Yes	9.72	-21.72
1435	6/27/2020	17	1	34.60	Yes	9.72	-24.88
1436	6/27/2020	18	1	22.96	Yes	9.72	-13.24
1437	6/27/2020	19	1	36.36	Yes	9.72	-26.64
1438	6/27/2020	20	1	45.35	Yes	9.72	-35.63
1439	6/27/2020	21	1	41.34	Yes	9.72	-31.62
1440	6/27/2020	22	1	32.40	Yes	9.72	-22.68

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1441	6/27/2020	23	1	37.35	Yes	9.72	-27.63
1442	6/27/2020	24	1	25.00	Yes	9.72	-15.28
1443	6/27/2020	24	4	25.75	Yes	9.72	-16.03
1444	6/27/2020	24	5	25.64	Yes	9.72	-15.92
1445	6/27/2020	24	6	22.32	Yes	9.72	-12.60
1446	6/27/2020	24	7	19.76	Yes	9.72	-10.04
1447	6/27/2020	24	8	18.00	Yes	9.72	-8.28
1448	6/27/2020	24	9	18.04	Yes	9.72	-8.32
1449	6/27/2020	24	10	8.80	Yes	9.72	0.92
1450	6/27/2020	24	11	17.01	Yes	9.72	-7.29
1451	6/27/2020	24	12	20.60	Yes	9.72	-10.88
1452	6/28/2020	1	1	20.96	Yes	9.72	-11.24
1453	6/28/2020	1	2	28.91	Yes	9.72	-19.19
1454	6/28/2020	1	3	27.41	Yes	9.72	-17.69
1455	6/28/2020	1	4	28.45	Yes	9.72	-18.73
1456	6/28/2020	1	5	27.37	Yes	9.72	-17.65
1457	6/28/2020	1	6	23.49	Yes	9.72	-13.77
1458	6/28/2020	1	7	22.76	Yes	9.72	-13.04
1459	6/28/2020	1	8	22.76	Yes	9.72	-13.04
1460	6/28/2020	1	9	21.81	Yes	9.72	-12.09
1461	6/28/2020	1	10	18.46	Yes	9.72	-8.74
1462	6/28/2020	1	11	17.66	Yes	9.72	-7.94
1463	6/28/2020	1	12	17.87	Yes	9.72	-8.15
1464	6/28/2020	2	1	21.47	Yes	9.72	-11.75
1465	6/28/2020	2	2	23.67	Yes	9.72	-13.95
1466	6/28/2020	2	3	24.28	Yes	9.72	-14.56
1467	6/28/2020	2	4	19.47	Yes	9.72	-9.75
1468	6/28/2020	2	5	22.91	Yes	9.72	-13.19
1469	6/28/2020	2	6	21.16	Yes	9.72	-11.44
1470	6/28/2020	2	7	23.54	Yes	9.72	-13.82
1471	6/28/2020	2	8	20.98	Yes	9.72	-11.26
1472	6/28/2020	2	9	21.82	Yes	9.72	-12.10
1473	6/28/2020	2	10	19.82	Yes	9.72	-10.10
1474	6/28/2020	2	11	19.77	Yes	9.72	-10.05
1475	6/28/2020	2	12	18.67	Yes	9.72	-8.95
1476	6/28/2020	3	1	19.88	Yes	9.72	-10.16
1477	6/28/2020	3	2	33.96	Yes	9.72	-24.24
1478	6/28/2020	3	3	32.65	Yes	9.72	-22.93

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1479	6/28/2020	3	4	33.96	Yes	9.72	-24.24
1480	6/28/2020	3	5	27.63	Yes	9.72	-17.91
1481	6/28/2020	3	6	22.77	Yes	9.72	-13.05
1482	6/28/2020	3	7	22.77	Yes	9.72	-13.05
1483	6/28/2020	3	8	24.02	Yes	9.72	-14.30
1484	6/28/2020	3	9	20.98	Yes	9.72	-11.26
1485	6/28/2020	3	10	20.98	Yes	9.72	-11.26
1486	6/28/2020	3	11	20.07	Yes	9.72	-10.35
1487	6/28/2020	3	12	20.30	Yes	9.72	-10.58
1488	6/28/2020	4	1	24.55	Yes	9.72	-14.83
1489	6/28/2020	4	2	25.59	Yes	9.72	-15.87
1490	6/28/2020	4	3	24.70	Yes	9.72	-14.98
1491	6/28/2020	4	4	23.41	Yes	9.72	-13.69
1492	6/28/2020	4	5	25.59	Yes	9.72	-15.87
1493	6/28/2020	4	6	23.22	Yes	9.72	-13.50
1494	6/28/2020	4	7	29.23	Yes	9.72	-19.51
1495	6/28/2020	4	8	27.63	Yes	9.72	-17.91
1496	6/28/2020	4	9	25.66	Yes	9.72	-15.94
1497	6/28/2020	4	10	25.42	Yes	9.72	-15.70
1498	6/28/2020	4	11	20.07	Yes	9.72	-10.35
1499	6/28/2020	4	12	21.00	Yes	9.72	-11.28
1500	6/28/2020	5	1	25.29	Yes	9.72	-15.57
1501	6/28/2020	5	2	23.59	Yes	9.72	-13.87
1502	6/28/2020	5	3	19.61	Yes	9.72	-9.89
1503	6/28/2020	5	4	22.89	Yes	9.72	-13.17
1504	6/28/2020	5	5	21.30	Yes	9.72	-11.58
1505	6/28/2020	5	6	19.16	Yes	9.72	-9.44
1506	6/28/2020	5	7	18.29	Yes	9.72	-8.57
1507	6/28/2020	5	8	19.73	Yes	9.72	-10.01
1508	6/28/2020	5	9	19.77	Yes	9.72	-10.05
1509	6/28/2020	5	10	19.77	Yes	9.72	-10.05
1510	6/28/2020	5	11	19.77	Yes	9.72	-10.05
1511	6/28/2020	5	12	19.37	Yes	9.72	-9.65
1512	6/28/2020	6	1	22.95	Yes	9.72	-13.23
1513	6/28/2020	6	2	22.01	Yes	9.72	-12.29
1514	6/28/2020	6	3	24.38	Yes	9.72	-14.66
1515	6/28/2020	6	4	32.10	Yes	9.72	-22.38
1516	6/28/2020	6	5	27.96	Yes	9.72	-18.24

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1517	6/28/2020	6	6	27.53	Yes	9.72	-17.81
1518	6/28/2020	6	7	25.97	Yes	9.72	-16.25
1519	6/28/2020	6	8	23.00	Yes	9.72	-13.28
1520	6/28/2020	6	9	24.02	Yes	9.72	-14.30
1521	6/28/2020	6	10	21.42	Yes	9.72	-11.70
1522	6/28/2020	6	11	22.60	Yes	9.72	-12.88
1523	6/28/2020	6	12	21.49	Yes	9.72	-11.77
1524	6/28/2020	7	1	29.12	Yes	9.72	-19.40
1525	6/28/2020	7	2	29.12	Yes	9.72	-19.40
1526	6/28/2020	7	3	29.12	Yes	9.72	-19.40
1527	6/28/2020	7	4	28.20	Yes	9.72	-18.48
1528	6/28/2020	7	5	25.06	Yes	9.72	-15.34
1529	6/28/2020	7	6	27.51	Yes	9.72	-17.79
1530	6/28/2020	7	7	19.30	Yes	9.72	-9.58
1531	6/28/2020	7	8	22.35	Yes	9.72	-12.63
1532	6/28/2020	7	9	20.40	Yes	9.72	-10.68
1533	6/28/2020	7	10	20.12	Yes	9.72	-10.40
1534	6/28/2020	7	11	20.47	Yes	9.72	-10.75
1535	6/28/2020	7	12	23.22	Yes	9.72	-13.50
1536	6/28/2020	8	1	15.88	Yes	9.72	-6.16
1537	6/28/2020	8	2	30.86	Yes	9.72	-21.14
1538	6/28/2020	8	3	30.77	Yes	9.72	-21.05
1539	6/28/2020	8	4	21.91	Yes	9.72	-12.19
1540	6/28/2020	8	5	18.17	Yes	9.72	-8.45
1541	6/28/2020	8	6	13.63	Yes	9.72	-3.91
1542	6/28/2020	8	7	11.19	Yes	9.72	-1.47
1543	6/28/2020	8	8	11.48	Yes	9.72	-1.76
1544	6/28/2020	8	9	11.67	Yes	9.72	-1.95
1545	6/28/2020	8	10	11.46	Yes	9.72	-1.74
1546	6/28/2020	8	11	11.10	Yes	9.72	-1.38
1547	6/28/2020	8	12	10.46	Yes	9.72	-0.74
1548	6/28/2020	9	1	11.04	Yes	9.72	-1.32
1549	6/28/2020	9	2	11.61	Yes	9.72	-1.89
1550	6/28/2020	9	3	12.46	Yes	9.72	-2.74
1551	6/28/2020	9	4	11.91	Yes	9.72	-2.19
1552	6/28/2020	9	5	11.75	Yes	9.72	-2.03
1553	6/28/2020	9	6	11.75	Yes	9.72	-2.03
1554	6/28/2020	9	7	11.79	Yes	9.72	-2.07

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1555	6/28/2020	9	8	11.51	Yes	9.72	-1.79
1556	6/28/2020	9	9	10.76	Yes	9.72	-1.04
1557	6/28/2020	9	10	10.44	Yes	9.72	-0.72
1558	6/28/2020	9	11	9.67	Yes	9.72	0.05
1559	6/28/2020	9	12	10.58	Yes	9.72	-0.86
1560	6/28/2020	10	1	10.33	Yes	9.72	-0.61
1561	6/28/2020	10	2	10.71	Yes	9.72	-0.99
1562	6/28/2020	10	3	11.34	Yes	9.72	-1.62
1563	6/28/2020	10	4	11.81	Yes	9.72	-2.09
1564	6/28/2020	10	5	12.39	Yes	9.72	-2.67
1565	6/28/2020	10	6	11.88	Yes	9.72	-2.16
1566	6/28/2020	10	7	12.31	Yes	9.72	-2.59
1567	6/28/2020	10	8	12.96	Yes	9.72	-3.24
1568	6/28/2020	10	9	12.96	Yes	9.72	-3.24
1569	6/28/2020	10	10	13.22	Yes	9.72	-3.50
1570	6/28/2020	11	1	11.10	Yes	9.72	-1.38
1571	6/28/2020	11	2	3.78	Yes	9.72	5.94
1572	6/28/2020	11	3	9.82	Yes	9.72	-0.10
1573	6/28/2020	11	4	1.37	Yes	9.72	8.35
1574	6/28/2020	11	5	0.00	Yes	9.72	9.72
1575	6/28/2020	11	6	0.00	Yes	9.72	9.72
1576	6/28/2020	11	7	-0.01	Yes	9.72	9.73
1577	6/28/2020	11	8	-0.01	Yes	9.72	9.73
1578	6/28/2020	11	9	3.85	Yes	9.72	5.87
1579	6/28/2020	11	10	0.00	Yes	9.72	9.72
1580	6/28/2020	11	11	0.00	Yes	9.72	9.72
1581	6/28/2020	11	12	-0.01	Yes	9.72	9.73
1582	6/28/2020	12	1	-0.01	Yes	9.72	9.73
1583	6/28/2020	12	2	0.00	Yes	9.72	9.72
1584	6/28/2020	12	3	2.11	Yes	9.72	7.61
1585	6/28/2020	12	4	9.32	Yes	9.72	0.40
1586	6/28/2020	12	5	0.01	Yes	9.72	9.71
1587	6/28/2020	12	6	9.57	Yes	9.72	0.15
1588	6/28/2020	12	7	9.90	Yes	9.72	-0.18
1589	6/28/2020	12	8	2.97	Yes	9.72	6.75
1590	6/28/2020	12	9	2.98	Yes	9.72	6.74
1591	6/28/2020	12	10	9.36	Yes	9.72	0.36
1592	6/28/2020	12	11	4.77	Yes	9.72	4.95

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1593	6/28/2020	12	12	9.97	Yes	9.72	-0.25
1594	6/28/2020	13	1	10.40	Yes	9.72	-0.68
1595	6/28/2020	13	2	10.58	Yes	9.72	-0.86
1596	6/28/2020	13	3	10.40	Yes	9.72	-0.68
1597	6/28/2020	13	4	11.22	Yes	9.72	-1.50
1598	6/28/2020	13	5	10.53	Yes	9.72	-0.81
1599	6/28/2020	13	6	10.80	Yes	9.72	-1.08
1600	6/28/2020	13	7	10.44	Yes	9.72	-0.72
1601	6/28/2020	13	8	2.65	Yes	9.72	7.07
1602	6/28/2020	13	9	10.44	Yes	9.72	-0.72
1603	6/28/2020	13	10	9.71	Yes	9.72	0.01
1604	6/28/2020	13	11	1.23	Yes	9.72	8.49
1605	6/28/2020	13	12	0.00	Yes	9.72	9.72
1606	6/28/2020	14	1	-0.01	Yes	9.72	9.73
1607	6/28/2020	14	2	0.00	Yes	9.72	9.72
1608	6/28/2020	14	3	0.00	Yes	9.72	9.72
1609	6/28/2020	14	4	0.00	Yes	9.72	9.72
1610	6/28/2020	14	5	0.00	Yes	9.72	9.72
1611	6/28/2020	14	6	0.00	Yes	9.72	9.72
1612	6/28/2020	14	7	8.13	Yes	9.72	1.59
1613	6/28/2020	14	8	9.97	Yes	9.72	-0.25
1614	6/28/2020	14	9	1.91	Yes	9.72	7.81
1615	6/28/2020	14	10	0.01	Yes	9.72	9.71
1616	6/28/2020	14	11	-0.01	Yes	9.72	9.73
1617	6/28/2020	14	12	0.00	Yes	9.72	9.72
1618	6/28/2020	15	1	0.00	Yes	9.72	9.72
1619	6/28/2020	15	2	2.30	Yes	9.72	7.42
1620	6/28/2020	15	3	7.24	Yes	9.72	2.48
1621	6/28/2020	15	4	9.15	Yes	9.72	0.57
1622	6/28/2020	15	5	9.72	Yes	9.72	0.00
1623	6/28/2020	15	6	10.06	Yes	9.72	-0.34
1624	6/28/2020	15	7	10.36	Yes	9.72	-0.64
1625	6/28/2020	15	8	10.58	Yes	9.72	-0.86
1626	6/28/2020	15	9	10.83	Yes	9.72	-1.11
1627	6/28/2020	15	10	10.86	Yes	9.72	-1.14
1628	6/28/2020	15	11	10.27	Yes	9.72	-0.55
1629	6/28/2020	15	12	11.30	Yes	9.72	-1.58
1630	6/28/2020	16	1	11.91	Yes	9.72	-2.19

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1631	6/28/2020	16	2	13.79	Yes	9.72	-4.07
1632	6/28/2020	16	3	13.79	Yes	9.72	-4.07
1633	6/28/2020	16	4	17.83	Yes	9.72	-8.11
1634	6/28/2020	16	5	17.19	Yes	9.72	-7.47
1635	6/28/2020	16	6	18.25	Yes	9.72	-8.53
1636	6/28/2020	16	7	19.29	Yes	9.72	-9.57
1637	6/28/2020	16	8	30.27	Yes	9.72	-20.55
1638	6/28/2020	16	9	29.29	Yes	9.72	-19.57
1639	6/28/2020	16	10	29.01	Yes	9.72	-19.29
1640	6/28/2020	16	11	23.26	Yes	9.72	-13.54
1641	6/28/2020	16	12	18.58	Yes	9.72	-8.86
1642	6/28/2020	17	1	15.79	Yes	9.72	-6.07
1643	6/28/2020	17	2	12.61	Yes	9.72	-2.89
1644	6/28/2020	17	3	13.85	Yes	9.72	-4.13
1645	6/28/2020	17	4	17.83	Yes	9.72	-8.11
1646	6/28/2020	17	5	18.75	Yes	9.72	-9.03
1647	6/28/2020	17	6	25.40	Yes	9.72	-15.68
1648	6/28/2020	17	7	25.56	Yes	9.72	-15.84
1649	6/28/2020	17	8	21.38	Yes	9.72	-11.66
1650	6/28/2020	17	9	18.90	Yes	9.72	-9.18
1651	6/28/2020	17	10	18.14	Yes	9.72	-8.42
1652	6/28/2020	17	11	18.51	Yes	9.72	-8.79
1653	6/28/2020	17	12	18.94	Yes	9.72	-9.22
1654	6/28/2020	18	1	18.67	Yes	9.72	-8.95
1655	6/28/2020	18	2	18.67	Yes	9.72	-8.95
1656	6/28/2020	18	3	22.48	Yes	9.72	-12.76
1657	6/28/2020	18	4	18.63	Yes	9.72	-8.91
1658	6/28/2020	18	5	19.92	Yes	9.72	-10.20
1659	6/28/2020	18	6	19.99	Yes	9.72	-10.27
1660	6/28/2020	18	7	19.05	Yes	9.72	-9.33
1661	6/28/2020	18	8	20.22	Yes	9.72	-10.50
1662	6/28/2020	18	9	21.75	Yes	9.72	-12.03
1663	6/28/2020	18	10	24.36	Yes	9.72	-14.64
1664	6/28/2020	18	11	25.92	Yes	9.72	-16.20
1665	6/28/2020	18	12	25.98	Yes	9.72	-16.26
1666	6/28/2020	19	1	19.78	Yes	9.72	-10.06
1667	6/28/2020	19	2	20.22	Yes	9.72	-10.50
1668	6/28/2020	19	3	26.86	Yes	9.72	-17.14

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1669	6/28/2020	19	4	28.41	Yes	9.72	-18.69
1670	6/28/2020	19	5	33.54	Yes	9.72	-23.82
1671	6/28/2020	19	6	42.82	Yes	9.72	-33.10
1672	6/28/2020	19	7	25.55	Yes	9.72	-15.83
1673	6/28/2020	19	8	32.74	Yes	9.72	-23.02
1674	6/28/2020	19	9	47.15	Yes	9.72	-37.43
1675	6/28/2020	19	10	41.91	Yes	9.72	-32.19
1676	6/28/2020	19	11	46.38	Yes	9.72	-36.66
1677	6/28/2020	19	12	47.62	Yes	9.72	-37.90
1678	6/28/2020	20	1	29.00	Yes	9.72	-19.28
1679	6/28/2020	20	2	33.29	Yes	9.72	-23.57
1680	6/28/2020	20	3	34.33	Yes	9.72	-24.61
1681	6/28/2020	20	4	35.71	Yes	9.72	-25.99
1682	6/28/2020	20	5	35.81	Yes	9.72	-26.09
1683	6/28/2020	20	6	36.06	Yes	9.72	-26.34
1684	6/28/2020	20	7	35.98	Yes	9.72	-26.26
1685	6/28/2020	20	8	40.47	Yes	9.72	-30.75
1686	6/28/2020	20	9	46.17	Yes	9.72	-36.45
1687	6/28/2020	20	10	53.12	Yes	9.72	-43.40
1688	6/28/2020	20	11	62.87	Yes	9.72	-53.15
1689	6/28/2020	20	12	62.87	Yes	9.72	-53.15
1690	6/28/2020	21	1	35.44	Yes	9.72	-25.72
1691	6/28/2020	21	2	26.98	Yes	9.72	-17.26
1692	6/28/2020	21	3	27.63	Yes	9.72	-17.91
1693	6/28/2020	21	4	31.59	Yes	9.72	-21.87
1694	6/28/2020	21	5	31.16	Yes	9.72	-21.44
1695	6/28/2020	21	6	29.48	Yes	9.72	-19.76
1696	6/28/2020	21	7	35.52	Yes	9.72	-25.80
1697	6/28/2020	21	8	35.52	Yes	9.72	-25.80
1698	6/28/2020	21	9	35.52	Yes	9.72	-25.80
1699	6/28/2020	21	10	33.27	Yes	9.72	-23.55
1700	6/28/2020	21	11	29.26	Yes	9.72	-19.54
1701	6/28/2020	21	12	29.26	Yes	9.72	-19.54
1702	6/28/2020	22	1	23.19	Yes	9.72	-13.47
1703	6/28/2020	22	2	22.92	Yes	9.72	-13.20
1704	6/28/2020	22	3	22.06	Yes	9.72	-12.34
1705	6/28/2020	22	4	26.86	Yes	9.72	-17.14
1706	6/28/2020	22	5	28.28	Yes	9.72	-18.56

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1707	6/28/2020	22	6	28.28	Yes	9.72	-18.56
1708	6/28/2020	22	7	28.10	Yes	9.72	-18.38
1709	6/28/2020	22	8	24.79	Yes	9.72	-15.07
1710	6/28/2020	22	9	24.48	Yes	9.72	-14.76
1711	6/28/2020	22	10	22.51	Yes	9.72	-12.79
1712	6/28/2020	22	11	18.60	Yes	9.72	-8.88
1713	6/28/2020	22	12	17.66	Yes	9.72	-7.94
1714	6/28/2020	23	1	19.02	Yes	9.72	-9.30
1715	6/28/2020	23	2	19.90	Yes	9.72	-10.18
1716	6/28/2020	23	3	19.02	Yes	9.72	-9.30
1717	6/28/2020	23	4	21.86	Yes	9.72	-12.14
1718	6/28/2020	23	5	24.15	Yes	9.72	-14.43
1719	6/28/2020	23	6	19.45	Yes	9.72	-9.73
1720	6/28/2020	23	7	18.36	Yes	9.72	-8.64
1721	6/28/2020	23	8	13.54	Yes	9.72	-3.82
1722	6/28/2020	23	9	9.34	Yes	9.72	0.38
1723	6/28/2020	23	10	7.29	Yes	9.72	2.43
1724	6/28/2020	23	11	11.87	Yes	9.72	-2.15
1725	6/28/2020	23	12	10.73	Yes	9.72	-1.01
1726	6/28/2020	24	1	18.78	Yes	9.72	-9.06
1727	6/28/2020	24	2	19.80	Yes	9.72	-10.08
1728	6/28/2020	24	3	18.78	Yes	9.72	-9.06
1729	6/28/2020	24	4	19.02	Yes	9.72	-9.30
1730	6/28/2020	24	5	17.06	Yes	9.72	-7.34
1731	6/28/2020	24	6	14.62	Yes	9.72	-4.90
1732	6/28/2020	24	7	14.21	Yes	9.72	-4.49
1733	6/28/2020	24	8	13.64	Yes	9.72	-3.92
1734	6/28/2020	24	9	12.94	Yes	9.72	-3.22
1735	6/28/2020	24	10	12.40	Yes	9.72	-2.68
1736	6/28/2020	24	11	11.93	Yes	9.72	-2.21
1737	6/28/2020	24	12	11.39	Yes	9.72	-1.67
1738	6/29/2020	1	2	34.67	Yes	9.72	-24.95
1739	6/29/2020	1	3	26.76	Yes	9.72	-17.04
1740	6/29/2020	1	4	21.80	Yes	9.72	-12.08
1741	6/29/2020	1	5	19.17	Yes	9.72	-9.45
1742	6/29/2020	1	6	16.27	Yes	9.72	-6.55
1743	6/29/2020	1	7	17.51	Yes	9.72	-7.79
1744	6/29/2020	1	8	19.33	Yes	9.72	-9.61

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1745	6/29/2020	1	9	19.64	Yes	9.72	-9.92
1746	6/29/2020	1	10	17.52	Yes	9.72	-7.80
1747	6/29/2020	1	11	15.93	Yes	9.72	-6.21
1748	6/29/2020	1	12	15.00	Yes	9.72	-5.28
1749	6/29/2020	2	1	20.16	Yes	9.72	-10.44
1750	6/29/2020	2	2	19.23	Yes	9.72	-9.51
1751	6/29/2020	2	3	19.93	Yes	9.72	-10.21
1752	6/29/2020	2	4	18.66	Yes	9.72	-8.94
1753	6/29/2020	2	5	19.21	Yes	9.72	-9.49
1754	6/29/2020	2	6	15.38	Yes	9.72	-5.66
1755	6/29/2020	2	7	15.40	Yes	9.72	-5.68
1756	6/29/2020	2	8	15.66	Yes	9.72	-5.94
1757	6/29/2020	2	9	15.79	Yes	9.72	-6.07
1758	6/29/2020	2	10	15.15	Yes	9.72	-5.43
1759	6/29/2020	2	11	15.10	Yes	9.72	-5.38
1760	6/29/2020	2	12	15.15	Yes	9.72	-5.43
1761	6/29/2020	3	1	20.32	Yes	9.72	-10.60
1762	6/29/2020	3	2	22.19	Yes	9.72	-12.47
1763	6/29/2020	3	3	23.25	Yes	9.72	-13.53
1764	6/29/2020	3	4	22.19	Yes	9.72	-12.47
1765	6/29/2020	3	5	23.49	Yes	9.72	-13.77
1766	6/29/2020	3	6	20.08	Yes	9.72	-10.36
1767	6/29/2020	3	7	18.52	Yes	9.72	-8.80
1768	6/29/2020	3	8	17.50	Yes	9.72	-7.78
1769	6/29/2020	3	9	20.28	Yes	9.72	-10.56
1770	6/29/2020	3	10	19.77	Yes	9.72	-10.05
1771	6/29/2020	3	11	19.17	Yes	9.72	-9.45
1772	6/29/2020	3	12	19.95	Yes	9.72	-10.23
1773	6/29/2020	4	1	19.12	Yes	9.72	-9.40
1774	6/29/2020	4	2	20.60	Yes	9.72	-10.88
1775	6/29/2020	4	3	22.07	Yes	9.72	-12.35
1776	6/29/2020	4	4	21.50	Yes	9.72	-11.78
1777	6/29/2020	4	5	22.17	Yes	9.72	-12.45
1778	6/29/2020	4	6	22.09	Yes	9.72	-12.37
1779	6/29/2020	4	7	20.26	Yes	9.72	-10.54
1780	6/29/2020	4	8	20.24	Yes	9.72	-10.52
1781	6/29/2020	4	9	20.42	Yes	9.72	-10.70
1782	6/29/2020	4	10	20.19	Yes	9.72	-10.47

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1783	6/29/2020	4	11	20.19	Yes	9.72	-10.47
1784	6/29/2020	4	12	19.07	Yes	9.72	-9.35
1785	6/29/2020	5	1	14.34	Yes	9.72	-4.62
1786	6/29/2020	5	2	15.14	Yes	9.72	-5.42
1787	6/29/2020	5	3	15.67	Yes	9.72	-5.95
1788	6/29/2020	5	4	15.83	Yes	9.72	-6.11
1789	6/29/2020	5	5	16.02	Yes	9.72	-6.30
1790	6/29/2020	5	6	15.83	Yes	9.72	-6.11
1791	6/29/2020	5	7	18.07	Yes	9.72	-8.35
1792	6/29/2020	5	8	18.54	Yes	9.72	-8.82
1793	6/29/2020	5	9	18.52	Yes	9.72	-8.80
1794	6/29/2020	5	10	19.01	Yes	9.72	-9.29
1795	6/29/2020	5	11	20.38	Yes	9.72	-10.66
1796	6/29/2020	5	12	22.89	Yes	9.72	-13.17
1797	6/29/2020	6	1	20.82	Yes	9.72	-11.10
1798	6/29/2020	6	2	20.59	Yes	9.72	-10.87
1799	6/29/2020	6	3	22.30	Yes	9.72	-12.58
1800	6/29/2020	6	4	23.71	Yes	9.72	-13.99
1801	6/29/2020	6	5	23.71	Yes	9.72	-13.99
1802	6/29/2020	6	6	23.84	Yes	9.72	-14.12
1803	6/29/2020	6	7	27.41	Yes	9.72	-17.69
1804	6/29/2020	6	8	27.10	Yes	9.72	-17.38
1805	6/29/2020	6	9	25.85	Yes	9.72	-16.13
1806	6/29/2020	6	10	20.47	Yes	9.72	-10.75
1807	6/29/2020	6	11	20.39	Yes	9.72	-10.67
1808	6/29/2020	6	12	23.75	Yes	9.72	-14.03
1809	6/29/2020	7	1	22.98	Yes	9.72	-13.26
1810	6/29/2020	7	2	23.44	Yes	9.72	-13.72
1811	6/29/2020	7	3	24.68	Yes	9.72	-14.96
1812	6/29/2020	7	4	24.68	Yes	9.72	-14.96
1813	6/29/2020	7	5	21.58	Yes	9.72	-11.86
1814	6/29/2020	7	6	17.28	Yes	9.72	-7.56
1815	6/29/2020	7	7	18.50	Yes	9.72	-8.78
1816	6/29/2020	7	8	15.19	Yes	9.72	-5.47
1817	6/29/2020	7	9	13.02	Yes	9.72	-3.30
1818	6/29/2020	7	10	12.27	Yes	9.72	-2.55
1819	6/29/2020	7	11	10.95	Yes	9.72	-1.23
1820	6/29/2020	7	12	3.00	Yes	9.72	6.72

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1821	6/29/2020	8	1	29.73	Yes	9.72	-20.01
1822	6/30/2020	7	6	33.54	Yes	9.92	-23.62
1823	6/30/2020	7	7	23.23	Yes	9.92	-13.31
1824	6/30/2020	7	8	21.21	Yes	9.92	-11.29
1825	6/30/2020	7	9	19.63	Yes	9.92	-9.71
1826	6/30/2020	7	10	15.00	Yes	9.92	-5.08
1827	6/30/2020	7	11	14.81	Yes	9.92	-4.89
1828	6/30/2020	7	12	12.65	Yes	9.92	-2.73
1829	6/30/2020	8	1	19.75	Yes	9.92	-9.83
1830	6/30/2020	8	2	16.69	Yes	9.92	-6.77
1831	6/30/2020	8	3	14.74	Yes	9.92	-4.82
1832	6/30/2020	8	4	15.70	Yes	9.92	-5.78
1833	6/30/2020	8	5	13.88	Yes	9.92	-3.96
1834	6/30/2020	8	6	13.60	Yes	9.92	-3.68
1835	6/30/2020	8	7	23.94	Yes	9.92	-14.02
1836	6/30/2020	8	8	18.87	Yes	9.92	-8.95
1837	6/30/2020	8	9	14.85	Yes	9.92	-4.93
1838	6/30/2020	8	10	15.22	Yes	9.92	-5.30
1839	6/30/2020	8	11	14.67	Yes	9.92	-4.75
1840	6/30/2020	8	12	12.98	Yes	9.92	-3.06
1841	6/30/2020	9	1	14.79	Yes	9.92	-4.87
1842	6/30/2020	9	2	13.84	Yes	9.92	-3.92
1843	6/30/2020	9	3	13.72	Yes	9.92	-3.80
1844	6/30/2020	9	4	15.00	Yes	9.92	-5.08
1845	6/30/2020	9	5	14.61	Yes	9.92	-4.69
1846	6/30/2020	9	6	15.00	Yes	9.92	-5.08
1847	6/30/2020	9	7	14.97	Yes	9.92	-5.05
1848	6/30/2020	9	8	14.96	Yes	9.92	-5.04
1849	6/30/2020	9	9	14.31	Yes	9.92	-4.39
1850	6/30/2020	9	10	14.87	Yes	9.92	-4.95
1851	6/30/2020	9	11	14.06	Yes	9.92	-4.14
1852	6/30/2020	9	12	13.83	Yes	9.92	-3.91
1853	6/30/2020	10	1	16.58	Yes	9.92	-6.66
1854	6/30/2020	10	2	16.51	Yes	9.92	-6.59
1855	6/30/2020	10	3	17.17	Yes	9.92	-7.25
1856	6/30/2020	10	4	17.11	Yes	9.92	-7.19
1857	6/30/2020	10	5	17.10	Yes	9.92	-7.18
1858	6/30/2020	10	6	17.10	Yes	9.92	-7.18

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1859	6/30/2020	10	7	17.46	Yes	9.92	-7.54
1860	6/30/2020	10	8	17.35	Yes	9.92	-7.43
1861	6/30/2020	10	9	15.87	Yes	9.92	-5.95
1862	6/30/2020	10	10	15.81	Yes	9.92	-5.89
1863	6/30/2020	10	11	15.54	Yes	9.92	-5.62
1864	6/30/2020	10	12	15.55	Yes	9.92	-5.63
1865	6/30/2020	11	1	16.47	Yes	9.92	-6.55
1866	6/30/2020	11	2	14.45	Yes	9.92	-4.53
1867	6/30/2020	11	3	12.96	Yes	9.92	-3.04
1868	6/30/2020	11	4	11.70	Yes	9.92	-1.78
1869	6/30/2020	11	5	12.96	Yes	9.92	-3.04
1870	6/30/2020	11	6	1.35	Yes	9.92	8.57
1871	6/30/2020	11	7	10.03	Yes	9.92	-0.11
1872	6/30/2020	11	8	11.61	Yes	9.92	-1.69
1873	6/30/2020	11	9	12.86	Yes	9.92	-2.94
1874	6/30/2020	11	10	11.64	Yes	9.92	-1.72
1875	6/30/2020	11	11	11.64	Yes	9.92	-1.72
1876	6/30/2020	11	12	12.88	Yes	9.92	-2.96
1877	6/30/2020	12	1	15.05	Yes	9.92	-5.13
1878	6/30/2020	12	2	15.53	Yes	9.92	-5.61
1879	6/30/2020	12	3	16.86	Yes	9.92	-6.94
1880	6/30/2020	12	4	16.35	Yes	9.92	-6.43
1881	6/30/2020	12	5	16.35	Yes	9.92	-6.43
1882	6/30/2020	12	6	17.02	Yes	9.92	-7.10
1883	6/30/2020	12	7	16.98	Yes	9.92	-7.06
1884	6/30/2020	12	8	16.36	Yes	9.92	-6.44
1885	6/30/2020	12	9	16.36	Yes	9.92	-6.44
1886	6/30/2020	12	10	17.52	Yes	9.92	-7.60
1887	6/30/2020	12	11	18.22	Yes	9.92	-8.30
1888	6/30/2020	12	12	16.83	Yes	9.92	-6.91
1889	6/30/2020	13	1	17.47	Yes	9.92	-7.55
1890	6/30/2020	13	2	16.12	Yes	9.92	-6.20
1891	6/30/2020	13	3	16.54	Yes	9.92	-6.62
1892	6/30/2020	13	4	12.59	Yes	9.92	-2.67
1893	6/30/2020	13	5	13.50	Yes	9.92	-3.58
1894	6/30/2020	13	6	13.51	Yes	9.92	-3.59
1895	6/30/2020	13	7	25.90	Yes	9.92	-15.98
1896	6/30/2020	13	8	20.70	Yes	9.92	-10.78

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1897	6/30/2020	13	9	20.31	Yes	9.92	-10.39
1898	6/30/2020	13	10	19.69	Yes	9.92	-9.77
1899	6/30/2020	13	11	19.02	Yes	9.92	-9.10
1900	6/30/2020	13	12	18.57	Yes	9.92	-8.65
1901	6/30/2020	14	1	24.68	Yes	9.92	-14.76
1902	6/30/2020	14	2	22.00	Yes	9.92	-12.08
1903	6/30/2020	14	3	22.00	Yes	9.92	-12.08
1904	6/30/2020	14	4	17.78	Yes	9.92	-7.86
1905	6/30/2020	14	5	19.36	Yes	9.92	-9.44
1906	6/30/2020	14	6	20.09	Yes	9.92	-10.17
1907	6/30/2020	14	7	22.93	Yes	9.92	-13.01
1908	6/30/2020	14	8	22.93	Yes	9.92	-13.01
1909	6/30/2020	14	9	24.04	Yes	9.92	-14.12
1910	6/30/2020	14	10	25.31	Yes	9.92	-15.39
1911	6/30/2020	14	11	25.43	Yes	9.92	-15.51
1912	6/30/2020	14	12	25.73	Yes	9.92	-15.81
1913	6/30/2020	15	1	18.57	Yes	9.92	-8.65
1914	6/30/2020	15	2	17.79	Yes	9.92	-7.87
1915	6/30/2020	15	3	17.67	Yes	9.92	-7.75
1916	6/30/2020	15	4	18.43	Yes	9.92	-8.51
1917	6/30/2020	15	5	20.15	Yes	9.92	-10.23
1918	6/30/2020	15	6	21.41	Yes	9.92	-11.49
1919	6/30/2020	15	7	23.77	Yes	9.92	-13.85
1920	6/30/2020	15	8	21.90	Yes	9.92	-11.98
1921	6/30/2020	15	9	21.51	Yes	9.92	-11.59
1922	6/30/2020	15	10	22.11	Yes	9.92	-12.19
1923	6/30/2020	15	11	23.19	Yes	9.92	-13.27
1924	6/30/2020	15	12	24.07	Yes	9.92	-14.15
1925	6/30/2020	16	1	18.83	Yes	9.92	-8.91
1926	6/30/2020	16	2	18.90	Yes	9.92	-8.98
1927	6/30/2020	16	3	18.42	Yes	9.92	-8.50
1928	6/30/2020	16	4	19.19	Yes	9.92	-9.27
1929	6/30/2020	16	5	19.62	Yes	9.92	-9.70
1930	6/30/2020	16	6	18.28	Yes	9.92	-8.36
1931	6/30/2020	16	7	16.98	Yes	9.92	-7.06
1932	6/30/2020	16	8	19.45	Yes	9.92	-9.53
1933	6/30/2020	16	9	18.30	Yes	9.92	-8.38
1934	6/30/2020	16	10	18.08	Yes	9.92	-8.16

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1935	6/30/2020	16	11	18.08	Yes	9.92	-8.16
1936	6/30/2020	16	12	17.47	Yes	9.92	-7.55
1937	6/30/2020	17	1	19.16	Yes	9.92	-9.24
1938	6/30/2020	17	2	18.51	Yes	9.92	-8.59
1939	6/30/2020	17	3	17.86	Yes	9.92	-7.94
1940	6/30/2020	17	4	17.98	Yes	9.92	-8.06
1941	6/30/2020	17	5	18.37	Yes	9.92	-8.45
1942	6/30/2020	17	6	18.47	Yes	9.92	-8.55
1943	6/30/2020	17	7	21.26	Yes	9.92	-11.34
1944	6/30/2020	17	8	21.75	Yes	9.92	-11.83
1945	6/30/2020	17	9	22.75	Yes	9.92	-12.83
1946	6/30/2020	17	10	26.39	Yes	9.92	-16.47
1947	6/30/2020	17	11	25.28	Yes	9.92	-15.36
1948	6/30/2020	17	12	22.79	Yes	9.92	-12.87
1949	6/30/2020	18	1	19.92	Yes	9.92	-10.00
1950	6/30/2020	18	2	16.56	Yes	9.92	-6.64
1951	6/30/2020	18	3	17.18	Yes	9.92	-7.26
1952	6/30/2020	18	4	19.99	Yes	9.92	-10.07
1953	6/30/2020	18	5	21.91	Yes	9.92	-11.99
1954	6/30/2020	18	6	25.83	Yes	9.92	-15.91
1955	6/30/2020	18	7	21.45	Yes	9.92	-11.53
1956	6/30/2020	18	8	27.57	Yes	9.92	-17.65
1957	6/30/2020	18	9	27.62	Yes	9.92	-17.70
1958	6/30/2020	18	10	27.41	Yes	9.92	-17.49
1959	6/30/2020	18	11	28.24	Yes	9.92	-18.32
1960	6/30/2020	18	12	26.31	Yes	9.92	-16.39
1961	6/30/2020	19	1	17.78	Yes	9.92	-7.86
1962	6/30/2020	19	2	17.80	Yes	9.92	-7.88
1963	6/30/2020	19	3	19.32	Yes	9.92	-9.40
1964	6/30/2020	19	4	16.72	Yes	9.92	-6.80
1965	6/30/2020	19	5	19.64	Yes	9.92	-9.72
1966	6/30/2020	19	6	26.24	Yes	9.92	-16.32
1967	6/30/2020	19	7	27.41	Yes	9.92	-17.49
1968	6/30/2020	19	8	30.83	Yes	9.92	-20.91
1969	6/30/2020	19	9	47.46	Yes	9.92	-37.54
1970	6/30/2020	19	10	40.21	Yes	9.92	-30.29
1971	6/30/2020	19	11	29.15	Yes	9.92	-19.23
1972	6/30/2020	19	12	385.45	Yes	9.92	-375.53

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1973	6/30/2020	20	1	21.48	Yes	9.92	-11.56
1974	6/30/2020	20	2	22.67	Yes	9.92	-12.75
1975	6/30/2020	20	3	22.84	Yes	9.92	-12.92
1976	6/30/2020	20	4	23.59	Yes	9.92	-13.67
1977	6/30/2020	20	5	23.25	Yes	9.92	-13.33
1978	6/30/2020	20	6	24.05	Yes	9.92	-14.13
1979	6/30/2020	20	7	22.73	Yes	9.92	-12.81
1980	6/30/2020	20	8	24.16	Yes	9.92	-14.24
1981	6/30/2020	20	9	24.25	Yes	9.92	-14.33
1982	6/30/2020	23	7	14.19	Yes	9.92	-4.27
1983	6/30/2020	23	8	14.48	Yes	9.92	-4.56
1984	6/30/2020	23	9	17.65	Yes	9.92	-7.73
1985	6/30/2020	23	10	15.39	Yes	9.92	-5.47
1986	6/30/2020	23	11	15.39	Yes	9.92	-5.47
1987	6/30/2020	23	12	16.49	Yes	9.92	-6.57
1988	6/30/2020	24	1	18.03	Yes	9.92	-8.11
1989	6/30/2020	24	2	18.42	Yes	9.92	-8.50
1990	6/30/2020	24	3	18.03	Yes	9.92	-8.11
1991	6/30/2020	24	4	13.65	Yes	9.92	-3.73
1992	6/30/2020	24	5	15.91	Yes	9.92	-5.99
1993	6/30/2020	24	6	14.21	Yes	9.92	-4.29
1994	6/30/2020	24	7	15.78	Yes	9.92	-5.86
1995	6/30/2020	24	8	15.44	Yes	9.92	-5.52
1996	6/30/2020	24	9	13.66	Yes	9.92	-3.74
1997	6/30/2020	24	10	13.43	Yes	9.92	-3.51
1998	6/30/2020	24	11	13.43	Yes	9.92	-3.51
1999	6/30/2020	24	12	12.53	Yes	9.92	-2.61

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	6/29/2020	24	1	17.69	Yes	21.33	3.64
2	6/29/2020	24	2	17.93	Yes	21.33	3.40
3	6/29/2020	24	3	17.93	Yes	21.33	3.40
4	6/29/2020	24	4	16.72	Yes	21.33	4.61
5	6/29/2020	24	5	16.69	Yes	21.33	4.64
6	6/29/2020	24	6	16.16	Yes	21.33	5.17
7	6/29/2020	24	7	14.95	Yes	21.33	6.38
8	6/29/2020	24	8	14.30	Yes	21.33	7.03
9	6/29/2020	24	9	13.38	Yes	21.33	7.95
10	6/29/2020	24	10	13.56	Yes	21.33	7.77
11	6/29/2020	24	11	13.34	Yes	21.33	7.99
12	6/29/2020	24	12	11.68	Yes	21.33	9.65

Appendix C: Exceptional Dispatch Bid Mitigation Analysis

In June 2020, the ISO applied the exceptional dispatch bid mitigation to the exceptional dispatches. Table 10 shows the costs by instruction type in June. With exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches were $ 299. Without the exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches would be $ 980. The cost saving from the exceptional dispatch bid mitigation was $ 681.

Table 10: Bid Mitigation Analysis for June 2020

Type	Number of Resources	Costs without Bid Mitigation	Costs with Bid Mitigation	Cost Saving
NONTMOD	3	$ 980	$ 299	$ 681
Total	3	$ 980	$ 299	$ 681