

November 15, 2019

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

**Re: California Independent System Operator Corporation
Docket Nos. ER08-1178-000 and EL08-88-000
August 2019 Exceptional Dispatch Report (Chart 2 Data)
And September 2019 Exceptional Dispatch Reports (Charts 1 and 2)**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) is in the process of reviewing opportunities for improvement in reporting Exceptional Dispatch information. With this filing, the CAISO will be accelerating the timeline for submitting the two monthly reports in this docket.

As we have explained in our previous transmittal letters, we file two reports each month. Chart 1, filed on the 15th of the month, and includes Exceptional Dispatch information except for cost data and the degree of mitigation and price impact analyses. Chart 2, filed on the 30th of the month, and includes all of the information, cost data and the degree of mitigation and price impact analyses.

In order to publish information in a timelier manner, today we are filing:

- Chart 2 report for August 2019, which would normally be filed on the 30th of the month. (Attachment A)
- Chart 1 report for September 2019 (Attachment B)
- Chart 2 for September 2019 (Attachment C)

Next month, the CAISO will file both the Chart 1 and Chart 2 reports for October, 2019 on December 15, 2019, and on January 15, 2020, the CAISO will file both Chart 1 and Chart 2 for November 2019. The CAISO will proceed to file both reports on the 15th of the month for data and cost information regarding Exceptional Dispatches occurring

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in the prior month until the CAISO amends the tariff. The CAISO plans to propose amendments in the near future.

Respectfully submitted,

By: /s/ Sidney L. Mannheim

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ATTACHMENT A

**August 2019 Exceptional Dispatch Report
Chart 2 data**



Exceptional Dispatch Report

Table 2: August 2019

Market Quality and Renewable Integration

November 15, 2019

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Introduction

This report is filed pursuant to FERC's September 2, 2009, and May 4, 2010, orders in ER08-1178. These orders require two monthly Exceptional Dispatch reports—one issued on the 15th of each month and one issued on the 30th of each month. This report provides data on the frequency, reasons and costs for Exceptional Dispatches issued in August 2019.

This report contains a price impact analysis as prescribed by FERC in its September 2 order. The price impact analysis for the month of August is presented in Appendix B. This report also includes mitigation analysis for August 2019 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 August is presented in Appendix C.

The Nature of Exceptional Dispatch

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

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

Additional reasons for exceptional dispatch instructions in 2019 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 established to prevent instability, uncontrolled separation or cascading as described in operating procedure 3100. System Operating Limits (SOL) are the facility ratings, system voltage limits, transient stability limits, and voltage stability limits used in the operating horizon, any of which can be the most restrictive limit at any point in time, pre – or post – contingency. Control Points (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 August, 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 August 2019. 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.

Table 1: Exceptional Dispatches in August 2019

| California Independent System Operator Corporation Exceptional Dispatch Report December 2, 2019 | | | | | | | | | | | | | | | | | | | | | |
|---|-------------|--|----------|------------------------|------------|----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|------------|------------------|------------|------------|----------|---------|--------|
| Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019 | | | | | | | | | | | | | | | | | | | | | |
| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 | CC6620 |
| 1 | RT | Bridging Schedules | SCE | LA Basin | 8/21/2019 | 10 - 20 | Yes | INC | 2 | 22:00 | 0:00 | 2.91 | 8563.53 | 0.00 | -140.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | RT | Bridging Schedules | SCE | LA Basin | 8/22/2019 | 10 - 20 | No | INC | 4 | 0:00 | 4:00 | 0.00 | 17421.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | RT | Bridging Schedules | SCE | LA Basin | 8/25/2019 | 10 | Yes | INC | 1 | 23:00 | 0:00 | 0.00 | 1688.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | RT | Bridging Schedules | SCE | LA Basin | 8/26/2019 | 10 | No | INC | 4 | 0:00 | 4:00 | 0.00 | 6755.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | RT | Bridging Schedules | SCE | LA Basin | 8/28/2019 | 20 | No | INC | 11 | 13:00 | 0:00 | 41.55 | 16704.97 | 0.00 | -1585.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | RT | Bridging Schedules | SCE | LA Basin | 8/30/2019 | 70 | No | INC | 2 | 22:00 | 0:00 | 4.15 | 20499.57 | 0.00 | -237.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | RT | Bridging Schedules | SDGE | San Diego-IV | 8/31/2019 | 155 | No | INC | 6 | 0:00 | 5:30 | 93.72 | 41082.03 | 0.00 | -2651.12 | 39.34 | -998.11 | 0.00 | 0.00 | -173.31 | 0.00 |
| 8 | RT | Conditions beyond the control of the CAISO | PGAE | Fresno | 8/3/2019 | 83 | No | INC | 3 | 14:25 | 17:00 | -152.63 | 24262.18 | 0.00 | 3284.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | RT | Conditions beyond the control of the CAISO | SCE | Big Creek-Ventura | 8/5/2019 | 50 | No | INC | 3 | 21:00 | 0:00 | -30.32 | 48133.43 | 0.00 | 1478.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | RT | Conditions beyond the control of the CAISO | SCE | Big Creek-Ventura | 8/15/2019 | 500 | No | INC | 4 | 17:00 | 21:00 | 131.19 | 124887.89 | 0.00 | -18234.19 | 124.88 | -11978.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | RT | Conditions beyond the control of the CAISO | SCE | LA Basin | 8/4/2019 | 10 | No | INC | 1 | 23:00 | 0:00 | 0.00 | 4589.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | RT | Conditions beyond the control of the CAISO | SCE | LA Basin | 8/15/2019 | 340 | No | DEC | 2 | 18:00 | 20:00 | 0.28 | -15.64 | 0.00 | -174.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | RT | Conditions beyond the control of the CAISO | SCE | LA Basin | 8/15/2019 | 340 | No | INC | 7 | 16:15 | 23:00 | -14.31 | 17645.59 | 0.00 | 537.23 | 0.00 | 0.00 | 0.00 | 21719.44 | 0.00 | 0.00 |
| 14 | RT | Conditions beyond the control of the CAISO | SDGE | San Diego-IV | 8/3/2019 | 21 - 422 | No | INC | 3 | 14:20 | 16:45 | 145.67 | 13678.70 | 1596.60 | -100756.21 | 127.12 | -80762.15 | 0.00 | -80.22 | 0.00 | 0.00 |
| 15 | RT | Contingency Dispatch | PGAE | Fresno | 8/3/2019 | 83 - 300 | No | INC | 1 | 14:00 | 14:45 | -2.21 | 952.67 | 0.00 | -187.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | RT | Fast Start Unit Management | PGAE | Bay Area | 8/1/2019 | 0 | No | INC | 2 | 20:15 | 21:20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | RT | Fast Start Unit Management | SCE | LA Basin | 8/16/2019 | 0 | No | INC | 1 | 0:05 | 1:05 | -31.27 | 1178.98 | 0.00 | 0.00 | -31.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 2, 2019**

Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 | Fast Start Unit Management | SCE | LA Basin | 8/25/2019 | 0 | No | INC | 1 | 23:50 | 0:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | RT | Fast Start Unit Management | SCE | LA Basin | 8/26/2019 | 0 | No | INC | 1 | 0:00 | 0:35 | -2.50 | 94.03 | 0.00 | 0.00 | -2.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | RT | Fast Start Unit Management | SDGE | San Diego-IV | 8/7/2019 | 0 | No | INC | 1 | 13:45 | 14:45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | RT | Fast Start Unit Management | SDGE | San Diego-IV | 8/8/2019 | 0 | No | INC | 1 | 15:30 | 16:30 | -15.00 | 910.25 | 82.19 | 0.00 | -15.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | RT | Fast Start Unit Management | SDGE | San Diego-IV | 8/10/2019 | 0 | No | INC | 1 | 21:00 | 22:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 23 | RT | Fire Threats | SDGE | San Diego-IV | 8/3/2019 | 422 | No | INC | 1 | 15:00 | 15:30 | -1.42 | 0.00 | 0.00 | 47.20 | 0.00 | 0.00 | 0.00 | -73.90 | 0.00 | 0.00 |
| 24 | RT | Load Forecast Uncertainty | Intertie | NA | 8/13/2019 | 125 - 308 | No | INC | 1 | 19:00 | 20:00 | 326.00 | 0.00 | 0.00 | -16402.90 | 326.00 | -16402.90 | 0.00 | -104099.38 | 0.00 | 0.00 |
| 25 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 8/29/2019 | 175 | No | INC | 7 | 15:00 | 22:00 | 154.19 | 88671.08 | 0.00 | -5211.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 26 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 8/30/2019 | 175 | No | INC | 5 | 16:00 | 21:00 | 171.84 | 57323.09 | 26479.38 | -9055.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 27 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 8/31/2019 | 134 - 357 | No | INC | 7 | 15:00 | 22:00 | 117.30 | 88915.52 | 26174.08 | -4915.12 | 0.00 | 0.00 | 0.00 | -10.82 | 0.00 | |
| 28 | RT | Load Forecast Uncertainty | PGAE | Fresno | 8/23/2019 | 83 | No | INC | 1 | 21:05 | 22:00 | 23.67 | 0.00 | 0.00 | -944.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 29 | RT | Load Forecast Uncertainty | PGAE | NA | 8/31/2019 | 140 | No | INC | 6 | 15:30 | 21:30 | -8.99 | 33848.52 | 14457.00 | 92.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 30 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/5/2019 | 50 | No | INC | 5 | 11:00 | 16:00 | 327.60 | 20495.30 | 0.00 | -11433.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 31 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/6/2019 | 50 | No | INC | 13 | 11:00 | 0:00 | 0.00 | 112412.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 32 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/12/2019 | 50 | Yes | INC | 5 | 19:00 | 0:00 | 39.72 | 35632.30 | 99526.86 | -1350.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 33 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/13/2019 | 50 - 250 | No | INC | 14 | 10:00 | 0:00 | 1083.62 | 329178.30 | 138153.75 | -62060.57 | 65.45 | -4210.51 | 0.00 | -3334.93 | 0.00 | |
| 34 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/14/2019 | 50 - 200 | No | INC | 24 | 0:00 | 0:00 | 701.94 | 532636.45 | 0.00 | -34659.36 | 184.86 | -20708.39 | 0.00 | 0.00 | 0.00 | |

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 2, 2019**

Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 | CC6620 |
|--------|-------------|---------------------------|----------|------------------------|------------|------------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|------------|--------|--------|
| 35 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/15/2019 | 50 - 400.1 | No | INC | 24 | 0:00 | 0:00 | 72.63 | 479159.87 | 0.00 | -980.16 | 0.00 | -0.12 | 0.00 | -3451.73 | 0.00 | 0.00 |
| 36 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/16/2019 | 50 - 100 | No | INC | 24 | 0:00 | 0:00 | 123.59 | 867635.67 | 0.00 | -5032.21 | 41.67 | -4239.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 37 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/26/2019 | 50 | No | INC | 14 | 10:00 | 0:00 | 40.04 | 131423.51 | 0.00 | -4785.18 | 47.30 | -5032.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| 38 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/27/2019 | 50 - 100 | No | INC | 14 | 10:00 | 0:00 | -21.84 | 238505.87 | 0.00 | 1112.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 39 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 8/28/2019 | 100 | No | INC | 13 | 0:00 | 13:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 40 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/5/2019 | 130 | No | INC | 10 | 14:00 | 0:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 41 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/6/2019 | 10 | Yes | INC | 20 | 4:00 | 0:00 | 0.00 | 66710.95 | 13220.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 42 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/7/2019 | 10 | No | INC | 11 | 0:00 | 11:00 | 1.87 | 0.00 | 0.00 | -163.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 43 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/10/2019 | 190 - 194 | No | INC | 5 | 16:00 | 21:00 | 45.13 | 0.00 | 0.00 | -4809.38 | 0.00 | 0.00 | 0.00 | -132288.99 | 0.00 | 0.00 |
| 44 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/12/2019 | 10 - 175 | No | INC | 11 | 13:00 | 0:00 | 11.63 | 32016.78 | 24926.69 | -370.56 | 34.04 | -1414.73 | 0.00 | -127455.15 | 0.00 | 0.00 |
| 45 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/13/2019 | 10 | No | DEC | 3 | 0:00 | 3:00 | 0.71 | 0.00 | 0.00 | -16.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 46 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/13/2019 | 10 - 240 | No | INC | 21 | 3:00 | 0:00 | 494.95 | 101054.16 | 0.00 | -48086.54 | 118.77 | -9148.16 | 0.00 | -92173.45 | 0.00 | 0.00 |
| 47 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/14/2019 | 10 | Yes | INC | 24 | 0:00 | 0:00 | -75.73 | 155173.97 | 0.00 | 5327.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 48 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/15/2019 | 165 | No | DEC | 3 | 17:00 | 20:00 | 1.47 | -23.04 | 0.00 | 1183.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 49 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/15/2019 | 10 - 340 | No | INC | 24 | 0:00 | 0:00 | 758.81 | -22142.41 | 0.00 | -64243.60 | 21.28 | -613.65 | 0.00 | -19150.55 | 0.00 | 0.00 |
| 50 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/16/2019 | 10 - 170 | No | INC | 24 | 0:00 | 0:00 | 330.45 | 98256.61 | 0.00 | -26122.06 | 300.00 | -24660.75 | 0.00 | 0.00 | 0.00 | 0.00 |
| 51 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/26/2019 | 20 - 170 | No | INC | 8 | 16:00 | 0:00 | 251.94 | 86385.63 | 0.00 | -9675.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 2, 2019**

Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|---------------------------|----------|------------------------|------------|------------|------------|---------|-------|------------|----------|-----------|---------------|---------------|----------|------------------|------------|------------|--------|--------|--------|
| 52 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/27/2019 | 10 - 20 | No | INC | 16 | 8:00 | 0:00 | -269.75 | 76624.96 | 13106.11 | 14761.04 | 0.00 | -0.38 | 0.00 | 0.00 | 0.00 | 0.00 |
| 53 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/28/2019 | 10 | No | DEC | 1 | 13:00 | 14:00 | -12.40 | 0.00 | 0.00 | 393.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 54 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/28/2019 | 10 - 130 | No | INC | 24 | 0:00 | 0:00 | 298.85 | 527201.50 | 0.00 | -9058.87 | 2.14 | -141.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| 55 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/29/2019 | 10 - 20 | No | INC | 24 | 0:00 | 0:00 | 29.98 | 146961.22 | 0.00 | -4895.65 | 0.00 | -0.33 | 0.00 | 0.00 | 0.00 | 0.00 |
| 56 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/31/2019 | 147.1 | No | DEC | 17 | 6:40 | 23:00 | 4.12 | 0.00 | 0.00 | -347.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 57 | RT | Load Forecast Uncertainty | SCE | LA Basin | 8/31/2019 | 70 - 147.1 | No | INC | 24 | 0:00 | 0:00 | 122.87 | 205006.90 | 0.00 | -4393.53 | 62.06 | -2916.52 | 0.00 | 0.00 | 0.00 | 0.00 |
| 58 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 8/25/2019 | 155 | No | INC | 10 | 14:00 | 0:00 | -18.54 | 76168.72 | 15262.36 | 674.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 59 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 8/31/2019 | 155 | No | INC | 9 | 15:30 | 0:00 | -7.66 | 106532.87 | 0.00 | 149.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 60 | RT | Load Pull | PGAE | Stockton | 8/13/2019 | 275 | No | INC | 4 | 18:25 | 22:00 | 23.47 | -4465.44 | 0.00 | -5740.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 61 | RT | Load Pull | SCE | Big Creek-Ventura | 8/13/2019 | 400 - 401 | No | INC | 3 | 18:00 | 21:00 | -0.39 | 69060.40 | 0.00 | -3989.37 | 32.12 | -3061.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| 62 | RT | Load Pull | SCE | LA Basin | 8/5/2019 | 190 | No | DEC | 2 | 17:00 | 19:00 | -2.34 | 0.00 | 0.00 | -268.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 63 | RT | Load Pull | SCE | LA Basin | 8/5/2019 | 190 - 194 | No | INC | 8 | 12:15 | 20:00 | 27.85 | 0.00 | 0.00 | -7215.02 | 0.82 | -116.38 | 0.00 | 0.00 | 0.00 | 0.00 |
| 64 | RT | Load Pull | SCE | LA Basin | 8/12/2019 | 495 | No | INC | 5 | 16:40 | 21:00 | 134.41 | 87063.46 | 0.00 | -9186.77 | 114.32 | -8254.13 | 0.00 | 0.00 | 0.00 | 0.00 |
| 65 | RT | Load Pull | SCE | LA Basin | 8/13/2019 | 195 | No | INC | 4 | 17:50 | 21:00 | -8.98 | 0.00 | 0.00 | 1164.83 | 38.41 | -3940.51 | 0.00 | 0.00 | 0.00 | 0.00 |
| 66 | RT | Load Pull | SCE | LA Basin | 8/15/2019 | 65 - 240 | No | INC | 3 | 14:00 | 16:30 | 39.04 | 22572.87 | 0.00 | -3320.59 | 33.88 | -3119.44 | 0.00 | 0.00 | 0.00 | 0.00 |
| 67 | RT | Market Disruption | PGAE | Fresno | 8/23/2019 | 83 | No | DEC | 1 | 20:50 | 21:00 | -17.64 | 0.00 | 0.00 | 533.85 | -12.83 | 0.00 | 433.06 | 0.00 | 0.00 | 0.00 |
| 68 | RT | Market Disruption | SCE | LA Basin | 8/23/2019 | 210 | No | DEC | 1 | 20:50 | 21:30 | -26.82 | 0.00 | 0.00 | 776.79 | -12.53 | 0.00 | 295.36 | 0.00 | 0.00 | 0.00 |
| 69 | RT | Market Disruption | SCE | LA Basin | 8/23/2019 | 20 | No | INC | 3 | 20:50 | 23:00 | -14.00 | 0.00 | 0.00 | -340.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 2, 2019**

Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|--|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|----------|------------------|------------|------------|--------|--------|--------|
| 70 | RT | Operating Procedure Number and Constraint (6410) | SDGE | San Diego-IV | 8/3/2019 | 21 | No | INC | 2 | 15:30 | 17:15 | -2.60 | 10752.46 | 1043.28 | 96.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 71 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 8/11/2019 | 15 - 45 | No | INC | 3 | 21:00 | 0:00 | 2.05 | 2567.85 | 0.00 | -63.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 72 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 8/28/2019 | 14 - 32 | No | DEC | 11 | 13:00 | 0:00 | 1.54 | -11228.60 | 0.00 | -80.43 | -1.86 | 0.00 | 12.51 | 0.00 | 0.00 | 0.00 |
| 73 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 8/28/2019 | 14 - 32 | No | INC | 19 | 5:40 | 0:00 | 5.44 | 8209.38 | 0.00 | -204.30 | -0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 74 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 8/29/2019 | 15 | No | DEC | 3 | 0:00 | 2:50 | -0.11 | 0.00 | 0.00 | 2.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 75 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 8/29/2019 | 32 | No | INC | 6 | 0:00 | 5:30 | 3.50 | 1139.41 | 0.00 | -111.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 76 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 8/31/2019 | 32 | No | INC | 16 | 8:25 | 0:00 | 6.90 | 4890.56 | 0.00 | -154.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 77 | RT | Operating Procedure Number and Constraint (7450) | PGAE | Kern | 8/29/2019 | 32 | No | INC | 7 | 16:50 | 23:00 | -1.73 | 8867.60 | 5394.27 | -41.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 78 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/5/2019 | 450 | No | INC | 3 | 21:10 | 0:00 | -0.58 | 8819.28 | 0.00 | -28.73 | -4.17 | 0.00 | 132.54 | 0.00 | 0.00 | 0.00 |
| 79 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/6/2019 | 411 | No | DEC | 7 | 14:00 | 21:00 | -3.38 | -17271.87 | 0.00 | 141.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 80 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/6/2019 | 411 - 450 | No | INC | 13 | 11:45 | 0:00 | -86.46 | -1338.44 | 0.00 | 2820.38 | -15.91 | 0.00 | 554.80 | 0.00 | 0.00 | 0.00 |
| 81 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/8/2019 | 410 | No | DEC | 4 | 18:45 | 22:00 | 3.84 | -16216.59 | 0.00 | -196.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 82 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/8/2019 | 410 | No | INC | 1 | 22:00 | 23:00 | 33.90 | 0.00 | 0.00 | -1000.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 83 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/15/2019 | 470 - 476 | No | DEC | 3 | 17:00 | 20:00 | -0.38 | -611.19 | 0.00 | 16.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 84 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/15/2019 | 476 | No | INC | 1 | 16:55 | 17:00 | -0.31 | 0.00 | 0.00 | 10.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 85 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/16/2019 | 430 - 460 | No | INC | 8 | 15:30 | 23:00 | -78.08 | 0.00 | 0.00 | 2166.07 | -13.42 | 0.00 | 440.00 | 0.00 | 0.00 | 0.00 |
| 86 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/18/2019 | 460 | No | INC | 8 | 14:40 | 22:00 | 0.07 | -115.97 | 0.00 | 110.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 87 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/20/2019 | 470 | No | INC | 5 | 17:55 | 22:00 | -94.07 | 0.00 | 0.00 | 2985.03 | -0.42 | 0.00 | 14.38 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 2, 2019**

Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|--|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|--------|--------|--------|
| 88 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/22/2019 | 476 | No | INC | 6 | 17:50 | 23:00 | 11.81 | 6471.04 | 0.00 | -500.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 89 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/23/2019 | 450 - 476 | No | INC | 15 | 5:55 | 20:00 | -51.09 | 3862.53 | 0.00 | 4227.84 | -0.04 | 0.00 | 1.51 | 0.00 | 0.00 | 0.00 |
| 90 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/24/2019 | 476 | No | INC | 12 | 12:25 | 0:00 | 22.21 | 22445.66 | 0.00 | -779.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 91 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/25/2019 | 475 | No | INC | 5 | 15:30 | 20:00 | 291.17 | 0.00 | 0.00 | -30952.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 92 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/26/2019 | 450 | No | DEC | 1 | 18:00 | 19:00 | -4.04 | 0.00 | 0.00 | 121.64 | -5.00 | 0.00 | 166.80 | 0.00 | 0.00 | 0.00 |
| 93 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/26/2019 | 450 - 475 | No | INC | 17 | 7:30 | 0:00 | -65.27 | 9325.06 | 0.00 | 2092.02 | -13.49 | 0.00 | 450.01 | 0.00 | 0.00 | 0.00 |
| 94 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/27/2019 | 470 - 475 | No | INC | 24 | 0:00 | 0:00 | 7.11 | 22934.31 | 0.00 | -239.93 | -0.82 | 0.00 | 26.94 | 0.00 | 0.00 | 0.00 |
| 95 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/28/2019 | 450 - 480 | No | INC | 5 | 19:55 | 0:00 | 30.45 | 3183.99 | 0.00 | -1064.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 96 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/29/2019 | 450 - 474 | No | INC | 21 | 0:00 | 21:00 | -142.23 | -2592.03 | 0.00 | 4361.82 | -3.00 | 0.00 | 109.44 | 0.00 | 0.00 | 0.00 |
| 97 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/30/2019 | 474 - 475 | No | INC | 10 | 13:35 | 23:00 | -59.03 | 6553.10 | 0.00 | 2001.96 | -0.57 | 0.00 | 18.79 | 0.00 | 0.00 | 0.00 |
| 98 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 8/31/2019 | 468 - 474 | No | INC | 11 | 12:40 | 23:00 | 96.94 | -1156.43 | 0.00 | -4309.12 | -0.08 | 0.00 | 3.10 | 0.00 | 0.00 | 0.00 |
| 99 | RT | Operating Procedure Number and Constraint (7820) | SDGE | San Diego-IV | 8/5/2019 | 24 - 100 | No | INC | 5 | 1:55 | 6:45 | 129.55 | 1260.29 | 0.00 | -6374.95 | 48.33 | -2057.14 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100 | RT | Other Reliability Requirement | PGAE | Fresno | 8/1/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 3.40 | 0.00 | 0.00 | -83.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 101 | RT | Other Reliability Requirement | PGAE | Fresno | 8/2/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -1.05 | 0.00 | 0.00 | 34.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 102 | RT | Other Reliability Requirement | PGAE | Fresno | 8/3/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -5.85 | 0.00 | 0.00 | -262.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 103 | RT | Other Reliability Requirement | PGAE | Fresno | 8/4/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -1.61 | 0.00 | 0.00 | 76.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 104 | RT | Other Reliability Requirement | PGAE | Fresno | 8/5/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 0.45 | 0.00 | 0.00 | -277.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 105 | RT | Other Reliability Requirement | PGAE | Fresno | 8/6/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 6.67 | 0.00 | 0.00 | -247.08 | 7.14 | -274.96 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
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Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|-------------------------------|----------|------------------------|------------|--------|------------|---------|-------|------------|----------|-----------|---------------|---------------|---------|------------------|------------|------------|--------|--------|--------|
| 106 | RT | Other Reliability Requirement | PGAE | Fresno | 8/7/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -29.56 | 0.00 | 0.00 | 198.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 107 | RT | Other Reliability Requirement | PGAE | Fresno | 8/8/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -3.33 | 0.00 | 0.00 | 89.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 108 | RT | Other Reliability Requirement | PGAE | Fresno | 8/9/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -6.47 | 0.00 | 0.00 | 76.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 109 | RT | Other Reliability Requirement | PGAE | Fresno | 8/10/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 1.72 | 0.00 | 0.00 | -131.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 110 | RT | Other Reliability Requirement | PGAE | Fresno | 8/11/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 7.20 | 0.00 | 0.00 | -0.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 111 | RT | Other Reliability Requirement | PGAE | Fresno | 8/12/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -1.26 | 0.00 | 0.00 | 52.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 112 | RT | Other Reliability Requirement | PGAE | Fresno | 8/13/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -3.89 | 0.00 | 0.00 | 207.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 113 | RT | Other Reliability Requirement | PGAE | Fresno | 8/14/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -3.57 | 0.00 | 0.00 | 137.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 114 | RT | Other Reliability Requirement | PGAE | Fresno | 8/15/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 0.04 | 0.00 | 0.00 | 274.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 115 | RT | Other Reliability Requirement | PGAE | Fresno | 8/16/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -4.02 | 0.00 | 0.00 | 116.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 116 | RT | Other Reliability Requirement | PGAE | Fresno | 8/17/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 1.61 | 0.00 | 0.00 | 85.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 117 | RT | Other Reliability Requirement | PGAE | Fresno | 8/18/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -6.63 | 0.00 | 0.00 | 59.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 118 | RT | Other Reliability Requirement | PGAE | Fresno | 8/19/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -1.51 | 0.00 | 0.00 | 45.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 119 | RT | Other Reliability Requirement | PGAE | Fresno | 8/20/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -6.57 | 0.00 | 0.00 | 170.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 120 | RT | Other Reliability Requirement | PGAE | Fresno | 8/21/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -3.37 | 0.00 | 0.00 | 64.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 121 | RT | Other Reliability Requirement | PGAE | Fresno | 8/22/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 5.99 | 0.00 | 0.00 | -213.37 | 7.14 | -215.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| 122 | RT | Other Reliability Requirement | PGAE | Fresno | 8/23/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -3.22 | 0.00 | 0.00 | 272.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 123 | RT | Other Reliability Requirement | PGAE | Fresno | 8/24/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -1.01 | 0.00 | 0.00 | 265.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
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Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|-------------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|----------|------------------|------------|------------|--------|--------|--------|
| 124 | RT | Other Reliability Requirement | PGAE | Fresno | 8/25/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -2.05 | 0.00 | 0.00 | 87.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 125 | RT | Other Reliability Requirement | PGAE | Fresno | 8/26/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -3.29 | 0.00 | 0.00 | 129.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 126 | RT | Other Reliability Requirement | PGAE | Fresno | 8/27/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -3.56 | 0.00 | 0.00 | 119.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 127 | RT | Other Reliability Requirement | PGAE | Fresno | 8/28/2019 | 4 - 100 | No | INC | 24 | 0:00 | 0:00 | 67.67 | 8142.22 | 0.00 | -2374.30 | 7.08 | -241.19 | 0.00 | 0.00 | 0.00 | 0.00 |
| 128 | RT | Other Reliability Requirement | PGAE | Fresno | 8/29/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 0.34 | 0.00 | 0.00 | -33.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 129 | RT | Other Reliability Requirement | PGAE | Fresno | 8/30/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 1.37 | 0.00 | 0.00 | -24.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 130 | RT | Other Reliability Requirement | PGAE | Fresno | 8/31/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -0.63 | 0.00 | 0.00 | 35.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 131 | RT | Other Reliability Requirement | PGAE | Humboldt | 8/5/2019 | 14 - 28 | No | INC | 1 | 23:10 | 0:00 | -4.19 | 633.69 | 0.00 | 143.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 132 | RT | Other Reliability Requirement | PGAE | Humboldt | 8/6/2019 | 14 - 45 | No | DEC | 12 | 12:00 | 0:00 | 3.82 | -4005.90 | 0.00 | 14.81 | -1.65 | 0.00 | 76.34 | 0.00 | -17.39 | 0.00 |
| 133 | RT | Other Reliability Requirement | PGAE | Humboldt | 8/6/2019 | 14 - 45 | No | INC | 24 | 0:00 | 23:15 | 5.07 | 11720.96 | 0.00 | -165.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 134 | RT | Other Reliability Requirement | PGAE | Humboldt | 8/7/2019 | 15 | No | DEC | 9 | 0:00 | 8:15 | 34.85 | -4917.25 | 0.00 | -1031.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 135 | RT | Other Reliability Requirement | PGAE | Humboldt | 8/30/2019 | 0 | No | INC | 2 | 22:05 | 23:45 | 3.17 | 0.00 | 0.00 | -126.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 136 | RT | Other Reliability Requirement | PGAE | NA | 8/1/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 9.34 | 0.00 | 0.00 | -227.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 137 | RT | Other Reliability Requirement | PGAE | NA | 8/2/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 14.26 | 0.00 | 0.00 | -338.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 138 | RT | Other Reliability Requirement | PGAE | NA | 8/3/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 9.49 | 0.00 | 0.00 | -1230.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 139 | RT | Other Reliability Requirement | PGAE | NA | 8/4/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 14.12 | 0.00 | 0.00 | -253.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 140 | RT | Other Reliability Requirement | PGAE | NA | 8/5/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 10.72 | 0.00 | 0.00 | -203.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 141 | RT | Other Reliability Requirement | PGAE | NA | 8/6/2019 | 32 - 38 | Yes | INC | 24 | 0:00 | 0:00 | 9.57 | 14854.48 | 5253.59 | -165.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
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Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 | |
|--------|-------------|-------------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|---------|------------------|------------|------------|--------|--------|--------|------|
| 142 | RT | Other Reliability Requirement | PGAE | NA | 8/7/2019 | 32 - 38 | No | INC | 24 | 0:00 | 0:00 | -9.51 | 13288.42 | 1789.32 | -358.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 143 | RT | Other Reliability Requirement | PGAE | NA | 8/8/2019 | 32 - 38 | No | INC | 24 | 0:00 | 0:00 | 3.39 | 7073.10 | 0.00 | -68.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 144 | RT | Other Reliability Requirement | PGAE | NA | 8/9/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -5.10 | 0.00 | 0.00 | 102.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 145 | RT | Other Reliability Requirement | PGAE | NA | 8/10/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -28.20 | 0.00 | 0.00 | 597.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 146 | RT | Other Reliability Requirement | PGAE | NA | 8/11/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -3.54 | 0.00 | 0.00 | 28.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 147 | RT | Other Reliability Requirement | PGAE | NA | 8/12/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -3.72 | 0.00 | 0.00 | 80.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 148 | RT | Other Reliability Requirement | PGAE | NA | 8/13/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 4.41 | 0.00 | 0.00 | -375.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 149 | RT | Other Reliability Requirement | PGAE | NA | 8/14/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 28.86 | 0.00 | 0.00 | -754.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 150 | RT | Other Reliability Requirement | PGAE | NA | 8/15/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 4.17 | 0.00 | 0.00 | -759.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 151 | RT | Other Reliability Requirement | PGAE | NA | 8/16/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 6.80 | 0.00 | 0.00 | -209.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 152 | RT | Other Reliability Requirement | PGAE | NA | 8/17/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 5.06 | 0.00 | 0.00 | -223.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 153 | RT | Other Reliability Requirement | PGAE | NA | 8/18/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 7.29 | 0.00 | 0.00 | -485.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 154 | RT | Other Reliability Requirement | PGAE | NA | 8/19/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 4.94 | 0.00 | 0.00 | -156.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 155 | RT | Other Reliability Requirement | PGAE | NA | 8/20/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -1.26 | 0.00 | 0.00 | 17.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 156 | RT | Other Reliability Requirement | PGAE | NA | 8/21/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -2.68 | 0.00 | 0.00 | 24.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 157 | RT | Other Reliability Requirement | PGAE | NA | 8/22/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -3.34 | 0.00 | 0.00 | 115.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 158 | RT | Other Reliability Requirement | PGAE | NA | 8/23/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 2.15 | 0.00 | 0.00 | 89.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 159 | RT | Other Reliability Requirement | PGAE | NA | 8/24/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 10.30 | 0.00 | 0.00 | 47.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|-------------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|---------|------------------|------------|------------|--------|--------|--------|
| 160 | RT | Other Reliability Requirement | PGAE | NA | 8/25/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -0.35 | 0.00 | 0.00 | 461.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 161 | RT | Other Reliability Requirement | PGAE | NA | 8/26/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -30.82 | 0.00 | 0.00 | 807.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 162 | RT | Other Reliability Requirement | PGAE | NA | 8/27/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -10.72 | 0.00 | 0.00 | 351.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 163 | RT | Other Reliability Requirement | PGAE | NA | 8/28/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -9.83 | 0.00 | 0.00 | 277.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 164 | RT | Other Reliability Requirement | PGAE | NA | 8/29/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -5.87 | 0.00 | 0.00 | 233.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 165 | RT | Other Reliability Requirement | PGAE | NA | 8/30/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -8.88 | 0.00 | 0.00 | 294.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 166 | RT | Other Reliability Requirement | PGAE | NA | 8/31/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -12.15 | 0.00 | 0.00 | 411.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 167 | RT | Other Reliability Requirement | PGAE | Sierra | 8/3/2019 | 45 | No | INC | 1 | 17:00 | 17:45 | 3.54 | 0.00 | 0.00 | -93.77 | 0.94 | -23.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 168 | RT | Other Reliability Requirement | PGAE | Sierra | 8/24/2019 | 10 | No | INC | 2 | 14:45 | 16:30 | 15.31 | 0.00 | 0.00 | -654.30 | 12.50 | -577.87 | 0.00 | 0.00 | 0.00 | 0.00 |
| 169 | RT | Other Reliability Requirement | SCE | NA | 8/9/2019 | 425 | No | INC | 4 | 19:10 | 23:00 | -23.20 | 19840.68 | 0.00 | 654.00 | -2.93 | 0.00 | 93.00 | 0.00 | 0.00 | 0.00 |
| 170 | RT | Other Reliability Requirement | SCE | NA | 8/10/2019 | 425 | No | INC | 8 | 0:55 | 8:00 | 24.12 | 7795.58 | 0.00 | -638.98 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 171 | RT | Other Reliability Requirement | SCE | NA | 8/17/2019 | 420 | No | DEC | 4 | 18:00 | 22:00 | 0.95 | 0.00 | 0.00 | 100.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 172 | RT | Other Reliability Requirement | SCE | NA | 8/17/2019 | 420 | No | INC | 14 | 7:05 | 21:00 | -7.62 | 12624.06 | 0.00 | 312.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 173 | RT | Planned Transmission Outage | PGAE | Bay Area | 8/5/2019 | 175 | No | INC | 4 | 5:00 | 9:00 | -5.91 | 28074.60 | 13881.27 | 97.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 174 | RT | Planned Transmission Outage | PGAE | Fresno | 8/8/2019 | 20 - 25 | No | DEC | 2 | 15:15 | 16:45 | -18.88 | 0.00 | 0.00 | 345.77 | 0.00 | 0.00 | 0.00 | 0.00 | -30.74 | 0.00 |
| 175 | RT | Planned Transmission Outage | PGAE | Fresno | 8/8/2019 | 30 | No | INC | 1 | 16:20 | 16:30 | 1.23 | 0.00 | 0.00 | -27.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 176 | RT | Planned Transmission Outage | PGAE | Fresno | 8/28/2019 | 140 | No | DEC | 1 | 20:20 | 20:25 | -4.76 | 0.00 | 0.00 | 161.02 | -1.46 | 0.00 | 49.36 | 0.00 | -1.82 | 0.00 |
| 177 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/1/2019 | 15 | No | DEC | 12 | 10:00 | 21:15 | 1.01 | 159.55 | 0.00 | -30.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|-----------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|----------|------------------|------------|------------|--------|----------|--------|
| 178 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/1/2019 | 15 - 56 | No | INC | 24 | 0:00 | 0:00 | 19.06 | -478.65 | 0.00 | -433.41 | -2.06 | -0.26 | 88.36 | 0.00 | -35.45 | 0.00 |
| 179 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/2/2019 | 30 | No | INC | 24 | 0:00 | 0:00 | 42.60 | 8780.61 | 0.00 | -1250.92 | 12.37 | -378.97 | 26.74 | 0.00 | -17.27 | 0.00 |
| 180 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/3/2019 | 15 | No | DEC | 14 | 6:00 | 20:00 | 1.35 | 0.00 | 0.00 | 2.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 181 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/3/2019 | 30 - 45 | No | INC | 24 | 0:00 | 0:00 | 2.13 | 19741.84 | 0.00 | -84.73 | -1.59 | 0.00 | 67.03 | 0.00 | -36.28 | 0.00 |
| 182 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/4/2019 | 16 - 45 | No | DEC | 7 | 15:00 | 22:00 | 1.19 | -2050.10 | 0.00 | -29.08 | -1.44 | 0.00 | 41.69 | 0.00 | -2036.37 | 0.00 |
| 183 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/4/2019 | 14 - 45 | No | INC | 24 | 0:00 | 0:00 | 2.68 | 26322.60 | 0.00 | -105.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 184 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/5/2019 | 14 - 45 | No | DEC | 22 | 0:00 | 22:00 | -1.64 | -5978.81 | 0.00 | 106.66 | -1.87 | 0.00 | 90.72 | 0.00 | -6182.07 | 0.00 |
| 185 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/5/2019 | 30 - 45 | No | INC | 16 | 0:00 | 16:00 | 4.15 | 24860.22 | 0.00 | -124.62 | -0.46 | 0.00 | 14.42 | 0.00 | -5.39 | 0.00 |
| 186 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/6/2019 | 14 | No | DEC | 7 | 16:30 | 23:00 | -10.69 | -11569.49 | 0.00 | 620.74 | -8.46 | 0.00 | 485.86 | 0.00 | 14607.31 | 0.00 |
| 187 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/6/2019 | 14 | No | INC | 1 | 23:00 | 0:00 | -0.88 | 593.47 | 0.00 | 36.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 188 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/7/2019 | 14 | No | DEC | 4 | 16:00 | 20:00 | 0.70 | 0.00 | 0.00 | -27.98 | 0.00 | 0.00 | 0.00 | 0.00 | -64.63 | 0.00 |
| 189 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/7/2019 | 14 - 45 | No | INC | 24 | 0:00 | 0:00 | -4.03 | 15198.77 | 0.00 | 155.91 | -3.55 | 0.00 | 139.58 | 0.00 | -59.10 | 0.00 |
| 190 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/8/2019 | 45 | No | DEC | 3 | 18:00 | 21:00 | -0.92 | 0.00 | 0.00 | 27.80 | -1.91 | 0.00 | 52.50 | 0.00 | -145.21 | 0.00 |
| 191 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/8/2019 | 14 - 45 | No | INC | 24 | 0:00 | 0:00 | 0.18 | 18907.43 | 0.00 | 0.81 | -0.50 | 0.00 | 13.96 | 0.00 | 0.00 | 0.00 |
| 192 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/9/2019 | 14 - 30 | No | DEC | 5 | 17:00 | 22:00 | 2.62 | -1103.80 | 0.00 | -58.30 | -1.46 | 0.00 | 51.14 | 0.00 | -951.86 | 0.00 |
| 193 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/9/2019 | 14 - 64 | No | INC | 24 | 0:00 | 0:00 | 1.60 | 7127.01 | 0.00 | -113.00 | 5.10 | -137.47 | 0.00 | 0.00 | -20.29 | 0.00 |
| 194 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/10/2019 | 15 - 56 | No | INC | 24 | 0:00 | 0:00 | -0.34 | 20970.73 | 0.00 | 30.93 | 1.58 | -54.84 | 29.59 | 0.00 | -21.05 | 0.00 |
| 195 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/11/2019 | 15 - 45 | No | INC | 22 | 0:00 | 21:15 | 2.79 | 12981.84 | 0.00 | -80.32 | 0.00 | 0.00 | 0.00 | 0.00 | -16.61 | 0.00 |

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Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 | |
|--------|-------------|-----------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|---------|------------------|------------|------------|--------|----------|----------|------|
| 196 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/12/2019 | 15 | No | DEC | 9 | 13:00 | 22:00 | 0.61 | -311.34 | 0.00 | -17.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 197 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/12/2019 | 15 - 48 | No | INC | 19 | 5:30 | 0:00 | 15.86 | 10842.05 | 0.00 | -477.20 | -1.18 | 0.00 | 33.28 | 0.00 | -21.78 | 0.00 | |
| 198 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/13/2019 | 32 - 48 | No | DEC | 7 | 15:00 | 22:00 | 13.63 | -8448.13 | 0.00 | -547.06 | -2.11 | 0.00 | 94.89 | 0.00 | -7924.86 | 0.00 | |
| 199 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/13/2019 | 16 - 48 | No | INC | 24 | 0:00 | 0:00 | 3.87 | 19414.89 | 0.00 | -139.11 | -0.94 | 0.00 | 21.45 | 0.00 | -12.19 | 0.00 | |
| 200 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/14/2019 | 16 - 45 | No | DEC | 23 | 0:00 | 23:00 | -8.21 | -19830.30 | 0.00 | 285.05 | -8.20 | 0.00 | 252.41 | 0.00 | - | 15255.44 | 0.00 |
| 201 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/14/2019 | 32 - 48 | No | INC | 24 | 0:00 | 0:00 | -0.89 | 12650.97 | 0.00 | 12.79 | -0.94 | 0.00 | 23.00 | 0.00 | -3.90 | 0.00 | |
| 202 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/15/2019 | 15 - 45 | No | DEC | 22 | 0:15 | 22:00 | -21.41 | -19376.81 | 0.00 | -372.30 | -21.58 | 0.00 | 536.54 | 0.00 | - | 51314.16 | 0.00 |
| 203 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/15/2019 | 32 - 45 | No | INC | 24 | 0:00 | 0:00 | -5.44 | 5066.77 | 0.00 | 174.04 | -0.09 | 0.00 | 3.58 | 0.00 | -0.94 | 0.00 | |
| 204 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/16/2019 | 15 - 45 | No | DEC | 8 | 13:00 | 21:00 | -11.12 | -15358.73 | 0.00 | 454.06 | -9.89 | 0.00 | 403.20 | 0.00 | - | 11664.21 | 0.00 |
| 205 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/16/2019 | 15 - 45 | No | INC | 24 | 0:00 | 0:00 | 1.87 | 11187.65 | 0.00 | -43.69 | -0.93 | 0.00 | 47.50 | 0.00 | -25.91 | 0.00 | |
| 206 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/17/2019 | 16 | No | DEC | 7 | 15:00 | 22:00 | -0.36 | -11074.75 | 0.00 | 5.51 | 0.00 | 0.00 | 0.00 | 0.00 | -7870.65 | 0.00 | |
| 207 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/17/2019 | 0 - 45 | No | INC | 24 | 0:00 | 0:00 | 8.81 | 14237.42 | 0.00 | -209.08 | 3.09 | -201.35 | 138.25 | 0.00 | -133.08 | 0.00 | |
| 208 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/18/2019 | 0 | No | DEC | 2 | 0:40 | 1:45 | 0.00 | -642.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 209 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/18/2019 | 0 - 42 | No | INC | 24 | 0:00 | 0:00 | 3.36 | 10084.91 | 0.00 | -91.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 210 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/19/2019 | 32 | No | DEC | 6 | 16:00 | 22:00 | 1.05 | 0.00 | 0.00 | -24.60 | -0.14 | 0.00 | 4.95 | 0.00 | -89.58 | 0.00 | |
| 211 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/19/2019 | 14 - 32 | No | INC | 24 | 0:00 | 0:00 | -1.47 | 18241.82 | 0.00 | 64.77 | -0.61 | 0.00 | 21.66 | 0.00 | -10.02 | 0.00 | |
| 212 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/20/2019 | 14 | No | DEC | 2 | 22:45 | 0:00 | -1.93 | 0.00 | 0.00 | 48.81 | -0.34 | 0.00 | 8.49 | 0.00 | -6.12 | 0.00 | |
| 213 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/20/2019 | 15 - 48 | No | INC | 24 | 0:00 | 0:00 | 10.79 | 2870.69 | 0.00 | -116.06 | -2.03 | -26.54 | 125.21 | 0.00 | -41.26 | 0.00 | |

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Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 | |
|--------|-------------|-----------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|----------|------------------|------------|------------|---------|----------|----------|------|
| 214 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/21/2019 | 14 - 32 | No | DEC | 6 | 16:00 | 21:30 | 22.62 | -483.42 | 0.00 | -724.86 | -0.57 | 0.00 | 16.75 | 0.00 | -50.26 | 0.00 | |
| 215 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/21/2019 | 14 - 32 | No | INC | 24 | 0:00 | 0:00 | 11.70 | 2194.51 | 0.00 | -342.47 | -0.40 | 0.00 | 14.25 | 0.00 | -9.62 | 0.00 | |
| 216 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/22/2019 | 14 - 32 | No | INC | 24 | 0:00 | 0:00 | 18.65 | 9109.00 | 0.00 | -537.30 | -0.49 | 0.00 | 14.84 | 0.00 | -5.33 | 0.00 | |
| 217 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/23/2019 | 16 | No | DEC | 7 | 15:00 | 22:00 | -1.36 | -6599.23 | 0.00 | 63.44 | 0.00 | 0.00 | 0.00 | 0.00 | -7257.53 | 0.00 | |
| 218 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/23/2019 | 16 - 32 | No | INC | 24 | 0:00 | 0:00 | 1.73 | 3599.58 | 0.00 | -100.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 219 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/24/2019 | 16 - 32 | No | INC | 24 | 0:00 | 0:00 | 2.05 | 8272.88 | 0.00 | -102.71 | 2.00 | -67.83 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 220 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/25/2019 | 15 | No | DEC | 2 | 20:00 | 22:00 | 0.50 | 443.19 | 0.00 | -16.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 221 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/25/2019 | 15 - 32 | No | INC | 24 | 0:00 | 0:00 | 8.74 | 4284.17 | 0.00 | -189.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 222 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/26/2019 | 15 - 60 | No | DEC | 22 | 0:00 | 22:00 | -2.61 | -4824.13 | 0.00 | 109.35 | -3.37 | 0.00 | 125.00 | 0.00 | -5171.65 | 0.00 | |
| 223 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/26/2019 | 32 - 60 | No | INC | 24 | 0:00 | 0:00 | 8.25 | 7829.69 | 0.00 | -295.96 | -2.60 | 0.00 | 87.69 | 0.00 | -20.25 | 0.00 | |
| 224 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/27/2019 | 14 - 42 | No | DEC | 22 | 1:00 | 23:00 | -2.53 | -35636.67 | 0.00 | 88.37 | 0.00 | 0.00 | 0.00 | 0.00 | - | 41607.29 | |
| 225 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/27/2019 | 14 - 42 | No | INC | 24 | 0:00 | 0:00 | -1.67 | 16449.53 | 0.00 | 52.18 | -0.40 | 0.00 | 12.12 | 0.00 | 0.00 | 0.00 | |
| 226 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/28/2019 | 42 | No | INC | 1 | 0:00 | 0:30 | 0.00 | 656.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 227 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/29/2019 | 14 | No | DEC | 5 | 16:00 | 21:00 | 1.33 | 0.00 | 0.00 | -48.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 228 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/29/2019 | 14 - 32 | No | INC | 20 | 4:50 | 0:00 | 1.86 | 11990.91 | 0.00 | -83.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 229 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/30/2019 | 14 - 45 | No | INC | 24 | 0:00 | 0:00 | 3.47 | 16205.91 | 0.00 | -102.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 230 | RT | Planned Transmission Outage | PGAE | Humboldt | 8/31/2019 | 28 | No | INC | 3 | 0:00 | 2:45 | -0.07 | 1528.30 | 0.00 | 1.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 231 | RT | Planned Transmission Outage | PGAE | NA | 8/28/2019 | 4 | No | DEC | 6 | 18:25 | 0:00 | -21.71 | 0.00 | 0.00 | -1750.13 | -21.67 | 0.00 | - | 1750.50 | 0.00 | -137.75 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 2, 2019**

Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|-----------------------------|----------|------------------------|------------|---------------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|--------|----------|--------|
| 232 | RT | Planned Transmission Outage | PGAE | NA | 8/29/2019 | 4 | No | INC | 2 | 0:00 | 2:00 | -0.35 | 0.00 | 0.00 | 7.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 233 | RT | Planned Transmission Outage | PGAE | Sierra | 8/24/2019 | 10 | No | INC | 2 | 14:15 | 16:00 | 20.12 | 0.00 | 0.00 | -781.70 | 17.41 | -707.88 | 0.00 | 0.00 | -5.42 | 0.00 |
| 234 | RT | Planned Transmission Outage | SCE | LA Basin | 8/14/2019 | 35 | No | DEC | 2 | 18:00 | 20:00 | 7.58 | 0.00 | 0.00 | -291.20 | 7.75 | -297.51 | 0.00 | 0.00 | -3740.92 | 0.00 |
| 235 | RT | Planned Transmission Outage | SCE | LA Basin | 8/14/2019 | 30 - 35 | No | INC | 3 | 17:35 | 20:00 | -1.39 | 0.00 | 21.50 | 96.60 | 4.67 | -203.52 | 0.00 | 0.00 | -73.36 | 0.00 |
| 236 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 8/8/2019 | 25 - 39 | No | INC | 9 | 10:30 | 19:00 | 0.20 | 21537.68 | 0.00 | 728.51 | 25.68 | -862.84 | 0.00 | 0.00 | -1431.18 | 0.00 |
| 237 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 8/9/2019 | 36.88 - 38.88 | No | INC | 3 | 16:00 | 18:30 | 58.36 | 2038.22 | 0.00 | -1695.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 238 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 8/10/2019 | 30 | No | INC | 9 | 11:30 | 20:00 | 0.12 | 27927.26 | 889.18 | -9.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 239 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 8/30/2019 | 281 | No | INC | 11 | 0:00 | 11:00 | -178.58 | 132062.13 | 0.00 | -15759.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 240 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 8/31/2019 | 281 - 290 | No | INC | 16 | 0:00 | 15:30 | 386.38 | 272390.71 | 0.00 | -11490.39 | 66.34 | -1742.02 | 0.00 | 0.00 | -277.72 | 0.00 |
| 241 | RT | Software Limitation | PGAE | Bay Area | 8/11/2019 | 0 - 253 | No | INC | 5 | 1:20 | 6:00 | -89.88 | 1794.86 | 0.00 | 2370.76 | -18.07 | 0.00 | 372.88 | 0.00 | 0.00 | 0.00 |
| 242 | RT | Software Limitation | PGAE | Bay Area | 8/15/2019 | 64 | No | INC | 6 | 10:25 | 15:30 | 108.92 | -8224.55 | 0.00 | -3237.34 | 0.10 | -2.88 | 0.00 | 0.00 | 0.00 | 0.00 |
| 243 | RT | Software Limitation | PGAE | Bay Area | 8/19/2019 | 430 | No | DEC | 2 | 15:00 | 17:00 | 20.48 | 0.00 | 0.00 | -739.86 | 50.00 | -1560.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| 244 | RT | Software Limitation | PGAE | Bay Area | 8/19/2019 | 430 | No | INC | 1 | 14:50 | 15:00 | 0.92 | 0.00 | 0.00 | -46.14 | 4.28 | -133.73 | 0.00 | 0.00 | 0.00 | 0.00 |
| 245 | RT | Software Limitation | PGAE | Fresno | 8/19/2019 | 79 | No | INC | 2 | 18:20 | 20:20 | 13.17 | 9604.10 | 0.00 | -526.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 246 | RT | Software Limitation | PGAE | Fresno | 8/28/2019 | 83 | No | DEC | 1 | 15:00 | 16:00 | 12.44 | 0.00 | 0.00 | -397.84 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 247 | RT | Software Limitation | SCE | Big Creek-Ventura | 8/5/2019 | 400.2 | No | INC | 5 | 16:00 | 21:00 | 42.15 | 145689.24 | 0.00 | -2212.37 | 17.06 | -1687.73 | 0.00 | 0.00 | 0.00 | 0.00 |
| 248 | RT | Software Limitation | SCE | Big Creek-Ventura | 8/14/2019 | 199 | No | DEC | 1 | 16:10 | 17:00 | 157.58 | 0.00 | 0.00 | -4913.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 249 | RT | Software Limitation | SCE | Big Creek-Ventura | 8/14/2019 | 200 - 400 | No | INC | 11 | 10:00 | 21:00 | 218.19 | 398664.33 | 0.00 | -21657.26 | 184.86 | -20708.39 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 2, 2019**

Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|---------------------|----------|------------------------|------------|-------------|------------|---------|-------|------------|----------|-----------|---------------|---------------|------------|------------------|------------|------------|----------|--------|--------|
| 250 | RT | Software Limitation | SCE | Big Creek-Ventura | 8/15/2019 | 15 | No | DEC | 1 | 16:25 | 17:10 | 34.41 | 0.00 | 0.00 | -1007.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 251 | RT | Software Limitation | SCE | Big Creek-Ventura | 8/15/2019 | 400.1 - 500 | No | INC | 5 | 16:00 | 21:00 | -46.48 | 271210.52 | 0.00 | -12120.36 | 124.88 | -11978.58 | 0.00 | -3451.73 | 0.00 | 0.00 |
| 252 | RT | Software Limitation | SCE | Big Creek-Ventura | 8/16/2019 | 400.1 | No | INC | 8 | 14:00 | 22:00 | 63.36 | 484138.10 | 0.00 | -4445.28 | 41.67 | -4239.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 253 | RT | Software Limitation | SCE | Big Creek-Ventura | 8/25/2019 | 0 | No | INC | 1 | 2:00 | 3:00 | -35.33 | 1138.26 | 0.00 | 0.00 | -35.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 254 | RT | Software Limitation | SCE | Big Creek-Ventura | 8/26/2019 | 400.1 | No | INC | 4 | 16:00 | 20:00 | 54.99 | 46568.68 | 0.00 | -5490.61 | 47.30 | -5032.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| 255 | RT | Software Limitation | SCE | Big Creek-Ventura | 8/27/2019 | 400.1 | No | INC | 5 | 15:30 | 20:00 | -108.11 | 117924.28 | 0.00 | 4274.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 256 | RT | Software Limitation | SCE | LA Basin | 8/1/2019 | 65 - 245 | No | INC | 7 | 14:00 | 21:00 | -172.13 | 30258.38 | 0.00 | 6636.19 | 38.57 | -3133.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 257 | RT | Software Limitation | SCE | LA Basin | 8/2/2019 | 65 - 495 | No | INC | 8 | 13:00 | 21:00 | 297.41 | 104229.84 | 0.00 | -25787.15 | 255.79 | -19733.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| 258 | RT | Software Limitation | SCE | LA Basin | 8/3/2019 | 65 - 335 | No | INC | 7 | 14:00 | 21:00 | -378.23 | 11394.97 | 0.00 | 40235.98 | 38.85 | -5109.04 | 0.00 | 0.00 | 0.00 | 0.00 |
| 259 | RT | Software Limitation | SCE | LA Basin | 8/4/2019 | 65 - 194 | No | INC | 7 | 14:00 | 21:00 | -225.67 | 4188.65 | 0.00 | 5844.55 | 3.19 | -409.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| 260 | RT | Software Limitation | SCE | LA Basin | 8/5/2019 | 240.2 | No | DEC | 4 | 16:00 | 20:00 | -81.60 | 0.00 | 0.00 | 4647.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 261 | RT | Software Limitation | SCE | LA Basin | 8/5/2019 | 10 - 240.2 | No | INC | 10 | 14:30 | 0:00 | 24.32 | 5110.06 | 0.00 | -1299.98 | 0.11 | -7.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| 262 | RT | Software Limitation | SCE | LA Basin | 8/6/2019 | 190 - 240.2 | No | INC | 9 | 13:00 | 22:00 | 10.82 | 60416.82 | 0.00 | -720.40 | 46.71 | -2465.67 | 0.00 | 0.00 | 0.00 | 0.00 |
| 263 | RT | Software Limitation | SCE | LA Basin | 8/7/2019 | 65 - 240.2 | No | INC | 8 | 13:00 | 21:00 | 574.59 | 68461.12 | 0.00 | -188389.66 | 13.27 | -1391.24 | 0.00 | 0.00 | 0.00 | 0.00 |
| 264 | RT | Software Limitation | SCE | LA Basin | 8/8/2019 | 65 - 240 | No | INC | 9 | 13:45 | 22:00 | 48.27 | 90413.99 | 0.00 | -7890.59 | 86.56 | -9233.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 265 | RT | Software Limitation | SCE | LA Basin | 8/9/2019 | 65 - 194 | No | INC | 7 | 14:00 | 21:00 | 30.35 | 13956.44 | 0.00 | -4892.47 | 41.11 | -5349.59 | 0.00 | 0.00 | 0.00 | 0.00 |
| 266 | RT | Software Limitation | SCE | LA Basin | 8/11/2019 | 194 | No | INC | 6 | 15:00 | 21:00 | -30.59 | 0.00 | 0.00 | 665.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 267 | RT | Software Limitation | SCE | LA Basin | 8/12/2019 | 10 - 240 | No | INC | 9 | 15:35 | 0:00 | 69.65 | 13213.18 | 14268.03 | -7067.09 | 63.41 | -6856.79 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
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Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|---------------------|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|------------|------------------|------------|------------|-----------|--------|--------|
| 268 | RT | Software Limitation | SCE | LA Basin | 8/13/2019 | 0 - 10 | No | DEC | 24 | 0:00 | 0:00 | 8.83 | 0.00 | 0.00 | -291.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 269 | RT | Software Limitation | SCE | LA Basin | 8/13/2019 | 10 - 240 | No | INC | 21 | 3:00 | 0:00 | 489.11 | 126902.33 | 0.00 | -37414.38 | 100.49 | -6847.17 | 0.00 | -90686.49 | 0.00 | 0.00 |
| 270 | RT | Software Limitation | SCE | LA Basin | 8/14/2019 | 240 | No | DEC | 4 | 17:00 | 21:00 | -89.09 | -29925.36 | 0.00 | 4830.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 271 | RT | Software Limitation | SCE | LA Basin | 8/14/2019 | 10 - 240 | No | INC | 22 | 0:00 | 22:00 | 1.98 | 55315.18 | 0.00 | 2379.57 | 15.62 | -1710.31 | 0.00 | 0.00 | 0.00 | 0.00 |
| 272 | RT | Software Limitation | SCE | LA Basin | 8/15/2019 | 65 - 340 | No | INC | 8 | 14:00 | 22:00 | 476.04 | 55707.29 | 0.00 | -158636.20 | 200.26 | -17329.20 | 0.00 | 0.00 | 0.00 | 0.00 |
| 273 | RT | Software Limitation | SCE | LA Basin | 8/16/2019 | 0 - 240 | No | INC | 22 | 0:10 | 22:00 | 372.80 | 77478.70 | 0.00 | -31735.66 | 383.03 | -32104.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| 274 | RT | Software Limitation | SCE | LA Basin | 8/18/2019 | 0 | No | INC | 1 | 0:00 | 0:30 | -1.25 | 0.00 | 0.00 | 0.00 | -1.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 275 | RT | Software Limitation | SCE | LA Basin | 8/19/2019 | 190 - 194 | No | INC | 5 | 16:00 | 21:00 | 1.53 | 0.00 | 0.00 | -526.58 | 6.65 | -826.58 | 0.00 | 0.00 | 0.00 | 0.00 |
| 276 | RT | Software Limitation | SCE | LA Basin | 8/20/2019 | 190 - 194 | No | INC | 7 | 14:45 | 21:00 | -17.20 | 0.00 | 0.00 | -3831.75 | 57.67 | -7346.80 | 0.00 | 0.00 | 0.00 | 0.00 |
| 277 | RT | Software Limitation | SCE | LA Basin | 8/21/2019 | 41 | No | DEC | 1 | 17:55 | 18:00 | 2.55 | 0.00 | 0.00 | -152.19 | 0.67 | -42.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| 278 | RT | Software Limitation | SCE | LA Basin | 8/21/2019 | 41 - 240 | No | INC | 7 | 14:50 | 21:15 | 37.03 | 64938.98 | 0.00 | -6149.93 | 190.28 | -16987.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| 279 | RT | Software Limitation | SCE | LA Basin | 8/22/2019 | 190 - 194 | No | INC | 2 | 18:25 | 20:00 | -12.19 | 0.00 | 0.00 | -1860.18 | 29.36 | -3497.32 | 0.00 | 0.00 | 0.00 | 0.00 |
| 280 | RT | Software Limitation | SCE | LA Basin | 8/23/2019 | 190 | No | INC | 6 | 15:00 | 21:00 | 0.84 | 0.00 | 0.00 | -2411.34 | 4.71 | -564.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| 281 | RT | Software Limitation | SCE | LA Basin | 8/24/2019 | 65 - 190 | No | INC | 3 | 17:00 | 19:30 | -109.18 | 5671.94 | 0.00 | 6658.09 | 10.71 | -1342.37 | 0.00 | 0.00 | 0.00 | 0.00 |
| 282 | RT | Software Limitation | SCE | LA Basin | 8/25/2019 | 65 - 194 | No | INC | 6 | 15:45 | 21:00 | 56.16 | 9913.89 | 0.00 | -38424.61 | 23.27 | -2604.91 | 0.00 | 0.00 | 0.00 | 0.00 |
| 283 | RT | Software Limitation | SCE | LA Basin | 8/26/2019 | 0 - 65 | No | DEC | 9 | 15:00 | 0:00 | -17.77 | 0.00 | 0.00 | 802.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 284 | RT | Software Limitation | SCE | LA Basin | 8/26/2019 | 0 - 497 | No | INC | 24 | 0:00 | 0:00 | 531.22 | 77128.02 | 0.00 | -39890.44 | 529.41 | -40629.99 | 1.01 | 0.00 | 0.00 | 0.00 |
| 285 | RT | Software Limitation | SCE | LA Basin | 8/27/2019 | 0 - 240 | No | DEC | 20 | 0:00 | 20:00 | -40.24 | -29567.70 | 0.00 | 1460.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
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Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|---------------------|----------|------------------------|------------|------------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|--------|--------|--------|
| 286 | RT | Software Limitation | SCE | LA Basin | 8/27/2019 | 0 - 240 | No | INC | 24 | 0:00 | 0:00 | -344.34 | 32643.52 | 0.00 | 17566.96 | 22.27 | -1494.43 | 0.00 | 0.00 | 0.00 | 0.00 |
| 287 | RT | Software Limitation | SCE | LA Basin | 8/28/2019 | 147 | No | DEC | 1 | 6:00 | 7:00 | 91.38 | 0.00 | 0.00 | -3266.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 288 | RT | Software Limitation | SCE | LA Basin | 8/28/2019 | 10 - 240 | No | INC | 24 | 0:00 | 0:00 | 50.26 | 247284.96 | 0.00 | -6554.22 | 83.11 | -5285.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| 289 | RT | Software Limitation | SCE | LA Basin | 8/29/2019 | 65 - 240 | No | INC | 5 | 15:30 | 20:00 | 105.19 | 55767.92 | 0.00 | -7745.93 | 130.52 | -8549.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| 290 | RT | Software Limitation | SCE | LA Basin | 8/30/2019 | 65 - 241 | No | INC | 8 | 14:25 | 22:00 | 418.56 | 107824.00 | 0.00 | -25543.79 | 437.24 | -25322.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| 291 | RT | Software Limitation | SCE | LA Basin | 8/31/2019 | 190 - 241 | No | INC | 7 | 14:05 | 20:30 | 87.22 | 66776.83 | 0.00 | -4529.00 | 108.03 | -5807.18 | 0.00 | 0.00 | 0.00 | 0.00 |
| 292 | RT | Software Limitation | SCE | NA | 8/21/2019 | 241 - 400 | No | DEC | 3 | 16:00 | 18:45 | 22.18 | -622.59 | 0.00 | -17163.11 | 14.50 | -13642.34 | 0.00 | 0.00 | 0.00 | 0.00 |
| 293 | RT | Software Limitation | SCE | NA | 8/21/2019 | 241 | No | INC | 3 | 13:00 | 16:00 | 139.03 | 6122.77 | 0.00 | -5113.95 | 5.26 | -151.78 | 0.00 | 0.00 | 0.00 | 0.00 |
| 294 | RT | Software Limitation | SDGE | San Diego-IV | 8/9/2019 | 0 | No | INC | 1 | 15:30 | 16:30 | -7.50 | 0.00 | 0.00 | 0.00 | -7.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 295 | RT | SOL | PGAE | NA | 8/7/2019 | 32 | No | INC | 1 | 18:30 | 19:15 | -0.42 | 1195.96 | 731.99 | 15.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 296 | RT | Unit Testing | PGAE | Bay Area | 8/1/2019 | 148.33 | No | INC | 1 | 16:00 | 17:00 | 18.68 | 9629.64 | 2895.13 | -511.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 297 | RT | Unit Testing | PGAE | Bay Area | 8/7/2019 | 144 | No | INC | 11 | 13:45 | 0:00 | 331.43 | 0.00 | 0.00 | -12753.05 | 88.31 | -3246.90 | 0.00 | 0.00 | 0.00 | 0.00 |
| 298 | RT | Unit Testing | PGAE | Bay Area | 8/8/2019 | 0 - 150 | Yes | INC | 20 | 0:00 | 19:45 | 175.63 | 7417.94 | 0.00 | -5869.30 | -23.20 | -1394.37 | 0.00 | 0.00 | 0.00 | 0.00 |
| 299 | RT | Unit Testing | PGAE | Bay Area | 8/20/2019 | 23.6 - 198 | No | INC | 1 | 8:30 | 9:00 | 79.05 | 0.00 | 0.00 | -1359.26 | 65.74 | -1141.26 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300 | RT | Unit Testing | PGAE | NA | 8/15/2019 | 99 | No | DEC | 5 | 12:00 | 17:00 | -29.47 | -41648.29 | 0.00 | 988.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 301 | RT | Unit Testing | PGAE | NA | 8/15/2019 | 99 | No | INC | 4 | 8:10 | 12:00 | 53.17 | 0.00 | 0.00 | -1053.42 | 13.06 | -316.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| 302 | RT | Unit Testing | PGAE | Stockton | 8/13/2019 | 266 - 275 | No | INC | 11 | 8:00 | 18:45 | 77.53 | -33875.60 | 1151.90 | -3150.84 | 46.42 | -1221.28 | 0.00 | 0.00 | 0.00 | 0.00 |
| 303 | RT | Unit Testing | PGAE | Stockton | 8/14/2019 | 230 | No | DEC | 9 | 11:00 | 20:00 | 6.95 | -16365.77 | 0.00 | -140.23 | 9.72 | -266.85 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
December 2, 2019**

Chart 2: Table of Exceptional Dispatches for Period 01/August/2019 - 31/August/2019

| 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 |
|--------|-------------|-----------------|----------|------------------------|------------|------|------------|---------|-------|------------|----------|-----------|---------------|---------------|---------|------------------|------------|------------|--------|--------|--------|
| 304 | RT | Unit Testing | PGAE | Stockton | 8/14/2019 | 230 | No | INC | 1 | 10:35 | 11:00 | 4.33 | 0.00 | 0.00 | -120.03 | 5.49 | -166.78 | 16.01 | 0.00 | 0.00 | 0.00 |
| 305 | RT | Unit Testing | SCE | Big Creek-Ventura | 8/6/2019 | 70 | No | INC | 1 | 16:40 | 17:10 | 2.50 | 0.00 | 0.00 | -114.51 | 0.83 | -41.53 | 0.00 | 0.00 | 0.00 | 0.00 |
| 306 | RT | Unit Testing | SCE | LA Basin | 8/6/2019 | 22 | No | INC | 1 | 20:00 | 20:35 | 2.55 | 0.00 | 0.00 | -132.27 | 0.69 | -49.78 | 0.00 | 0.00 | 0.00 | 0.00 |
| 307 | RT | Unit Testing | SCE | LA Basin | 8/7/2019 | 10 | No | INC | 1 | 11:55 | 12:25 | 3.33 | 0.00 | 0.00 | -180.16 | 3.29 | -178.80 | 0.00 | 0.00 | 0.00 | 0.00 |
| 308 | RT | Unit Testing | SCE | LA Basin | 8/13/2019 | 22 | No | INC | 1 | 20:50 | 21:30 | 5.72 | 0.00 | 0.00 | -274.07 | 1.47 | -102.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 309 | RT | Unit Testing | SCE | LA Basin | 8/20/2019 | 22 | No | INC | 1 | 12:15 | 13:00 | 13.75 | 0.00 | 0.00 | -683.93 | 13.75 | -683.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| 310 | RT | Unit Testing | SCE | LA Basin | 8/21/2019 | 10 | No | INC | 1 | 6:45 | 7:30 | 3.92 | 0.00 | 0.00 | -246.79 | 4.12 | -251.67 | 0.00 | 0.00 | 0.00 | 0.00 |
| 311 | RT | Voltage Support | PGAE | Fresno | 8/18/2019 | -315 | No | DEC | 1 | 13:20 | 14:15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Appendix A: Explanation by Example

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

Example 1: Exceptional Dispatch Instructions Prior to DAM

In this fictitious example, the CAISO issued an exceptional dispatch instruction for resource A to be committed at its Pmin of 50 MW from hours ending 5 through 10 for a generation procedure 7630. Similarly, the CAISO issued additional instructions to resources B and C for the same reason in Table 2. Exceptional dispatches prior to the day-ahead market are commitments to minimum load. Here the dispatch levels are all at minimum load. Table 2 below also shows the commitment costs and the total volume (MWh) of exceptional dispatch instruction for each resource. The minimum load costs and start up costs, shown in Table 2 are the eligible minimum load and start up costs different from the bid-in minimum load and start up costs⁷. Only those quantities which relate to pre-day-ahead unit commitments are shown in this table.

Table 2: Instructions Prior to Day-Ahead Market

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

This data is summarized as shown in Table 3, which is the prescribed format specified in the FERC order on September 02, 2009. This summary classifies the data by reason, resource location, local reliability area, and trade date. The MW column in Table 3 is the range of MW; in this case the minimum instruction MW is 20 MW for resource C which occurs from hours ending 21 through 23. The maximum instruction occurs in hour ending 10. In this hour resource A is committed at 50 MW, resource B is committed at 30 MW and resource C is committed at 20 MW. This adds up to 100 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. Commitments are broken out separately from energy dispatches. In the day-ahead however, the exceptional dispatches are nearly always just commitments, as in this example. The Begin Time column shows hour ending 5 as this was the hour ending for first dispatch of the day, and the End Time column shows hour ending 23, as this was the hour with last dispatch. It is also possible there might be hours between the begin time and the end time where there might not be exceptional dispatch instructions for the reason, meaning that the range between the begin time and end time can include null hours with no dispatch. The total volume (MWh) is the MWh quantity for each resource, which adds up to 990 MWh. Similarly, all cost information is sum of individual resource costs. Some resources bid-in zero start-up cost; as seen in this example, resource A bid in zero for its start up cost. Since the CAISO does not explicitly pay a resource for bid-in minimum load costs and start-up costs; these costs are recovered through the charge code CC6620 (Bid Cost Recovery), this table shows the summary of CC6620 for the classification. Here, it is the CC6620 for all three resources which adds up to \$5000. This column shows the impact of exceptional dispatch on bid cost recovery for all pre-day-ahead exceptional dispatch commitments.

Table 3: FERC Summary of Instructions Prior to DAM

| Number | Market Type | Reason | Location | Local Reliability Area (LRA) | Trade Date | MW | Commitment | INC/DEC | Hour | Begin Time | End Time | Total Volume (MWh) | Min-Load Cost | Start-Up Cost | CC6620 |
|--------|-------------|--------|----------|------------------------------|------------|--------|------------|---------|------|------------|----------|--------------------|---------------|---------------|--------|
| 1 | DA | 7630 | SCE | LA Basin | 1-Jul-09 | 20-100 | Yes | N/A | 19 | 05:00 | 23:00 | 990 | \$11,400 | \$1,500 | \$5000 |

Example 2: Incremental Exceptional Dispatch Instructions in RTM

In this fictitious example the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 30 MW from hours 6:00 through 11:00 after completion of the day-ahead market for the transmission procedure 7110. This resource had no day-ahead award in those hours. The CAISO issued another exceptional dispatch instruction to resource B, to be dispatched at 40 MW from hours 7:00

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

through 9:00 in real-time for the transmission procedure 7110. This resource had a day-ahead schedule of 20 MW from the day-ahead market, which implies this exceptional dispatch instruction was an incremental instruction and the exceptional dispatch MW was 20 MW. Similarly, the details of exceptional dispatch (ED) instruction for resource C are shown in Table 4. This table also shows volume (MWh) and various real-time charge codes associated with the exceptional dispatch instructions. The total MWh column for each resource shows all types of imbalance energy quantities for this resource between the begin time and end time which includes both the exceptional dispatch energy quantities and optimal energy quantities.

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

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

Table 4: Incremental Exceptional Dispatch Instructions in RTM

| Date | Market | Resource | Location | Local Reliability Area (LRA) | Begin Time | End Time | Dispatch level (MW) | Day-Ahead Award (MW) | Commitment | INC/DEC | ED (MW) | Reason | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 |
|----------|--------|----------|----------|------------------------------|------------|----------|---------------------|----------------------|------------|---------|---------|--------|-----------|---------------|---------------|--------|------------------|------------|------------|--------|--------|
| 1-Jul-09 | RT | A | PG&E | Humboldt | 6:00 | 11:00 | 30 | 0 | Yes | INC | 30 | 7110 | 180 | 1000 | 50 | 1800 | 0 | 0 | 0 | 0 | 0 |
| 1-Jul-09 | RT | B | PG&E | Humboldt | 7:00 | 9:00 | 40 | 20 | No | INC | 20 | 7110 | 60 | 0 | 0 | 600 | 60 | 600 | 0 | 0 | 5400 |
| 1-Jul-09 | RT | C | PG&E | Humboldt | 12:00 | 15:00 | 50 | 50 | No | INC | 0 | 7110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1-Jul-09 | RT | C | PG&E | Humboldt | 16:00 | 20:00 | 50 | 40 | No | INC | 10 | 7110 | 50 | 0 | 0 | 300 | 20 | 300 | 0 | 0 | 200 |

This data is summarized as shown in Table 5 and is classified by reason, resource location, local reliability area, and trade date. The MW column in Table 5 is the range of MW; in this case the minimum instruction MW is 0 MW for resource C which occurs from hours ending 13 through 15. The maximum instruction occurs in hours ending 8 & 9, as during these two hours both resources A and B have an ED MW of 30MW and 20MW, respectively. This adds up to 50 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. This column shows a commitment if there was a single commitment in the entire interval of exceptional dispatch. The Begin Time column shows the time of the first dispatch of the day. This is a time not a range. Similarly, the End Time column shows a time and not a range. Exceptional dispatches occurred between these two times. Since there was a commitment between the begin time and end time, the Commitment column displays yes for the summary. Similarly, the INC/DEC column shows an INC, as there was an incremental dispatch between the begin time and end time. As mentioned in the previous example, it is possible there might be hours between the begin time and end time where there were no exceptional dispatch instructions for the reason. Both volume and cost information columns are the summation for all the respective columns for resources A, B and C. For instance, the Total volume (MWh) column is calculated as summation of 180,60,0 and 50, which are the individual volumes (MWh) for resources A, B and C for time periods shown in Table 4.

Table 5: FERC Summary of ED Instructions in RTM

| Number | Market Type | Reason | Location | Local Reliability Area (LRA) | Trade Date | MW | Commitment | INC/DEC | Hour | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 |
|--------|-------------|--------|----------|------------------------------|------------|------|------------|---------|------|------------|----------|-----------|---------------|---------------|--------|------------------|------------|------------|--------|--------|
| 1 | RT | 7110 | PG&E | Humboldt | 1-Jul-09 | 0-50 | Yes | INC | 15 | 6:00 | 20:00 | 290 | 1000 | 50 | 1700 | 140 | 1500 | 0 | 0 | 11000 |

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

Example 3: Decremental Exceptional Dispatch Instructions in RTM

This example highlights decremental exceptional dispatch instructions in the real-time market. In this fictitious example, the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 20 MW from hours ending 15 through 20 after completion of the day-ahead market for the transmission procedure 7430. The CAISO issued additional exceptional dispatch instructions for resources B and C; details of those instructions are shown in Table 6. This table also includes volume (MWh) and cost information.

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

Table 6: Decremental Exceptional Dispatch Instructions in RTM

| Date | Market Type | Resource | Location | Local Reliability Area (LRA) | Begin Time | End Time | Dispatch level (MW) | Day-Ahead Award (MW) | Commitment | INC/DEC | ED (MW) | Reason | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 |
|----------|-------------|----------|----------|------------------------------|------------|----------|---------------------|----------------------|------------|---------|---------|--------|-----------|---------------|---------------|--------|------------------|------------|------------|--------|---------|
| 1-Jul-09 | RT | A | PG&E | Fresno | 15:00 | 20:00 | 20 | 0 | Yes | INC | 20 | 7430 | 120 | \$ 120 | \$ 100 | \$ - | 0 | \$ - | \$ - | \$ - | \$ - |
| 1-Jul-09 | RT | B | PG&E | Fresno | 7:00 | 9:00 | 40 | 60 | No | DEC | 20 | 7430 | (60) | \$ - | \$ - | \$ 600 | -60 | \$ - | \$ 600 | \$ - | \$2,400 |
| 1-Jul-09 | RT | C | PG&E | Fresno | 10:00 | 14:00 | 40 | 50 | No | DEC | 10 | 7430 | (50) | \$ - | \$ - | \$ 500 | -50 | \$ - | \$ 500 | \$ - | \$2,000 |

This data is summarized according to FERC convention in Table 7. This summary classifies the data by reason, resource location, local reliability area, and trade date. Incs and decs are broken out separately. The inc entry is self-explanatory and similar to the previous example. Regarding the dec entry the MW column is the range of MW; in this case the minimum dec instruction is 10 MW (actually -10MW as it is a dec) for resource C which occurs from hours ending 10 through 14. The maximum instruction occurs from hours ending 7 through 9, when resource B was issued a dec instruction of 20 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. The volume and cost information are summarized by INC and DEC classification.

Table 7: FERC Summary of Decremental ED Instructions in RTM

| Number | Market Type | Reason | Location | Local Reliability Area (LRA) | Trade Date | MW | Commitment | INC/DEC | Hour | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 |
|--------|-------------|--------|----------|------------------------------|------------|-------|------------|---------|------|------------|----------|-----------|---------------|---------------|------------|------------------|------------|------------|--------|------------|
| 1 | RT | 7430 | PG&E | Fresno | 1-Jul-09 | 20 | Yes | INC | 6 | 15:00 | 20:00 | 120 | \$ 120 | \$ 100 | \$ - | 0 | \$ - | \$ - | \$ - | \$ - |
| 2 | RT | 7430 | PG&E | Fresno | 1-Jul-09 | 10-20 | Yes | DEC | 8 | 7:00 | 14:00 | (110) | \$ - | \$ - | \$ (1,100) | \$ (110) | \$ - | \$ (1,100) | \$ - | \$ (4,400) |

Appendix B: Price Impact Analysis

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

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

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

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

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

Table 8 shows the price impact analysis information for node A, which is in the PGAE area. This table shows all the five minute intervals in which the resource at PNode A was issued an exceptional dispatch instruction and was eligible to set the price. Out of the 8,928 five-minute intervals in August, this resource was issued exceptional dispatch instructions in 331 five-minute intervals. This resource was eligible to set the LMP in 79 intervals. Out of the 79 intervals, resource calculated LMP was larger than the market LMP in 0 intervals. Out of the 79 intervals, resource calculated LMP was less than the market LMP in 79 intervals. In the 79 intervals, the average decrease in five minute LMP was \$13.56/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 \$13.56/MWh

Table 9 shows the price impact analysis information for node B, which is in the SCE area. This table shows all the five minute intervals in which the resource at PNode B was issued an exceptional dispatch instruction and was eligible to set the price. Out of the 8,928 five-minute intervals in August, this resource was issued exceptional dispatch instructions in 668 five-minute intervals. This resource was eligible to set the LMP in 247 intervals. Out of the 247 intervals, resource calculated LMP was larger than the market LMP in 219 intervals. In the 219 intervals, the average increase in five minute LMP was \$29.76/MWh. Out of the 247 intervals, resource calculated LMP was less than the market LMP in 28 intervals. In the 28 intervals, the average decrease in five minute LMP was \$209.29/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 increase of \$2.66/MWh.

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

| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 1 | 8/31/2019 | 16 | 6 | 44.45 | Yes | 30.53 | -13.92 |
| 2 | 8/31/2019 | 16 | 7 | 38.40 | Yes | 30.53 | -7.87 |
| 3 | 8/31/2019 | 16 | 8 | 45.05 | Yes | 30.53 | -14.52 |
| 4 | 8/31/2019 | 16 | 9 | 51.10 | Yes | 30.53 | -20.57 |
| 5 | 8/31/2019 | 16 | 10 | 53.42 | Yes | 30.53 | -22.89 |
| 6 | 8/31/2019 | 16 | 11 | 52.56 | Yes | 30.53 | -22.03 |
| 7 | 8/31/2019 | 16 | 12 | 52.91 | Yes | 30.53 | -22.38 |
| 8 | 8/31/2019 | 17 | 1 | 39.32 | Yes | 30.53 | -8.79 |
| 9 | 8/31/2019 | 17 | 2 | 36.26 | Yes | 30.53 | -5.73 |
| 10 | 8/31/2019 | 17 | 3 | 34.27 | Yes | 30.53 | -3.74 |
| 11 | 8/31/2019 | 17 | 4 | 35.27 | Yes | 30.53 | -4.74 |
| 12 | 8/31/2019 | 17 | 5 | 34.92 | Yes | 30.53 | -4.39 |
| 13 | 8/31/2019 | 17 | 6 | 37.09 | Yes | 30.53 | -6.56 |
| 14 | 8/31/2019 | 17 | 7 | 37.11 | Yes | 30.53 | -6.58 |
| 15 | 8/31/2019 | 17 | 8 | 44.07 | Yes | 30.53 | -13.54 |
| 16 | 8/31/2019 | 17 | 9 | 51.88 | Yes | 30.53 | -21.35 |
| 17 | 8/31/2019 | 17 | 10 | 52.13 | Yes | 30.53 | -21.60 |
| 18 | 8/31/2019 | 17 | 11 | 52.26 | Yes | 30.53 | -21.73 |
| 19 | 8/31/2019 | 17 | 12 | 52.26 | Yes | 30.53 | -21.73 |
| 20 | 8/31/2019 | 18 | 1 | 33.86 | Yes | 30.53 | -3.33 |
| 21 | 8/31/2019 | 18 | 2 | 34.07 | Yes | 30.53 | -3.54 |
| 22 | 8/31/2019 | 18 | 3 | 35.47 | Yes | 30.53 | -4.94 |
| 23 | 8/31/2019 | 18 | 4 | 37.81 | Yes | 30.53 | -7.28 |
| 24 | 8/31/2019 | 18 | 5 | 41.93 | Yes | 30.53 | -11.40 |
| 25 | 8/31/2019 | 18 | 6 | 51.26 | Yes | 30.53 | -20.73 |
| 26 | 8/31/2019 | 18 | 7 | 48.51 | Yes | 30.53 | -17.98 |
| 27 | 8/31/2019 | 18 | 8 | 58.28 | Yes | 30.53 | -27.75 |
| 28 | 8/31/2019 | 18 | 9 | 60.15 | Yes | 30.53 | -29.62 |
| 29 | 8/31/2019 | 18 | 10 | 61.01 | Yes | 30.53 | -30.48 |
| 30 | 8/31/2019 | 18 | 11 | 60.75 | Yes | 30.53 | -30.22 |
| 31 | 8/31/2019 | 18 | 12 | 61.01 | Yes | 30.53 | -30.48 |
| 32 | 8/31/2019 | 19 | 1 | 38.14 | Yes | 30.53 | -7.61 |
| 33 | 8/31/2019 | 19 | 2 | 36.47 | Yes | 30.53 | -5.94 |
| 34 | 8/31/2019 | 19 | 3 | 39.80 | Yes | 30.53 | -9.27 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 35 | 8/31/2019 | 19 | 4 | 48.19 | Yes | 30.53 | -17.66 |
| 36 | 8/31/2019 | 19 | 5 | 59.80 | Yes | 30.53 | -29.27 |
| 37 | 8/31/2019 | 19 | 6 | 69.95 | Yes | 30.53 | -39.42 |
| 38 | 8/31/2019 | 19 | 7 | 64.38 | Yes | 30.53 | -33.85 |
| 39 | 8/31/2019 | 19 | 8 | 60.84 | Yes | 30.53 | -30.31 |
| 40 | 8/31/2019 | 19 | 9 | 63.53 | Yes | 30.53 | -33.00 |
| 41 | 8/31/2019 | 19 | 10 | 65.57 | Yes | 30.53 | -35.04 |
| 42 | 8/31/2019 | 19 | 11 | 65.53 | Yes | 30.53 | -35.00 |
| 43 | 8/31/2019 | 19 | 12 | 56.78 | Yes | 30.53 | -26.25 |
| 44 | 8/31/2019 | 20 | 1 | 56.87 | Yes | 30.53 | -26.34 |
| 45 | 8/31/2019 | 20 | 2 | 45.77 | Yes | 30.53 | -15.24 |
| 46 | 8/31/2019 | 20 | 3 | 45.16 | Yes | 30.53 | -14.63 |
| 47 | 8/31/2019 | 20 | 4 | 45.17 | Yes | 30.53 | -14.64 |
| 48 | 8/31/2019 | 20 | 5 | 38.20 | Yes | 30.53 | -7.67 |
| 49 | 8/31/2019 | 20 | 6 | 39.71 | Yes | 30.53 | -9.18 |
| 50 | 8/31/2019 | 20 | 7 | 40.42 | Yes | 30.53 | -9.89 |
| 51 | 8/31/2019 | 20 | 8 | 37.40 | Yes | 30.53 | -6.87 |
| 52 | 8/31/2019 | 20 | 9 | 35.27 | Yes | 30.53 | -4.74 |
| 53 | 8/31/2019 | 20 | 10 | 37.43 | Yes | 30.53 | -6.90 |
| 54 | 8/31/2019 | 20 | 11 | 34.61 | Yes | 30.53 | -4.08 |
| 55 | 8/31/2019 | 20 | 12 | 34.61 | Yes | 30.53 | -4.08 |
| 56 | 8/31/2019 | 21 | 1 | 37.54 | Yes | 30.53 | -7.01 |
| 57 | 8/31/2019 | 21 | 2 | 36.14 | Yes | 30.53 | -5.61 |
| 58 | 8/31/2019 | 21 | 3 | 41.27 | Yes | 30.53 | -10.74 |
| 59 | 8/31/2019 | 21 | 4 | 38.13 | Yes | 30.53 | -7.60 |
| 60 | 8/31/2019 | 21 | 5 | 35.25 | Yes | 30.53 | -4.72 |
| 61 | 8/31/2019 | 21 | 6 | 35.25 | Yes | 30.53 | -4.72 |
| 62 | 8/31/2019 | 21 | 7 | 35.00 | Yes | 30.53 | -4.47 |
| 63 | 8/31/2019 | 21 | 8 | 33.80 | Yes | 30.53 | -3.27 |
| 64 | 8/31/2019 | 21 | 9 | 32.25 | Yes | 30.53 | -1.72 |
| 65 | 8/31/2019 | 21 | 10 | 31.58 | Yes | 30.53 | -1.05 |
| 66 | 8/31/2019 | 21 | 11 | 32.20 | Yes | 30.53 | -1.67 |
| 67 | 8/31/2019 | 21 | 12 | 33.22 | Yes | 30.53 | -2.69 |
| 68 | 8/31/2019 | 22 | 1 | 43.21 | Yes | 30.53 | -12.68 |
| 69 | 8/31/2019 | 22 | 2 | 44.80 | Yes | 30.53 | -14.27 |
| 70 | 8/31/2019 | 22 | 3 | 45.08 | Yes | 30.53 | -14.55 |
| 71 | 8/31/2019 | 22 | 4 | 44.62 | Yes | 30.53 | -14.09 |
| 72 | 8/31/2019 | 22 | 5 | 44.33 | Yes | 30.53 | -13.80 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 73 | 8/31/2019 | 22 | 6 | 44.01 | Yes | 30.53 | -13.48 |
| 74 | 8/31/2019 | 22 | 7 | 38.85 | Yes | 30.53 | -8.32 |
| 75 | 8/31/2019 | 22 | 8 | 37.29 | Yes | 30.53 | -6.76 |
| 76 | 8/31/2019 | 22 | 9 | 34.08 | Yes | 30.53 | -3.55 |
| 77 | 8/31/2019 | 22 | 10 | 32.95 | Yes | 30.53 | -2.42 |
| 78 | 8/31/2019 | 22 | 11 | 32.21 | Yes | 30.53 | -1.68 |
| 79 | 8/31/2019 | 22 | 12 | 31.54 | Yes | 30.53 | -1.01 |

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 | 8/14/2019 | 19 | 1 | 34.51 | Yes | 61.06 | 26.55 |
| 2 | 8/14/2019 | 19 | 2 | 35.23 | Yes | 61.06 | 25.83 |
| 3 | 8/14/2019 | 19 | 3 | 35.41 | Yes | 61.06 | 25.65 |
| 4 | 8/14/2019 | 19 | 4 | 39.26 | Yes | 61.06 | 21.80 |
| 5 | 8/14/2019 | 19 | 5 | 41.58 | Yes | 61.06 | 19.48 |
| 6 | 8/14/2019 | 19 | 6 | 45.00 | Yes | 61.06 | 16.06 |
| 7 | 8/14/2019 | 19 | 7 | 47.37 | Yes | 61.06 | 13.69 |
| 8 | 8/14/2019 | 19 | 8 | 53.23 | Yes | 61.06 | 7.83 |
| 9 | 8/14/2019 | 19 | 9 | 63.99 | Yes | 61.06 | -2.93 |
| 10 | 8/14/2019 | 19 | 10 | 148.35 | Yes | 61.06 | -87.29 |
| 11 | 8/14/2019 | 19 | 11 | 428.65 | Yes | 61.06 | -367.59 |
| 12 | 8/14/2019 | 19 | 12 | 130.48 | Yes | 61.06 | -69.42 |
| 13 | 8/14/2019 | 20 | 1 | 126.54 | Yes | 61.06 | -65.48 |
| 14 | 8/14/2019 | 20 | 2 | 102.95 | Yes | 61.06 | -41.89 |
| 15 | 8/14/2019 | 20 | 3 | 110.29 | Yes | 61.06 | -49.23 |
| 16 | 8/14/2019 | 20 | 4 | 63.59 | Yes | 61.06 | -2.53 |
| 17 | 8/14/2019 | 20 | 5 | 65.40 | Yes | 61.06 | -4.34 |
| 18 | 8/14/2019 | 20 | 6 | 55.97 | Yes | 61.06 | 5.09 |
| 19 | 8/14/2019 | 20 | 7 | 47.88 | Yes | 61.06 | 13.18 |
| 20 | 8/14/2019 | 20 | 8 | 47.80 | Yes | 61.06 | 13.26 |
| 21 | 8/14/2019 | 20 | 9 | 45.00 | Yes | 61.06 | 16.06 |
| 22 | 8/14/2019 | 20 | 10 | 41.77 | Yes | 61.06 | 19.29 |
| 23 | 8/14/2019 | 20 | 11 | 38.46 | Yes | 61.06 | 22.60 |
| 24 | 8/14/2019 | 20 | 12 | 37.84 | Yes | 61.06 | 23.22 |
| 25 | 8/14/2019 | 21 | 1 | 36.18 | Yes | 61.06 | 24.88 |
| 26 | 8/14/2019 | 21 | 2 | 35.93 | Yes | 61.06 | 25.13 |
| 27 | 8/14/2019 | 21 | 3 | 35.63 | Yes | 61.06 | 25.43 |
| 28 | 8/14/2019 | 21 | 4 | 36.09 | Yes | 61.06 | 24.97 |
| 29 | 8/14/2019 | 21 | 5 | 36.09 | Yes | 61.06 | 24.97 |
| 30 | 8/14/2019 | 21 | 6 | 34.96 | Yes | 61.06 | 26.10 |
| 31 | 8/14/2019 | 21 | 7 | 34.58 | Yes | 61.06 | 26.48 |
| 32 | 8/14/2019 | 21 | 8 | 34.58 | Yes | 61.06 | 26.48 |
| 33 | 8/14/2019 | 21 | 9 | 34.57 | Yes | 61.06 | 26.49 |
| 34 | 8/14/2019 | 21 | 10 | 43.89 | Yes | 61.06 | 17.17 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 35 | 8/14/2019 | 21 | 11 | 37.35 | Yes | 61.06 | 23.71 |
| 36 | 8/14/2019 | 21 | 12 | 35.83 | Yes | 61.06 | 25.23 |
| 37 | 8/15/2019 | 17 | 2 | 29.43 | Yes | 95.00 | 65.57 |
| 38 | 8/15/2019 | 17 | 3 | 29.51 | Yes | 95.00 | 65.49 |
| 39 | 8/15/2019 | 17 | 4 | 35.81 | Yes | 95.00 | 59.19 |
| 40 | 8/15/2019 | 17 | 5 | 35.63 | Yes | 95.00 | 59.37 |
| 41 | 8/15/2019 | 17 | 6 | 35.85 | Yes | 95.00 | 59.15 |
| 42 | 8/15/2019 | 17 | 7 | 33.85 | Yes | 95.00 | 61.15 |
| 43 | 8/15/2019 | 17 | 8 | 33.81 | Yes | 95.00 | 61.19 |
| 44 | 8/15/2019 | 17 | 9 | 33.96 | Yes | 95.00 | 61.04 |
| 45 | 8/15/2019 | 17 | 10 | 34.19 | Yes | 95.00 | 60.81 |
| 46 | 8/15/2019 | 17 | 11 | 34.88 | Yes | 95.00 | 60.12 |
| 47 | 8/15/2019 | 17 | 12 | 35.34 | Yes | 95.00 | 59.66 |
| 48 | 8/15/2019 | 18 | 1 | 35.26 | Yes | 95.00 | 59.74 |
| 49 | 8/15/2019 | 18 | 2 | 34.45 | Yes | 95.00 | 60.55 |
| 50 | 8/15/2019 | 18 | 3 | 34.86 | Yes | 95.00 | 60.14 |
| 51 | 8/15/2019 | 18 | 4 | 30.97 | Yes | 60.21 | 29.24 |
| 52 | 8/15/2019 | 18 | 5 | 34.80 | Yes | 60.21 | 25.41 |
| 53 | 8/15/2019 | 18 | 6 | 34.98 | Yes | 60.21 | 25.23 |
| 54 | 8/15/2019 | 18 | 7 | 35.49 | Yes | 60.21 | 24.72 |
| 55 | 8/15/2019 | 18 | 8 | 34.97 | Yes | 60.21 | 25.24 |
| 56 | 8/15/2019 | 18 | 9 | 36.84 | Yes | 60.21 | 23.37 |
| 57 | 8/15/2019 | 18 | 10 | 39.92 | Yes | 60.21 | 20.29 |
| 58 | 8/15/2019 | 18 | 11 | 40.10 | Yes | 60.21 | 20.11 |
| 59 | 8/15/2019 | 18 | 12 | 38.83 | Yes | 60.21 | 21.38 |
| 60 | 8/15/2019 | 19 | 1 | 35.49 | Yes | 54.71 | 19.22 |
| 61 | 8/15/2019 | 19 | 2 | 36.13 | Yes | 54.71 | 18.58 |
| 62 | 8/15/2019 | 19 | 3 | 38.57 | Yes | 54.71 | 16.14 |
| 63 | 8/15/2019 | 19 | 4 | 37.34 | Yes | 54.71 | 17.37 |
| 64 | 8/15/2019 | 19 | 5 | 38.64 | Yes | 54.71 | 16.07 |
| 65 | 8/15/2019 | 19 | 6 | 43.44 | Yes | 54.71 | 11.27 |
| 66 | 8/15/2019 | 19 | 7 | 44.79 | Yes | 54.71 | 9.92 |
| 67 | 8/15/2019 | 19 | 8 | 46.76 | Yes | 54.71 | 7.95 |
| 68 | 8/15/2019 | 19 | 9 | 49.53 | Yes | 54.71 | 5.18 |
| 69 | 8/15/2019 | 19 | 10 | 1002.08 | Yes | 54.71 | -947.37 |
| 70 | 8/15/2019 | 19 | 11 | 1002.08 | Yes | 54.71 | -947.37 |
| 71 | 8/15/2019 | 19 | 12 | 1002.08 | Yes | 54.71 | -947.37 |
| 72 | 8/15/2019 | 20 | 1 | 718.64 | Yes | 54.71 | -663.93 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 73 | 8/15/2019 | 20 | 2 | 744.99 | Yes | 54.71 | -690.28 |
| 74 | 8/15/2019 | 20 | 3 | 734.40 | Yes | 54.71 | -679.69 |
| 75 | 8/15/2019 | 20 | 4 | 85.60 | Yes | 54.71 | -30.89 |
| 76 | 8/15/2019 | 20 | 5 | 205.26 | Yes | 54.71 | -150.55 |
| 77 | 8/15/2019 | 20 | 6 | 65.99 | Yes | 54.71 | -11.28 |
| 78 | 8/15/2019 | 20 | 7 | 47.67 | Yes | 54.71 | 7.04 |
| 79 | 8/15/2019 | 20 | 8 | 44.74 | Yes | 54.71 | 9.97 |
| 80 | 8/15/2019 | 20 | 9 | 43.02 | Yes | 54.71 | 11.69 |
| 81 | 8/15/2019 | 20 | 10 | 40.57 | Yes | 54.71 | 14.14 |
| 82 | 8/15/2019 | 20 | 11 | 35.90 | Yes | 54.71 | 18.81 |
| 83 | 8/15/2019 | 20 | 12 | 36.19 | Yes | 54.71 | 18.52 |
| 84 | 8/15/2019 | 22 | 4 | 38.17 | Yes | 95.00 | 56.83 |
| 85 | 8/15/2019 | 22 | 5 | 38.77 | Yes | 95.00 | 56.23 |
| 86 | 8/15/2019 | 22 | 6 | 36.23 | Yes | 95.00 | 58.77 |
| 87 | 8/15/2019 | 22 | 7 | 35.19 | Yes | 95.00 | 59.81 |
| 88 | 8/15/2019 | 22 | 8 | 34.76 | Yes | 95.00 | 60.24 |
| 89 | 8/15/2019 | 22 | 9 | 35.10 | Yes | 95.00 | 59.90 |
| 90 | 8/15/2019 | 22 | 10 | 29.34 | Yes | 95.00 | 65.66 |
| 91 | 8/15/2019 | 22 | 11 | 29.66 | Yes | 95.00 | 65.34 |
| 92 | 8/15/2019 | 22 | 12 | 28.06 | Yes | 95.00 | 66.94 |
| 93 | 8/26/2019 | 16 | 12 | 45.89 | Yes | 50.74 | 4.85 |
| 94 | 8/26/2019 | 17 | 1 | 59.57 | Yes | 75.29 | 15.72 |
| 95 | 8/26/2019 | 17 | 2 | 57.75 | Yes | 75.29 | 17.54 |
| 96 | 8/26/2019 | 17 | 3 | 41.19 | Yes | 75.29 | 34.10 |
| 97 | 8/26/2019 | 17 | 4 | 39.91 | Yes | 75.29 | 35.38 |
| 98 | 8/26/2019 | 17 | 5 | 40.36 | Yes | 75.29 | 34.93 |
| 99 | 8/26/2019 | 17 | 6 | 41.12 | Yes | 75.29 | 34.17 |
| 100 | 8/26/2019 | 17 | 7 | 41.15 | Yes | 75.29 | 34.14 |
| 101 | 8/26/2019 | 17 | 8 | 41.20 | Yes | 75.29 | 34.09 |
| 102 | 8/26/2019 | 17 | 9 | 41.20 | Yes | 75.29 | 34.09 |
| 103 | 8/26/2019 | 17 | 10 | 45.77 | Yes | 75.29 | 29.52 |
| 104 | 8/26/2019 | 17 | 11 | 45.73 | Yes | 75.29 | 29.56 |
| 105 | 8/26/2019 | 17 | 12 | 45.79 | Yes | 75.29 | 29.50 |
| 106 | 8/26/2019 | 18 | 1 | 45.74 | Yes | 50.74 | 5.00 |
| 107 | 8/26/2019 | 18 | 2 | 40.83 | Yes | 50.74 | 9.91 |
| 108 | 8/26/2019 | 18 | 3 | 40.84 | Yes | 50.74 | 9.90 |
| 109 | 8/26/2019 | 18 | 4 | 43.66 | Yes | 50.74 | 7.08 |
| 110 | 8/26/2019 | 18 | 5 | 46.67 | Yes | 50.74 | 4.07 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 111 | 8/26/2019 | 18 | 6 | 49.02 | Yes | 50.74 | 1.72 |
| 112 | 8/26/2019 | 18 | 7 | 48.93 | Yes | 50.74 | 1.81 |
| 113 | 8/26/2019 | 18 | 8 | 49.07 | Yes | 50.74 | 1.67 |
| 114 | 8/26/2019 | 18 | 9 | 49.07 | Yes | 50.74 | 1.67 |
| 115 | 8/26/2019 | 18 | 10 | 49.47 | Yes | 50.74 | 1.27 |
| 116 | 8/26/2019 | 18 | 11 | 49.93 | Yes | 50.74 | 0.81 |
| 117 | 8/26/2019 | 18 | 12 | 49.47 | Yes | 50.74 | 1.27 |
| 118 | 8/26/2019 | 19 | 1 | 53.93 | Yes | 75.29 | 21.36 |
| 119 | 8/26/2019 | 19 | 2 | 55.25 | Yes | 75.29 | 20.04 |
| 120 | 8/26/2019 | 19 | 3 | 55.20 | Yes | 75.29 | 20.09 |
| 121 | 8/26/2019 | 19 | 4 | 53.84 | Yes | 75.29 | 21.45 |
| 122 | 8/26/2019 | 20 | 4 | 53.04 | Yes | 80.00 | 26.96 |
| 123 | 8/26/2019 | 20 | 5 | 50.67 | Yes | 80.00 | 29.33 |
| 124 | 8/26/2019 | 20 | 6 | 50.15 | Yes | 80.00 | 29.85 |
| 125 | 8/26/2019 | 20 | 7 | 50.13 | Yes | 80.00 | 29.87 |
| 126 | 8/26/2019 | 20 | 8 | 48.39 | Yes | 80.00 | 31.61 |
| 127 | 8/26/2019 | 20 | 9 | 47.42 | Yes | 80.00 | 32.58 |
| 128 | 8/26/2019 | 20 | 10 | 40.45 | Yes | 80.00 | 39.55 |
| 129 | 8/26/2019 | 20 | 11 | 40.45 | Yes | 80.00 | 39.55 |
| 130 | 8/26/2019 | 20 | 12 | 41.90 | Yes | 80.00 | 38.10 |
| 131 | 8/29/2019 | 17 | 4 | 64.42 | Yes | 62.45 | -1.97 |
| 132 | 8/29/2019 | 17 | 5 | 47.54 | Yes | 62.45 | 14.91 |
| 133 | 8/29/2019 | 17 | 6 | 47.52 | Yes | 62.45 | 14.93 |
| 134 | 8/29/2019 | 17 | 7 | 46.78 | Yes | 62.45 | 15.67 |
| 135 | 8/29/2019 | 17 | 8 | 47.04 | Yes | 62.45 | 15.41 |
| 136 | 8/29/2019 | 17 | 9 | 62.45 | Yes | 62.45 | 0.00 |
| 137 | 8/29/2019 | 17 | 10 | 43.16 | Yes | 89.15 | 45.99 |
| 138 | 8/29/2019 | 17 | 11 | 39.35 | Yes | 89.15 | 49.80 |
| 139 | 8/29/2019 | 17 | 12 | 38.89 | Yes | 89.15 | 50.26 |
| 140 | 8/29/2019 | 18 | 1 | 59.24 | Yes | 89.15 | 29.91 |
| 141 | 8/29/2019 | 18 | 2 | 59.24 | Yes | 89.15 | 29.91 |
| 142 | 8/29/2019 | 18 | 3 | 59.24 | Yes | 89.15 | 29.91 |
| 143 | 8/29/2019 | 18 | 4 | 55.68 | Yes | 89.15 | 33.47 |
| 144 | 8/29/2019 | 18 | 5 | 53.88 | Yes | 89.15 | 35.27 |
| 145 | 8/29/2019 | 18 | 6 | 53.98 | Yes | 89.15 | 35.17 |
| 146 | 8/29/2019 | 18 | 7 | 50.62 | Yes | 89.15 | 38.53 |
| 147 | 8/29/2019 | 18 | 8 | 48.01 | Yes | 89.15 | 41.14 |
| 148 | 8/29/2019 | 18 | 9 | 50.51 | Yes | 89.15 | 38.64 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 149 | 8/29/2019 | 18 | 10 | 47.91 | Yes | 89.15 | 41.24 |
| 150 | 8/29/2019 | 18 | 11 | 47.91 | Yes | 89.15 | 41.24 |
| 151 | 8/29/2019 | 18 | 12 | 47.91 | Yes | 89.15 | 41.24 |
| 152 | 8/29/2019 | 19 | 1 | 98.55 | Yes | 89.15 | -9.40 |
| 153 | 8/29/2019 | 19 | 2 | 86.02 | Yes | 89.15 | 3.13 |
| 154 | 8/29/2019 | 19 | 3 | 64.41 | Yes | 66.56 | 2.15 |
| 155 | 8/29/2019 | 19 | 4 | 55.88 | Yes | 62.45 | 6.57 |
| 156 | 8/29/2019 | 19 | 5 | 50.09 | Yes | 62.45 | 12.36 |
| 157 | 8/29/2019 | 19 | 6 | 47.63 | Yes | 62.45 | 14.82 |
| 158 | 8/29/2019 | 19 | 7 | 47.78 | Yes | 62.45 | 14.67 |
| 159 | 8/29/2019 | 19 | 8 | 55.76 | Yes | 62.45 | 6.69 |
| 160 | 8/29/2019 | 19 | 9 | 65.18 | Yes | 62.45 | -2.73 |
| 161 | 8/29/2019 | 19 | 10 | 65.14 | Yes | 65.10 | -0.04 |
| 162 | 8/29/2019 | 19 | 11 | 62.77 | Yes | 62.45 | -0.32 |
| 163 | 8/29/2019 | 19 | 12 | 62.77 | Yes | 62.45 | -0.32 |
| 164 | 8/29/2019 | 20 | 1 | 55.58 | Yes | 71.19 | 15.61 |
| 165 | 8/29/2019 | 20 | 2 | 48.16 | Yes | 71.19 | 23.03 |
| 166 | 8/29/2019 | 20 | 3 | 47.88 | Yes | 71.19 | 23.31 |
| 167 | 8/29/2019 | 20 | 4 | 47.86 | Yes | 89.15 | 41.29 |
| 168 | 8/29/2019 | 20 | 5 | 47.86 | Yes | 89.15 | 41.29 |
| 169 | 8/29/2019 | 20 | 6 | 47.88 | Yes | 89.15 | 41.27 |
| 170 | 8/29/2019 | 20 | 7 | 43.78 | Yes | 62.45 | 18.67 |
| 171 | 8/29/2019 | 20 | 8 | 44.15 | Yes | 62.45 | 18.30 |
| 172 | 8/29/2019 | 20 | 9 | 44.14 | Yes | 62.45 | 18.31 |
| 173 | 8/29/2019 | 20 | 10 | 44.44 | Yes | 62.45 | 18.01 |
| 174 | 8/29/2019 | 20 | 11 | 41.67 | Yes | 62.45 | 20.78 |
| 175 | 8/29/2019 | 20 | 12 | 39.90 | Yes | 62.45 | 22.55 |
| 176 | 8/30/2019 | 16 | 1 | 36.00 | Yes | 83.60 | 47.60 |
| 177 | 8/30/2019 | 16 | 2 | 34.90 | Yes | 83.60 | 48.70 |
| 178 | 8/30/2019 | 16 | 3 | 39.77 | Yes | 83.60 | 43.83 |
| 179 | 8/30/2019 | 16 | 4 | 48.09 | Yes | 83.60 | 35.51 |
| 180 | 8/30/2019 | 16 | 5 | 48.09 | Yes | 83.60 | 35.51 |
| 181 | 8/30/2019 | 16 | 6 | 48.09 | Yes | 83.60 | 35.51 |
| 182 | 8/30/2019 | 16 | 7 | 48.22 | Yes | 83.60 | 35.38 |
| 183 | 8/30/2019 | 16 | 8 | 48.22 | Yes | 83.60 | 35.38 |
| 184 | 8/30/2019 | 16 | 9 | 51.96 | Yes | 83.60 | 31.64 |
| 185 | 8/30/2019 | 16 | 10 | 49.14 | Yes | 83.60 | 34.46 |
| 186 | 8/30/2019 | 16 | 11 | 53.51 | Yes | 83.60 | 30.09 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 187 | 8/30/2019 | 16 | 12 | 56.43 | Yes | 83.60 | 27.17 |
| 188 | 8/30/2019 | 17 | 1 | 48.23 | Yes | 83.60 | 35.37 |
| 189 | 8/30/2019 | 17 | 2 | 44.77 | Yes | 83.60 | 38.83 |
| 190 | 8/30/2019 | 17 | 3 | 48.23 | Yes | 83.60 | 35.37 |
| 191 | 8/30/2019 | 17 | 4 | 48.14 | Yes | 83.60 | 35.46 |
| 192 | 8/30/2019 | 17 | 5 | 48.14 | Yes | 83.60 | 35.46 |
| 193 | 8/30/2019 | 17 | 6 | 54.15 | Yes | 83.60 | 29.45 |
| 194 | 8/30/2019 | 17 | 7 | 52.29 | Yes | 83.60 | 31.31 |
| 195 | 8/30/2019 | 17 | 8 | 48.20 | Yes | 83.60 | 35.40 |
| 196 | 8/30/2019 | 17 | 9 | 52.78 | Yes | 83.60 | 30.82 |
| 197 | 8/30/2019 | 17 | 10 | 54.03 | Yes | 83.60 | 29.57 |
| 198 | 8/30/2019 | 17 | 11 | 54.03 | Yes | 83.60 | 29.57 |
| 199 | 8/30/2019 | 17 | 12 | 49.83 | Yes | 83.60 | 33.77 |
| 200 | 8/30/2019 | 18 | 1 | 41.50 | Yes | 83.60 | 42.10 |
| 201 | 8/30/2019 | 18 | 2 | 38.22 | Yes | 83.60 | 45.38 |
| 202 | 8/30/2019 | 18 | 3 | 40.72 | Yes | 83.60 | 42.88 |
| 203 | 8/30/2019 | 18 | 4 | 41.57 | Yes | 83.60 | 42.03 |
| 204 | 8/30/2019 | 18 | 5 | 44.73 | Yes | 83.60 | 38.87 |
| 205 | 8/30/2019 | 18 | 6 | 47.91 | Yes | 83.60 | 35.69 |
| 206 | 8/30/2019 | 18 | 7 | 49.83 | Yes | 83.60 | 33.77 |
| 207 | 8/30/2019 | 18 | 8 | 53.45 | Yes | 83.60 | 30.15 |
| 208 | 8/30/2019 | 18 | 9 | 58.16 | Yes | 83.60 | 25.44 |
| 209 | 8/30/2019 | 18 | 10 | 62.50 | Yes | 83.60 | 21.10 |
| 210 | 8/30/2019 | 18 | 11 | 125.90 | Yes | 83.60 | -42.30 |
| 211 | 8/30/2019 | 18 | 12 | 101.91 | Yes | 83.60 | -18.31 |
| 212 | 8/30/2019 | 19 | 1 | 59.67 | Yes | 83.60 | 23.93 |
| 213 | 8/30/2019 | 19 | 2 | 58.63 | Yes | 83.60 | 24.97 |
| 214 | 8/30/2019 | 19 | 3 | 59.67 | Yes | 83.60 | 23.93 |
| 215 | 8/30/2019 | 19 | 4 | 67.80 | Yes | 83.60 | 15.80 |
| 216 | 8/30/2019 | 19 | 5 | 95.30 | Yes | 83.60 | -11.70 |
| 217 | 8/30/2019 | 19 | 6 | 74.48 | Yes | 83.60 | 9.12 |
| 218 | 8/30/2019 | 19 | 7 | 68.78 | Yes | 83.60 | 14.82 |
| 219 | 8/30/2019 | 19 | 8 | 68.78 | Yes | 83.60 | 14.82 |
| 220 | 8/30/2019 | 19 | 9 | 76.08 | Yes | 83.60 | 7.52 |
| 221 | 8/30/2019 | 19 | 10 | 97.26 | Yes | 83.60 | -13.66 |
| 222 | 8/30/2019 | 19 | 11 | 80.80 | Yes | 83.60 | 2.80 |
| 223 | 8/30/2019 | 19 | 12 | 67.52 | Yes | 83.60 | 16.08 |
| 224 | 8/30/2019 | 20 | 1 | 61.07 | Yes | 83.60 | 22.53 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 225 | 8/30/2019 | 20 | 2 | 51.45 | Yes | 83.60 | 32.15 |
| 226 | 8/30/2019 | 20 | 3 | 51.45 | Yes | 83.60 | 32.15 |
| 227 | 8/30/2019 | 20 | 4 | 48.58 | Yes | 83.60 | 35.02 |
| 228 | 8/30/2019 | 20 | 5 | 48.25 | Yes | 83.60 | 35.35 |
| 229 | 8/30/2019 | 20 | 6 | 48.25 | Yes | 83.60 | 35.35 |
| 230 | 8/30/2019 | 20 | 7 | 48.05 | Yes | 83.60 | 35.55 |
| 231 | 8/30/2019 | 20 | 8 | 48.05 | Yes | 83.60 | 35.55 |
| 232 | 8/30/2019 | 20 | 9 | 46.24 | Yes | 83.60 | 37.36 |
| 233 | 8/30/2019 | 20 | 10 | 47.36 | Yes | 83.60 | 36.24 |
| 234 | 8/30/2019 | 20 | 11 | 46.21 | Yes | 83.60 | 37.39 |
| 235 | 8/30/2019 | 20 | 12 | 46.81 | Yes | 83.60 | 36.79 |
| 236 | 8/30/2019 | 21 | 1 | 42.96 | Yes | 83.60 | 40.64 |
| 237 | 8/30/2019 | 21 | 2 | 41.78 | Yes | 83.60 | 41.82 |
| 238 | 8/30/2019 | 21 | 3 | 42.96 | Yes | 83.60 | 40.64 |
| 239 | 8/30/2019 | 21 | 4 | 35.56 | Yes | 83.60 | 48.04 |
| 240 | 8/30/2019 | 21 | 5 | 34.60 | Yes | 83.60 | 49.00 |
| 241 | 8/30/2019 | 21 | 6 | 34.51 | Yes | 83.60 | 49.09 |
| 242 | 8/30/2019 | 21 | 7 | 35.41 | Yes | 83.60 | 48.19 |
| 243 | 8/30/2019 | 21 | 8 | 35.41 | Yes | 83.60 | 48.19 |
| 244 | 8/30/2019 | 21 | 9 | 34.63 | Yes | 83.60 | 48.97 |
| 245 | 8/30/2019 | 21 | 10 | 32.37 | Yes | 83.60 | 51.23 |
| 246 | 8/30/2019 | 21 | 11 | 32.04 | Yes | 83.60 | 51.56 |
| 247 | 8/30/2019 | 21 | 12 | 32.25 | Yes | 83.60 | 51.35 |

Appendix C: Exceptional Dispatch Bid Mitigation Analysis

In August 2019, the ISO applied the exceptional dispatch bid mitigation to the exceptional dispatches. Table 10 shows the costs by instruction type in August. With exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches were \$ 90,918. Without the exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches would be \$ 368,015. The cost saving from the exceptional dispatch bid mitigation was \$ 277,097.

Table 10: Bid Mitigation Analysis for August 2019

| Type | Number of Resources | Costs without Bid Mitigation | Costs with Bid Mitigation | Cost Saving |
|---------|---------------------|------------------------------|---------------------------|-------------|
| NONTMOD | 11 | \$ 368,015 | \$ 90,918 | \$ 277,097 |
| Total | 11 | \$ 368,015 | \$ 90,918 | \$ 277,097 |

ATTACHMENT B

**September 2019 Exceptional Dispatch Report
Chart 1 data**



Exceptional Dispatch Report

Table 1: September 2019

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Introduction

This report is filed pursuant to FERC's September 2, 2009, and May 4, 2010, orders in Docket No. ER08-1178. These orders require two monthly Exceptional Dispatch reports—one issued on the 15th of each month and one originally issued on the 30th of each month. Both Table 1 and Table 2 reports will be issued on the 15th of each month due to the availability of necessary data. This report provides data on the frequency and reasons for Exceptional Dispatches issued in September 2019.

The Nature of Exceptional Dispatch

The CAISO can issue exceptional dispatch instructions for a resource as a pre-day-ahead unit commitment, which may also include an indicative exceptional dispatch energy schedule; a post-day-ahead unit commitment; or a real-time exceptional dispatch.¹ A pre-day-ahead commitment is an exceptional dispatch instruction that commits a resource at or above its physical minimum operating level in the day-ahead market. A post-day-ahead market commitment is an exceptional dispatch instruction that commits a resource at or above its physical minimum operating level in the real-time market. A real-time exceptional dispatch instruction is a dispatch of a resource at or above its physical minimum operating point. A real-time exceptional dispatch above the resource day-ahead award is an incremental exceptional dispatch instruction and an exceptional dispatch below the day-ahead award is a decremental dispatch instruction.

The CAISO issues exceptional dispatch instructions to maintain the reliability of the grid when the market software cannot do so. Whenever the CAISO issues an exceptional dispatch instruction, the operator logs the dispatch and the associated reason.

Many of the exceptional dispatches listed below in Table 1 were to satisfy either a local area or system reliability requirements, and are classified into local generation requirements, transmission management requirements, non-modeled transmission outages or other non-modeled constraints or requirements and intertie emergency assistance. All of the transmission procedures are available on the CAISO website.²

The following reason for exceptional dispatch instructions in September 2019 was not related to generation or transmission operating procedures: Software Limitation, when an exceptional dispatch instruction was used to bridge schedules across days for resources with a minimum down time of 24 hours, as the CAISO software does not handle multi day commitment. For instance, a

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

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

resource has a day-ahead schedule from 0600 till 2300, and then is shut down in 2400. If this resource had a minimum down time of 24 hours and it is required the following day, then the CAISO issues an exceptional dispatch to commit this resource in 2400 so it can be dispatched economically in the following day. Software limitation reason was also used for exceptional dispatches to manually issue shut down instructions to a resource because of a temporary Automatic Dispatch System (“ADS”) failure, or similar issues. Interconnection Reliability Operating Limits (IROL) are system operating limits 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 used in the operating horizon – any of which can be the most restrictive limit at any point in time, pre – or post – contingency. Control Points (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 September 2019, which are self explanatory.

The data in Table 1 is based on a template specified in the September 2009 order. Each entry in Attachment A is a summary of exceptional dispatches classified by (1) the reason for the exceptional dispatch; (2) the location of the resource by Participating Transmission Owner (“PTO”) service area; (3) the Local Reliability Area (“LRA”) where applicable; (4) the market in which the exceptional dispatch occurred (day-ahead vs. real-time); and (5) the date of the exceptional dispatch. For each classification the following information is provided: (1) Megawatts (MW); (2) Commitment (3) Inc or Dec (4) Hours; (5) Begin Time; and (6) End Time.

The MW column shows the range of exceptional dispatch instructions in MW for the classification. The Commitment column specifies if there was a unit commitment for the classification. The INC/DEC column specifies if there was an incremental dispatch or a decremental dispatch from the IFM schedule. The Begin Time column shows the start of exceptional dispatch for the classification and the End Time column shows the end of exceptional dispatch for the classification. The column Hours is the difference between end time and begin time rounded up to the next hour. The data shown is further explained by way of example in Attachment A.

Table 1 indicates there were 300 exceptional dispatches in September 2019, as compared to 311 exceptional dispatches in August 2019. Exceptional dispatches issued for the following reasons accounted for approximately 67 percent of the total exceptional dispatches during the reporting period: planned transmission outages; software limitations; load forecast uncertainty; and operating procedure number 7110 (along with 7430, 7450, 7630, 7720, 7750, and 7820). Many of the exceptional dispatches with the reason “Other Reliability Requirement” were due to Real Time Contingency Analysis.

Table 1: Exceptional Dispatches in September 2019

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

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

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|---------------------------------------|----------|------------------------|------------|----------|------------|---------|-------|------------|----------|
| 1 | RT | Bridging Schedules | SCE | LA Basin | 9/11/2019 | 20 | Yes | INC | 2 | 22:00 | 0:00 |
| 2 | RT | Fast Start Unit Management | PGAE | Bay Area | 9/2/2019 | 0 | No | INC | 2 | 4:45 | 5:50 |
| 3 | RT | Fast Start Unit Management | PGAE | Kern | 9/26/2019 | 0 | No | DEC | 1 | 13:05 | 13:35 |
| 4 | RT | Fast Start Unit Management | SCE | LA Basin | 9/2/2019 | 0 | No | INC | 1 | 5:45 | 6:15 |
| 5 | RT | Fast Start Unit Management | SCE | LA Basin | 9/23/2019 | 0 | No | INC | 1 | 22:45 | 23:45 |
| 6 | RT | Fast Start Unit Management | SDGE | San Diego-IV | 9/26/2019 | 0 | No | INC | 1 | 13:50 | 14:45 |
| 7 | RT | Incomplete or Inaccurate Transmission | PGAE | NCNB | 9/23/2019 | 75 | No | DEC | 3 | 17:20 | 20:00 |
| 8 | RT | Incomplete or Inaccurate Transmission | PGAE | Stockton | 9/26/2019 | 89 | No | DEC | 4 | 16:45 | 20:00 |
| 9 | RT | Load Forecast Uncertainty | Intertie | NA | 9/2/2019 | 124 | No | DEC | 1 | 18:00 | 19:00 |
| 10 | RT | Load Forecast Uncertainty | Intertie | NA | 9/2/2019 | 50 - 300 | No | INC | 3 | 17:00 | 20:00 |
| 11 | RT | Load Forecast Uncertainty | Intertie | NA | 9/3/2019 | 50 - 103 | No | DEC | 2 | 17:00 | 19:00 |
| 12 | RT | Load Forecast Uncertainty | Intertie | NA | 9/3/2019 | 50 - 239 | No | INC | 3 | 17:00 | 20:00 |
| 13 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/2/2019 | 120 | No | INC | 1 | 2:30 | 3:25 |
| 14 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/3/2019 | 133 | No | INC | 2 | 15:00 | 17:00 |
| 15 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/4/2019 | 20 | No | DEC | 2 | 18:00 | 20:00 |
| 16 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/4/2019 | 20 - 198 | No | INC | 9 | 12:35 | 21:00 |
| 17 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/23/2019 | 175 | No | INC | 7 | 15:00 | 22:00 |
| 18 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/4/2019 | 21 - 407 | No | INC | 6 | 15:25 | 21:00 |
| 19 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/15/2019 | 83 | No | INC | 2 | 16:05 | 18:00 |
| 20 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/23/2019 | 83 - 400 | No | INC | 3 | 21:15 | 0:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|---------------------------|----------|------------------------|------------|----------|------------|---------|-------|------------|----------|
| 21 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/24/2019 | 0 - 83 | No | INC | 1 | 0:00 | 0:45 |
| 22 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/25/2019 | 83 | No | INC | 2 | 22:30 | 0:00 |
| 23 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/26/2019 | 83 | Yes | INC | 1 | 0:00 | 0:30 |
| 24 | RT | Load Forecast Uncertainty | PGAE | NA | 9/3/2019 | 50 | No | DEC | 10 | 11:55 | 21:00 |
| 25 | RT | Load Forecast Uncertainty | PGAE | NA | 9/26/2019 | 150 | No | DEC | 1 | 19:00 | 20:00 |
| 26 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/3/2019 | 50 - 54 | No | INC | 11 | 13:00 | 0:00 |
| 27 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/4/2019 | 50 - 650 | No | INC | 24 | 0:00 | 0:00 |
| 28 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/6/2019 | 50 | No | INC | 22 | 0:00 | 22:00 |
| 29 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/13/2019 | 50 | No | INC | 10 | 14:00 | 0:00 |
| 30 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/14/2019 | 50 | No | INC | 7 | 14:00 | 21:00 |
| 31 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/23/2019 | 50 | No | INC | 9 | 15:30 | 0:00 |
| 32 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/24/2019 | 50 | No | INC | 24 | 0:00 | 0:00 |
| 33 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/25/2019 | 50 | No | INC | 22 | 0:00 | 22:00 |
| 34 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/1/2019 | 70 | No | INC | 3 | 21:00 | 0:00 |
| 35 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/2/2019 | 70 | No | INC | 16 | 0:00 | 16:00 |
| 36 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/3/2019 | 20 | No | DEC | 5 | 16:50 | 21:00 |
| 37 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/3/2019 | 10 - 70 | No | INC | 9 | 15:00 | 0:00 |
| 38 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/4/2019 | 10 - 170 | Yes | INC | 11 | 13:00 | 0:00 |
| 39 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/5/2019 | 10 | Yes | INC | 24 | 0:00 | 0:00 |
| 40 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/6/2019 | 70 | No | INC | 24 | 0:00 | 0:00 |
| 41 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/9/2019 | 10 - 20 | No | INC | 7 | 17:00 | 0:00 |
| 42 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/11/2019 | 10 | No | INC | 1 | 23:00 | 0:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|--|----------|------------------------|------------|----------|------------|---------|-------|------------|----------|
| 43 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/12/2019 | 10 - 20 | Yes | INC | 24 | 0:00 | 0:00 |
| 44 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/13/2019 | 10 - 130 | No | INC | 19 | 5:00 | 0:00 |
| 45 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/14/2019 | 20 - 130 | No | INC | 21 | 0:00 | 21:00 |
| 46 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/24/2019 | 10 - 130 | No | INC | 24 | 0:00 | 0:00 |
| 47 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/25/2019 | 70 - 130 | No | INC | 24 | 0:00 | 0:00 |
| 48 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/26/2019 | 130 | No | INC | 16 | 0:00 | 16:00 |
| 49 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/3/2019 | 21 | No | INC | 5 | 16:00 | 21:00 |
| 50 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/4/2019 | 24 - 40 | No | DEC | 7 | 14:00 | 21:00 |
| 51 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/4/2019 | 24 - 112 | No | INC | 12 | 9:30 | 21:00 |
| 52 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/5/2019 | 24 - 95 | No | DEC | 8 | 13:30 | 21:00 |
| 53 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/5/2019 | 95 | No | INC | 4 | 12:50 | 16:00 |
| 54 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/23/2019 | 155 | No | INC | 7 | 17:00 | 0:00 |
| 55 | RT | Load Pull | PGAE | Fresno | 9/5/2019 | 83 | No | INC | 2 | 15:45 | 17:00 |
| 56 | RT | Load Pull | SCE | LA Basin | 9/19/2019 | 20 | No | INC | 4 | 18:00 | 22:00 |
| 57 | RT | Load Pull | SCE | LA Basin | 9/24/2019 | 240 | No | INC | 7 | 16:50 | 23:00 |
| 58 | RT | Load Pull | SCE | LA Basin | 9/25/2019 | 240 | No | INC | 9 | 13:25 | 22:00 |
| 59 | RT | Market Disruption | PGAE | Bay Area | 9/4/2019 | 185 | No | INC | 1 | 17:40 | 17:50 |
| 60 | RT | Market Disruption | SCE | LA Basin | 9/4/2019 | 263 | No | INC | 2 | 17:30 | 19:00 |
| 61 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/1/2019 | 32 - 60 | No | DEC | 4 | 13:00 | 16:40 |
| 62 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/1/2019 | 32 | No | INC | 13 | 0:00 | 13:00 |
| 63 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/2/2019 | 28 - 42 | No | INC | 3 | 21:00 | 0:00 |
| 64 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/3/2019 | 14 - 64 | No | DEC | 11 | 11:00 | 22:00 |
| 65 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/3/2019 | 14 - 48 | No | INC | 22 | 0:00 | 22:00 |
| 66 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/4/2019 | 28 | No | INC | 1 | 23:35 | 0:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|--|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|
| 67 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/5/2019 | 28 - 30 | No | INC | 12 | 0:00 | 11:15 |
| 68 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/6/2019 | 28 - 48 | No | DEC | 7 | 16:00 | 23:00 |
| 69 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/6/2019 | 14 - 48 | No | INC | 4 | 20:00 | 0:00 |
| 70 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/7/2019 | 14 - 28 | No | INC | 24 | 0:00 | 0:00 |
| 71 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/8/2019 | 14 | No | DEC | 5 | 19:35 | 0:00 |
| 72 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/8/2019 | 14 - 28 | No | INC | 24 | 0:00 | 0:00 |
| 73 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/9/2019 | 14 | No | DEC | 6 | 0:00 | 5:55 |
| 74 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/9/2019 | 28 | No | INC | 1 | 0:00 | 1:00 |
| 75 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/22/2019 | 30 | No | INC | 19 | 5:10 | 0:00 |
| 76 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/23/2019 | 15 - 30 | No | DEC | 21 | 0:00 | 21:00 |
| 77 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/23/2019 | 30 - 32 | No | INC | 18 | 6:00 | 0:00 |
| 78 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/24/2019 | 16 - 30 | No | DEC | 21 | 0:30 | 21:00 |
| 79 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/24/2019 | 16 - 45 | No | INC | 24 | 0:00 | 0:00 |
| 80 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/25/2019 | 30 | No | DEC | 8 | 13:00 | 21:00 |
| 81 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/25/2019 | 30 - 48 | No | INC | 24 | 0:00 | 0:00 |
| 82 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/26/2019 | 32 | No | DEC | 3 | 17:00 | 20:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|--|----------|------------------------|------------|--------------|------------|---------|-------|------------|----------|
| 83 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/26/2019 | 0 - 48 | No | INC | 24 | 0:00 | 0:00 |
| 84 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/27/2019 | 30 - 32 | No | INC | 24 | 0:00 | 0:00 |
| 85 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/28/2019 | 30 | No | INC | 8 | 0:00 | 8:00 |
| 86 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/4/2019 | 83 | No | INC | 1 | 22:00 | 23:00 |
| 87 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/25/2019 | 70 | No | DEC | 1 | 16:15 | 17:00 |
| 88 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/27/2019 | 74 | No | DEC | 1 | 17:00 | 18:00 |
| 89 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/27/2019 | 74 | No | INC | 9 | 11:15 | 20:00 |
| 90 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/29/2019 | 70 - 75 | No | INC | 15 | 5:35 | 20:00 |
| 91 | RT | Operating Procedure Number and Constraint (7450) | PGAE | Kern | 9/5/2019 | 33 | No | INC | 6 | 16:15 | 22:00 |
| 92 | RT | Operating Procedure Number and Constraint (7630) | SCE | LA Basin | 9/11/2019 | 190 | No | INC | 7 | 15:15 | 22:00 |
| 93 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/1/2019 | 474 | No | INC | 5 | 15:15 | 20:00 |
| 94 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/3/2019 | 475 | No | INC | 2 | 22:15 | 0:00 |
| 95 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/4/2019 | 450 - 475.01 | No | INC | 12 | 12:45 | 0:00 |
| 96 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/5/2019 | 450 - 475 | No | INC | 2 | 0:00 | 1:30 |
| 97 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/6/2019 | 450 - 475 | No | INC | 7 | 17:40 | 0:00 |
| 98 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/7/2019 | 450 - 475 | No | INC | 22 | 0:00 | 22:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|--|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|
| 99 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/12/2019 | 420 | No | DEC | 2 | 18:00 | 20:00 |
| 100 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/12/2019 | 420 - 450 | No | INC | 7 | 17:30 | 0:00 |
| 101 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/13/2019 | 410 - 420 | No | DEC | 8 | 16:00 | 23:30 |
| 102 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/13/2019 | 420 - 440 | No | INC | 24 | 0:00 | 0:00 |
| 103 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/14/2019 | 360 - 410 | No | DEC | 9 | 15:30 | 0:00 |
| 104 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/14/2019 | 430 - 450 | No | INC | 16 | 0:00 | 15:30 |
| 105 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/15/2019 | 410 | No | DEC | 1 | 0:00 | 0:30 |
| 106 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/15/2019 | 450 | No | INC | 2 | 0:30 | 1:45 |
| 107 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/17/2019 | 450 | No | DEC | 1 | 19:00 | 20:00 |
| 108 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/17/2019 | 475 | No | INC | 3 | 16:55 | 19:00 |
| 109 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/21/2019 | 430 - 474 | No | DEC | 7 | 17:00 | 0:00 |
| 110 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/21/2019 | 430 - 474 | No | INC | 8 | 15:45 | 23:00 |
| 111 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/22/2019 | 430 - 475 | No | DEC | 7 | 15:00 | 22:00 |
| 112 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/22/2019 | 430 - 475 | No | INC | 24 | 0:00 | 0:00 |
| 113 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/23/2019 | 430 - 460 | No | DEC | 7 | 17:15 | 0:00 |
| 114 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/23/2019 | 430 - 475 | No | INC | 15 | 7:00 | 22:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|--|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|
| 115 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/24/2019 | 375 - 470 | No | DEC | 24 | 0:00 | 0:00 |
| 116 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/24/2019 | 470 | No | INC | 2 | 2:00 | 3:30 |
| 117 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/25/2019 | 350 - 411 | No | DEC | 24 | 0:00 | 0:00 |
| 118 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/25/2019 | 411 - 476 | No | INC | 15 | 0:25 | 15:00 |
| 119 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/26/2019 | 370 - 405 | No | DEC | 5 | 0:00 | 4:45 |
| 120 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/26/2019 | 430 - 460 | No | INC | 16 | 4:45 | 20:00 |
| 121 | RT | Operating Procedure Number and Constraint (7750) | SCE | LA Basin | 9/25/2019 | 436 | No | DEC | 8 | 12:00 | 20:00 |
| 122 | RT | Operating Procedure Number and Constraint (7750) | SCE | LA Basin | 9/25/2019 | 436 | No | INC | 3 | 9:25 | 12:00 |
| 123 | RT | Operating Procedure Number and Constraint (7820) | SDGE | San Diego-IV | 9/26/2019 | 24 | No | INC | 3 | 9:45 | 12:30 |
| 124 | RT | Other Reliability Requirement | PGAE | Bay Area | 9/4/2019 | 470 | No | DEC | 4 | 6:35 | 10:00 |
| 125 | RT | Other Reliability Requirement | PGAE | Fresno | 9/1/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 126 | RT | Other Reliability Requirement | PGAE | Fresno | 9/2/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 127 | RT | Other Reliability Requirement | PGAE | Fresno | 9/3/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 128 | RT | Other Reliability Requirement | PGAE | Fresno | 9/4/2019 | 4 - 12 | No | INC | 20 | 4:45 | 0:00 |
| 129 | RT | Other Reliability Requirement | PGAE | Fresno | 9/5/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 130 | RT | Other Reliability Requirement | PGAE | Fresno | 9/6/2019 | 4 - 12 | No | INC | 20 | 4:20 | 0:00 |
| 131 | RT | Other Reliability Requirement | PGAE | Fresno | 9/7/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 132 | RT | Other Reliability Requirement | PGAE | Fresno | 9/8/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 133 | RT | Other Reliability Requirement | PGAE | Fresno | 9/9/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 134 | RT | Other Reliability Requirement | PGAE | Fresno | 9/10/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 135 | RT | Other Reliability Requirement | PGAE | Fresno | 9/11/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 136 | RT | Other Reliability Requirement | PGAE | Fresno | 9/12/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|-------------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|
| 137 | RT | Other Reliability Requirement | PGAE | Fresno | 9/13/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 138 | RT | Other Reliability Requirement | PGAE | Fresno | 9/14/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 139 | RT | Other Reliability Requirement | PGAE | Fresno | 9/15/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 140 | RT | Other Reliability Requirement | PGAE | Fresno | 9/16/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 141 | RT | Other Reliability Requirement | PGAE | Fresno | 9/17/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 142 | RT | Other Reliability Requirement | PGAE | Fresno | 9/18/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 143 | RT | Other Reliability Requirement | PGAE | Fresno | 9/19/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 144 | RT | Other Reliability Requirement | PGAE | Fresno | 9/20/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 145 | RT | Other Reliability Requirement | PGAE | Fresno | 9/21/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 146 | RT | Other Reliability Requirement | PGAE | Fresno | 9/22/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 147 | RT | Other Reliability Requirement | PGAE | Fresno | 9/23/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 148 | RT | Other Reliability Requirement | PGAE | Fresno | 9/24/2019 | 200 | No | DEC | 2 | 16:45 | 18:00 |
| 149 | RT | Other Reliability Requirement | PGAE | Fresno | 9/24/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 150 | RT | Other Reliability Requirement | PGAE | Fresno | 9/25/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 151 | RT | Other Reliability Requirement | PGAE | Fresno | 9/26/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 152 | RT | Other Reliability Requirement | PGAE | Fresno | 9/27/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 153 | RT | Other Reliability Requirement | PGAE | Fresno | 9/28/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 154 | RT | Other Reliability Requirement | PGAE | Fresno | 9/29/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 155 | RT | Other Reliability Requirement | PGAE | Fresno | 9/30/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 |
| 156 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/1/2019 | 15 - 60 | No | DEC | 8 | 16:40 | 0:00 |
| 157 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/1/2019 | 32 - 60 | No | INC | 2 | 22:00 | 23:45 |
| 158 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/4/2019 | 45 | No | DEC | 4 | 17:10 | 21:00 |
| 159 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/5/2019 | 48 | No | DEC | 3 | 18:00 | 21:00 |
| 160 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/5/2019 | 15 - 48 | No | INC | 3 | 21:00 | 0:00 |
| 161 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/6/2019 | 15 | No | INC | 1 | 0:00 | 0:30 |
| 162 | RT | Other Reliability Requirement | PGAE | NA | 9/1/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 163 | RT | Other Reliability Requirement | PGAE | NA | 9/2/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 164 | RT | Other Reliability Requirement | PGAE | NA | 9/3/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 165 | RT | Other Reliability Requirement | PGAE | NA | 9/4/2019 | 38 | No | INC | 20 | 4:45 | 0:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|-------------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|
| 166 | RT | Other Reliability Requirement | PGAE | NA | 9/5/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 167 | RT | Other Reliability Requirement | PGAE | NA | 9/6/2019 | 38 | No | INC | 20 | 4:30 | 0:00 |
| 168 | RT | Other Reliability Requirement | PGAE | NA | 9/7/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 169 | RT | Other Reliability Requirement | PGAE | NA | 9/8/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 170 | RT | Other Reliability Requirement | PGAE | NA | 9/9/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 171 | RT | Other Reliability Requirement | PGAE | NA | 9/10/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 172 | RT | Other Reliability Requirement | PGAE | NA | 9/11/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 173 | RT | Other Reliability Requirement | PGAE | NA | 9/12/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 174 | RT | Other Reliability Requirement | PGAE | NA | 9/13/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 175 | RT | Other Reliability Requirement | PGAE | NA | 9/14/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 176 | RT | Other Reliability Requirement | PGAE | NA | 9/15/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 177 | RT | Other Reliability Requirement | PGAE | NA | 9/16/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 178 | RT | Other Reliability Requirement | PGAE | NA | 9/17/2019 | 32 - 38 | No | INC | 24 | 0:00 | 0:00 |
| 179 | RT | Other Reliability Requirement | PGAE | NA | 9/18/2019 | 32 - 38 | No | INC | 24 | 0:00 | 0:00 |
| 180 | RT | Other Reliability Requirement | PGAE | NA | 9/19/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 181 | RT | Other Reliability Requirement | PGAE | NA | 9/20/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 182 | RT | Other Reliability Requirement | PGAE | NA | 9/21/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 183 | RT | Other Reliability Requirement | PGAE | NA | 9/22/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 184 | RT | Other Reliability Requirement | PGAE | NA | 9/23/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 185 | RT | Other Reliability Requirement | PGAE | NA | 9/24/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 186 | RT | Other Reliability Requirement | PGAE | NA | 9/25/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 187 | RT | Other Reliability Requirement | PGAE | NA | 9/26/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 188 | RT | Other Reliability Requirement | PGAE | NA | 9/27/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 189 | RT | Other Reliability Requirement | PGAE | NA | 9/28/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 190 | RT | Other Reliability Requirement | PGAE | NA | 9/29/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 191 | RT | Other Reliability Requirement | PGAE | NA | 9/30/2019 | 38 | No | INC | 24 | 0:00 | 0:00 |
| 192 | RT | Other Reliability Requirement | PGAE | NCNB | 9/30/2019 | 70 | No | DEC | 8 | 12:30 | 20:00 |
| 193 | RT | Other Reliability Requirement | PGAE | NCNB | 9/30/2019 | 70 | No | INC | 1 | 18:00 | 19:00 |
| 194 | RT | Other Reliability Requirement | PGAE | Stockton | 9/30/2019 | 68 | No | DEC | 4 | 16:55 | 20:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|-----------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|
| 195 | RT | Planned Transmission Outage | PGAE | Fresno | 9/30/2019 | 0 | No | DEC | 1 | 15:50 | 16:00 |
| 196 | RT | Planned Transmission Outage | PGAE | Fresno | 9/30/2019 | 0 | No | INC | 3 | 16:00 | 18:50 |
| 197 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/2/2019 | 15 | No | DEC | 5 | 13:00 | 17:30 |
| 198 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/2/2019 | 15 | No | INC | 6 | 7:55 | 13:00 |
| 199 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/5/2019 | 30 - 45 | No | INC | 3 | 21:00 | 0:00 |
| 200 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/6/2019 | 30 - 42 | No | INC | 12 | 0:00 | 12:00 |
| 201 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/8/2019 | 14 | No | DEC | 4 | 20:00 | 0:00 |
| 202 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/9/2019 | 14 - 15 | No | DEC | 24 | 0:00 | 0:00 |
| 203 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/9/2019 | 15 - 30 | No | INC | 19 | 5:55 | 0:00 |
| 204 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/10/2019 | 14 - 45 | No | INC | 24 | 0:00 | 0:00 |
| 205 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/11/2019 | 15 | No | DEC | 1 | 18:00 | 18:25 |
| 206 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/11/2019 | 15 - 45 | No | INC | 24 | 0:00 | 0:00 |
| 207 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/12/2019 | 42 | No | DEC | 3 | 17:00 | 20:00 |
| 208 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/12/2019 | 15 - 45 | No | INC | 24 | 0:00 | 0:00 |
| 209 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/13/2019 | 30 - 62 | No | DEC | 7 | 13:00 | 20:00 |
| 210 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/13/2019 | 28 - 62 | No | INC | 24 | 0:00 | 0:00 |
| 211 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/14/2019 | 16 - 32 | No | DEC | 5 | 16:00 | 21:00 |
| 212 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/14/2019 | 14 - 32 | No | INC | 24 | 0:00 | 0:00 |
| 213 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/15/2019 | 14 | No | DEC | 20 | 0:00 | 19:55 |
| 214 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/15/2019 | 32 - 48 | No | INC | 24 | 0:00 | 0:00 |
| 215 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/16/2019 | 16 | No | DEC | 1 | 23:15 | 0:00 |
| 216 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/16/2019 | 28 - 48 | No | INC | 24 | 0:00 | 0:00 |
| 217 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/17/2019 | 16 | No | DEC | 12 | 0:00 | 12:00 |
| 218 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/17/2019 | 16 - 30 | No | INC | 24 | 0:00 | 0:00 |
| 219 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/18/2019 | 15 | No | DEC | 5 | 19:30 | 0:00 |
| 220 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/18/2019 | 30 | No | INC | 24 | 0:00 | 0:00 |
| 221 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/19/2019 | 15 | No | DEC | 24 | 0:00 | 0:00 |
| 222 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/19/2019 | 15 - 32 | No | INC | 24 | 0:00 | 0:00 |
| 223 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/20/2019 | 15 | No | DEC | 23 | 0:00 | 22:45 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|-----------------------------|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|
| 224 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/20/2019 | 14 - 32 | No | INC | 24 | 0:00 | 0:00 |
| 225 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/21/2019 | 14 | No | INC | 24 | 0:00 | 0:00 |
| 226 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/28/2019 | 15 - 30 | No | INC | 16 | 8:00 | 0:00 |
| 227 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/29/2019 | 15 - 32 | No | INC | 24 | 0:00 | 0:00 |
| 228 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/30/2019 | 14 - 32 | No | INC | 24 | 0:00 | 0:00 |
| 229 | RT | Planned Transmission Outage | PGAE | Stockton | 9/21/2019 | 88.8 | No | INC | 5 | 9:50 | 14:00 |
| 230 | RT | Planned Transmission Outage | PGAE | Stockton | 9/24/2019 | 115 - 192 | No | DEC | 7 | 16:10 | 23:00 |
| 231 | RT | Planned Transmission Outage | SCE | LA Basin | 9/18/2019 | 20 | No | INC | 24 | 0:00 | 0:00 |
| 232 | RT | Planned Transmission Outage | SCE | LA Basin | 9/19/2019 | 285 | No | INC | 7 | 15:30 | 22:00 |
| 233 | RT | Planned Transmission Outage | SCE | NA | 9/27/2019 | 200 | No | INC | 7 | 17:00 | 0:00 |
| 234 | RT | Planned Transmission Outage | SCE | NA | 9/28/2019 | 200 | No | DEC | 7 | 17:00 | 0:00 |
| 235 | RT | Planned Transmission Outage | SCE | NA | 9/28/2019 | 200 | No | INC | 22 | 0:00 | 22:00 |
| 236 | RT | Planned Transmission Outage | SCE | NA | 9/29/2019 | 200 | No | DEC | 24 | 0:00 | 0:00 |
| 237 | RT | Planned Transmission Outage | SCE | NA | 9/30/2019 | 200 | No | DEC | 6 | 17:00 | 23:00 |
| 238 | RT | Planned Transmission Outage | SCE | NA | 9/30/2019 | 200 | No | INC | 24 | 0:00 | 0:00 |
| 239 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 9/30/2019 | 100 - 420 | No | INC | 5 | 10:15 | 14:30 |
| 240 | RT | Software Limitation | PGAE | Bay Area | 9/3/2019 | 460 - 515 | No | INC | 2 | 18:40 | 20:00 |
| 241 | RT | Software Limitation | PGAE | Bay Area | 9/4/2019 | 294 | No | DEC | 3 | 17:40 | 19:45 |
| 242 | RT | Software Limitation | PGAE | Bay Area | 9/5/2019 | 185 | No | DEC | 2 | 18:00 | 20:00 |
| 243 | RT | Software Limitation | PGAE | Bay Area | 9/5/2019 | 185 | No | INC | 4 | 17:45 | 21:00 |
| 244 | RT | Software Limitation | PGAE | Bay Area | 9/6/2019 | 400 | No | DEC | 1 | 14:15 | 14:30 |
| 245 | RT | Software Limitation | PGAE | Fresno | 9/30/2019 | -319 | No | DEC | 2 | 10:45 | 12:00 |
| 246 | RT | Software Limitation | PGAE | Kern | 9/4/2019 | 32 | No | INC | 3 | 18:25 | 21:00 |
| 247 | RT | Software Limitation | PGAE | NA | 9/3/2019 | 30 | No | INC | 2 | 18:40 | 20:00 |
| 248 | RT | Software Limitation | PGAE | Sierra | 9/29/2019 | 0 | No | INC | 1 | 15:05 | 16:05 |
| 249 | RT | Software Limitation | PGAE | Stockton | 9/4/2019 | 332 | No | INC | 3 | 17:40 | 19:45 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|---------------------|----------|------------------------|------------|-------------|------------|---------|-------|------------|----------|
| 250 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/3/2019 | 400 - 750 | No | INC | 7 | 15:00 | 21:30 |
| 251 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/4/2019 | 400 - 750 | No | INC | 8 | 14:00 | 21:30 |
| 252 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/5/2019 | 645 | No | DEC | 3 | 17:00 | 20:00 |
| 253 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/5/2019 | 50 - 745 | No | INC | 20 | 0:00 | 20:00 |
| 254 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/6/2019 | 400.1 | No | INC | 4 | 16:30 | 20:30 |
| 255 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/8/2019 | 30 | No | DEC | 1 | 17:00 | 18:00 |
| 256 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/8/2019 | 30 | No | INC | 1 | 16:30 | 17:00 |
| 257 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/9/2019 | 0 | No | INC | 8 | 12:55 | 20:50 |
| 258 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/14/2019 | 400 | No | INC | 6 | 15:00 | 21:00 |
| 259 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/25/2019 | 400 | No | INC | 6 | 16:30 | 22:00 |
| 260 | RT | Software Limitation | SCE | LA Basin | 9/1/2019 | 190 - 241 | No | INC | 7 | 14:05 | 21:00 |
| 261 | RT | Software Limitation | SCE | LA Basin | 9/2/2019 | 5 - 495 | No | INC | 19 | 2:30 | 21:00 |
| 262 | RT | Software Limitation | SCE | LA Basin | 9/3/2019 | 174 - 240 | No | DEC | 7 | 14:00 | 21:00 |
| 263 | RT | Software Limitation | SCE | LA Basin | 9/3/2019 | 65 - 495 | No | INC | 9 | 14:00 | 22:30 |
| 264 | RT | Software Limitation | SCE | LA Basin | 9/4/2019 | 174 - 335 | No | DEC | 7 | 14:00 | 21:00 |
| 265 | RT | Software Limitation | SCE | LA Basin | 9/4/2019 | 10 - 497 | No | INC | 10 | 14:00 | 0:00 |
| 266 | RT | Software Limitation | SCE | LA Basin | 9/5/2019 | 190 - 247.1 | No | DEC | 8 | 14:00 | 22:00 |
| 267 | RT | Software Limitation | SCE | LA Basin | 9/5/2019 | 10 - 194 | No | INC | 15 | 0:00 | 15:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|---------------------|----------|------------------------|------------|------------|------------|---------|-------|------------|----------|
| 268 | RT | Software Limitation | SCE | LA Basin | 9/6/2019 | 240.1 | No | INC | 5 | 16:30 | 21:00 |
| 269 | RT | Software Limitation | SCE | LA Basin | 9/7/2019 | 190 - 194 | No | INC | 4 | 16:00 | 20:00 |
| 270 | RT | Software Limitation | SCE | LA Basin | 9/8/2019 | 65 - 190 | No | INC | 4 | 17:00 | 21:00 |
| 271 | RT | Software Limitation | SCE | LA Basin | 9/9/2019 | 65 - 190 | No | INC | 7 | 14:00 | 21:00 |
| 272 | RT | Software Limitation | SCE | LA Basin | 9/11/2019 | 194 | No | INC | 7 | 14:00 | 21:00 |
| 273 | RT | Software Limitation | SCE | LA Basin | 9/12/2019 | 65 - 194 | No | DEC | 3 | 17:00 | 20:00 |
| 274 | RT | Software Limitation | SCE | LA Basin | 9/12/2019 | 0 - 240 | No | INC | 20 | 1:00 | 21:00 |
| 275 | RT | Software Limitation | SCE | LA Basin | 9/13/2019 | 65 - 332 | No | DEC | 5 | 14:00 | 19:00 |
| 276 | RT | Software Limitation | SCE | LA Basin | 9/13/2019 | 65 - 494.9 | No | INC | 7 | 14:00 | 21:00 |
| 277 | RT | Software Limitation | SCE | LA Basin | 9/14/2019 | 65 - 194 | No | INC | 6 | 15:00 | 21:00 |
| 278 | RT | Software Limitation | SCE | LA Basin | 9/15/2019 | 65 - 194 | No | INC | 7 | 14:00 | 21:00 |
| 279 | RT | Software Limitation | SCE | LA Basin | 9/18/2019 | 194 | No | INC | 3 | 5:30 | 7:45 |
| 280 | RT | Software Limitation | SCE | LA Basin | 9/23/2019 | 0 | No | DEC | 8 | 16:00 | 0:00 |
| 281 | RT | Software Limitation | SCE | LA Basin | 9/23/2019 | 65 - 194 | No | INC | 9 | 13:40 | 22:00 |
| 282 | RT | Software Limitation | SCE | LA Basin | 9/24/2019 | 0 - 195 | No | INC | 23 | 0:00 | 23:00 |
| 283 | RT | Software Limitation | SCE | LA Basin | 9/25/2019 | 195 | No | INC | 9 | 13:25 | 22:00 |
| 284 | RT | Software Limitation | SCE | NA | 9/3/2019 | 440 | No | INC | 3 | 18:25 | 21:00 |
| 285 | RT | Software Limitation | SCE | NA | 9/22/2019 | 200 | No | DEC | 3 | 18:30 | 20:45 |
| 286 | RT | Software Limitation | SDGE | San Diego-IV | 9/20/2019 | 0 | No | DEC | 1 | 20:00 | 21:00 |
| 287 | RT | Software Limitation | SDGE | San Diego-IV | 9/21/2019 | 0 | No | INC | 1 | 18:00 | 19:00 |
| 288 | RT | SOL | PGAE | Humboldt | 9/2/2019 | 48 - 65 | No | INC | 3 | 18:45 | 21:00 |
| 289 | RT | SOL | PGAE | Stockton | 9/25/2019 | 90 - 192 | No | DEC | 11 | 13:45 | 0:00 |
| 290 | RT | SOL | PGAE | Stockton | 9/26/2019 | 90 | No | DEC | 5 | 0:00 | 4:45 |
| 291 | RT | Unit Testing | PGAE | Bay Area | 9/26/2019 | 25 | No | INC | 4 | 8:30 | 12:30 |
| 292 | RT | Unit Testing | PGAE | Fresno | 9/6/2019 | 316 | No | INC | 1 | 20:30 | 21:00 |
| 293 | RT | Unit Testing | PGAE | Sierra | 9/12/2019 | 10 | No | INC | 1 | 8:20 | 8:35 |
| 294 | RT | Unit Testing | PGAE | Sierra | 9/26/2019 | 57 | No | INC | 1 | 22:20 | 23:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|-----------------|----------|------------------------|------------|-----------------|------------|---------|-------|------------|----------|
| 295 | RT | Unit Testing | SCE | LA Basin | 9/12/2019 | 49 | No | INC | 1 | 17:15 | 18:15 |
| 296 | RT | Voltage Support | PGAE | Fresno | 9/8/2019 | -323 | No | DEC | 3 | 4:20 | 7:00 |
| 297 | RT | Voltage Support | PGAE | Fresno | 9/29/2019 | -322 - - 320 | No | DEC | 19 | 5:15 | 0:00 |
| 298 | RT | Voltage Support | PGAE | Fresno | 9/29/2019 | 83 | No | INC | 6 | 17:15 | 23:00 |
| 299 | RT | Voltage Support | PGAE | Fresno | 9/30/2019 | -320 | No | DEC | 6 | 0:00 | 5:30 |
| 300 | RT | Voltage Support | PGAE | Humboldt | 9/3/2019 | 48 | No | INC | 1 | 23:45 | 0:00 |

Appendix A: Explanation by Example

All examples listed below are based on fictitious data.

Example 1: Exceptional Dispatch Instructions Prior to DAM

In this fictitious example, the CAISO issued an exceptional dispatch instruction for resource A to be committed at its physical minimum (Pmin) of 50 MW from hours ending 5 through 10 for generation procedure 7630. Similarly, the CAISO issued additional instructions to resources B and C for the same reason, as shown in Table 2. Generally, exceptional dispatches prior to the day-ahead market are commitments to minimum load. Here the dispatch levels are all at minimum load.

Table 2: Instructions Prior to Day-Ahead Market

| Date | Market | Resource | Location | Local Reliability Area (LRA) | Begin Time | End Time | Dispatch Level (MW) | Reason |
|-----------|--------|----------|----------|------------------------------|------------|----------|---------------------|--------|
| 01-Jul-09 | DA | A | SCE | LA BASIN | 05:00 | 10:00 | 50 | 7630 |
| 01-Jul-09 | DA | B | SCE | LA BASIN | 08:00 | 20:00 | 30 | 7630 |
| 01-Jul-09 | DA | C | SCE | LA BASIN | 09:00 | 23:00 | 20 | 7630 |

This data is summarized as shown in Table 3, which is the prescribed format specified in the FERC order on September 02, 2009. This summary classifies the data by reason, resource location, local reliability area, and trade date. The MW column in Table 3 is the range of MW; in this case the minimum instruction MW is 20 MW for resource C which occurs from hours ending 21 through 23. The maximum instruction occurs in hour ending 10. In this hour, resource A is committed at 50 MW, resource B is committed at 30 MW and resource C is committed at 20 MW. This adds up to 100 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. Commitments are broken out separately from energy dispatches. In the day-ahead however, the exceptional dispatches are nearly always just commitments, as in this example. The Begin Time column shows hour ending 5 as this was the hour ending for first dispatch of the day, and the End Time column shows hour ending 23, as this was the hour with last dispatch. It is also possible that there might be hours between the begin time and the end time where there might not be exceptional dispatch instructions for the given reason; meaning that the range between the begin time and end time can include null hours with no dispatch.

Table 3: FERC Summary of Instructions Prior to DAM

| Number | Market Type | Reason | Location | Local Reliability Area (LRA) | Trade Date | MW | Commitment | INC/DEC | Hour | Begin Time | End Time |
|--------|-------------|--------|----------|------------------------------|------------|--------|------------|---------|------|------------|----------|
| 1 | DA | 7630 | SCE | LA Basin | 1-Jul-09 | 20-100 | Yes | N/A | 19 | 05:00 | 23:00 |

Example 2: Incremental Exceptional Dispatch Instructions in RTM

In this fictitious example, the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 30 MW from hours ending 7 through 11 after completion of the day-ahead market for the transmission procedure 7110. This resource had no day-ahead award in those hours. The CAISO issued another exceptional dispatch instruction to resource B, to be dispatched at 40 MW from hours ending 8 through 9 in real-time for the transmission procedure 7110. This resource had a day-ahead schedule of 20 MW from the day-ahead market, which implies that this exceptional dispatch instruction was an incremental instruction and the exceptional dispatch MW was 20 MW. Similarly, the details of exceptional dispatch (ED) instruction for resource C are shown in Table 4.

Table 4: Incremental Exceptional Dispatch Instructions in RTM

| Date | Market | Resource | Location | Local Reliability Area (LRA) | Begin Time | End Time | Dispatch Level (MW) | Day-Ahead Award (MW) | Commitment | INC/DEC | ED (MW) | Reason |
|-----------|--------|----------|----------|------------------------------|------------|----------|---------------------|----------------------|------------|---------|---------|--------|
| 01-Jul-09 | RT | A | PG&E | Humboldt | 06:00 | 11:00 | 30 | 0 | Yes | INC | 30 | 7110 |
| 01-Jul-09 | RT | B | PG&E | Humboldt | 07:00 | 09:00 | 40 | 20 | No | INC | 20 | 7110 |
| 01-Jul-09 | RT | C | PG&E | Humboldt | 12:00 | 15:00 | 50 | 50 | No | INC | 0 | 7110 |
| 01-Jul-09 | RT | C | PG&E | Humboldt | 16:00 | 20:00 | 50 | 40 | No | INC | 10 | 7110 |

This data is summarized as shown in Table 5 and is classified by reason, resource location, local reliability area, and trade date. The MW column in Table 5 is the range of MW; in this case the minimum instruction MW is 0 MW for resource C which occurs from hours ending 13 through 15. The maximum instruction occurs in hours ending 8 & 9, as during these two hours both resources A and B have an ED MW of 30MW and 20MW, respectively. This adds up to 50 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. This column shows a commitment if there was a single commitment in the entire interval of exceptional dispatch. The Begin Time column shows the time of the first dispatch of the day. This is a time not a range. Similarly the End Time column shows a time and not a range. Exceptional dispatches occurred between these two times. Since there was a commitment between the begin time and end time then the Commitment column displays yes for the summary. Similarly, the INC/DEC column shows an INC as there was an incremental dispatch between the begin time and end time. As mentioned in the previous example it is possible that there might be hours between the begin time and end time where there were no exceptional dispatch instructions for the given reason.

Table 5: FERC Summary of ED Instructions in RTM

| Number | Market Type | Reason | Location | Local Reliability Area (LRA) | Trade Date | MW | Commitment | INC/DEC | Hour | Begin Time | End Time |
|--------|-------------|--------|----------|------------------------------|------------|------|------------|---------|------|------------|----------|
| 1 | RT | 7110 | PG&E | Humboldt | 1-Jul-09 | 0-50 | Yes | INC | 15 | 06:00 | 20:00 |

Example 3: Decremental Exceptional Dispatch Instructions in RTM

This example highlights decremental exceptional dispatch instructions in the real-time market. In this fictitious example the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 20 MW from hours ending 15 through 20 after completion of the day-ahead market for the transmission procedure 7430. The CAISO issued additional exceptional dispatch instructions for resources B and C; details of those instructions are shown in Table 6.

Table 6: Decremental Exceptional Dispatch Instructions in RTM

| Date | Market Type | Resource | Location | Local Reliability Area (LRA) | Begin Time | End Time | Dispatch Level (MW) | Day-Ahead Award (MW) | Commitment | INC/DEC | ED (MW) | Reason |
|-----------|-------------|----------|----------|------------------------------|------------|----------|---------------------|----------------------|------------|---------|---------|--------|
| 01-Jul-09 | RT | A | PG&E | Fresno | 15:00 | 20:00 | 20 | 0 | Yes | INC | 20 | 7430 |
| 01-Jul-09 | RT | B | PG&E | Fresno | 07:00 | 09:00 | 40 | 60 | No | DEC | 20 | 7430 |
| 01-Jul-09 | RT | C | PG&E | Fresno | 10:00 | 14:00 | 40 | 50 | No | DEC | 10 | 7430 |

This data is summarized according to FERC convention as shown in Table 7. This summary classifies the data by reason, resource location, local reliability area, and trade date. Please note that inc and dec are broken out separately. The inc entry is self-explanatory and similar to the previous example. Regarding the dec entry the MW column is the range of MW; in this case the minimum dec instruction is 10 MW (actually -10MW as it is a dec) for resource C which occurs from hours ending 10 through 14. The maximum instruction occurs from hours ending 7 through 9, when resource B was issued a dec instruction of 20 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time.

Table 7: FERC Summary of Decremental ED Instructions in RTM

| Number | Market Type | Reason | Location | Local Reliability Area (LRA) | Trade Date | MW | Commitment | INC/DEC | Hour | Begin Time | End Time |
|--------|-------------|--------|----------|------------------------------|------------|-------|------------|---------|------|------------|----------|
| 1 | RT | 7430 | PG&E | Fresno | 1-Jul-09 | 20 | Yes | INC | 6 | 15:00 | 20:00 |
| 1 | RT | 7430 | PG&E | Fresno | 1-Jul-09 | 10-20 | Yes | DEC | 8 | 07:00 | 14:00 |

ATTACHMENT C

**September 2019 Exceptional Dispatch Report
Chart 2 data**



Exceptional Dispatch Report

Table 2: September 2019

Market Quality and Renewable Integration

November 15, 2019

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Introduction

This report is filed pursuant to FERC’s September 2, 2009, and May 4, 2010, orders in ER08-1178. These orders require two monthly Exceptional Dispatch reports—one issued on the 15th of each month and one originally issued on the 30th of each month. Both Table 1 and Table 2 reports will be issued on the 15th of each month due to the availability of necessary data. This report provides data on the frequency, reasons and costs for Exceptional Dispatches issued in September 2019.

This report contains a price impact analysis as prescribed by FERC in its September 2 order. The price impact analysis for the month of September is presented in Appendix B. This report also includes mitigation analysis for September 2019 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 September is presented in Appendix C.

The Nature of Exceptional Dispatch

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

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

Additional reasons for exceptional dispatch instructions in 2019 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 established to prevent instability, uncontrolled separation or cascading as described in operating procedure 3100. System Operating Limits (SOL) are the facility ratings, system voltage limits, transient stability limits, and voltage stability limits used in the operating horizon, any of which can be the most restrictive limit at any point in time, pre – or post – contingency. Control Points (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 September, 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 September 2019. 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.

Table 1: Exceptional Dispatches in September 2019

| California Independent System Operator Corporation Exceptional Dispatch Report November 15, 2019 | | | | | | | | | | | | | | | | | | | | | |
|--|-------------|---------------------------------------|----------|------------------------|------------|----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|------------|----------|--------|
| Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019 | | | | | | | | | | | | | | | | | | | | | |
| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 | CC6620 |
| 1 | RT | Bridging Schedules | SCE | LA Basin | 9/11/2019 | 20 | Yes | INC | 2 | 22:00 | 0:00 | 191.94 | 6449.96 | 0.00 | -24588.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | RT | Fast Start Unit Management | PGAE | Bay Area | 9/2/2019 | 0 | No | INC | 2 | 4:45 | 5:50 | 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 | PGAE | Kern | 9/26/2019 | 0 | No | DEC | 1 | 13:05 | 13:35 | -6.94 | 0.00 | 0.00 | 177.18 | -0.86 | 0.00 | 0.37 | 0.00 | 0.00 | 0.00 |
| 4 | RT | Fast Start Unit Management | SCE | LA Basin | 9/2/2019 | 0 | No | INC | 1 | 5:45 | 6:15 | 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 | 9/23/2019 | 0 | No | INC | 1 | 22:45 | 23:45 | -23.45 | 793.94 | 9.78 | 0.00 | -23.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | RT | Fast Start Unit Management | SDGE | San Diego-IV | 9/26/2019 | 0 | No | INC | 1 | 13:50 | 14:45 | -20.00 | 1877.73 | 112.81 | 0.00 | -20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | RT | Incomplete or Inaccurate Transmission | PGAE | NCNB | 9/23/2019 | 75 | No | DEC | 3 | 17:20 | 20:00 | -3.69 | 0.00 | 0.00 | 137.53 | -3.75 | 0.00 | 139.52 | 0.00 | -1021.64 | 0.00 |
| 8 | RT | Incomplete or Inaccurate Transmission | PGAE | Stockton | 9/26/2019 | 89 | No | DEC | 4 | 16:45 | 20:00 | -7.95 | -17422.00 | 0.00 | 270.00 | -7.18 | 0.00 | 238.23 | 0.00 | -341.07 | 0.00 |
| 9 | RT | Load Forecast Uncertainty | Intertie | NA | 9/2/2019 | 124 | No | DEC | 1 | 18:00 | 19:00 | 61.25 | 0.00 | 0.00 | -3821.07 | -26.00 | 0.00 | 26.00 | 0.00 | 0.00 | 0.00 |
| 10 | RT | Load Forecast Uncertainty | Intertie | NA | 9/2/2019 | 50 - 300 | No | INC | 3 | 17:00 | 20:00 | 123.25 | 0.00 | 0.00 | -4678.03 | 73.25 | -2938.75 | 0.00 | -14861.63 | 0.00 | 0.00 |
| 11 | RT | Load Forecast Uncertainty | Intertie | NA | 9/3/2019 | 50 - 103 | No | DEC | 2 | 17:00 | 19:00 | 151.00 | 0.00 | 0.00 | -10574.35 | -119.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | RT | Load Forecast Uncertainty | Intertie | NA | 9/3/2019 | 50 - 239 | No | INC | 3 | 17:00 | 20:00 | 406.00 | 0.00 | 0.00 | -17749.89 | 265.83 | -11805.32 | 0.00 | -153486.04 | 0.00 | 0.00 |
| 13 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/2/2019 | 120 | No | INC | 1 | 2:30 | 3:25 | 115.40 | 2647.83 | 5160.62 | -4559.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/3/2019 | 133 | No | INC | 2 | 15:00 | 17:00 | 23.08 | 13347.87 | 0.00 | -922.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/4/2019 | 20 | No | DEC | 2 | 18:00 | 20:00 | -11.74 | 0.00 | 0.00 | 497.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/4/2019 | 20 - 198 | No | INC | 9 | 12:35 | 21:00 | 18.07 | 4572.11 | 0.00 | -1603.45 | 0.00 | 0.00 | 0.00 | -97.69 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
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Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|---------------------------|----------|------------------------|------------|----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|------------|------------------|------------|------------|----------|--------|--------|
| 17 | RT | Load Forecast Uncertainty | PGAE | Bay Area | 9/23/2019 | 175 | No | INC | 7 | 15:00 | 22:00 | 87.49 | 91435.42 | 32612.60 | -1718.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/4/2019 | 21 - 407 | No | INC | 6 | 15:25 | 21:00 | 149.70 | 11091.52 | 275.66 | -31894.57 | 12.33 | -761.96 | 0.00 | -92.90 | 0.00 | 0.00 |
| 19 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/15/2019 | 83 | No | INC | 2 | 16:05 | 18:00 | 102.98 | 2878.56 | 0.00 | -5737.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/23/2019 | 83 - 400 | No | INC | 3 | 21:15 | 0:00 | 144.22 | 6044.99 | 0.00 | -4352.53 | 30.46 | -979.47 | 0.00 | -368.94 | 0.00 | 0.00 |
| 21 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/24/2019 | 0 - 83 | No | INC | 1 | 0:00 | 0:45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/25/2019 | 83 | No | INC | 2 | 22:30 | 0:00 | -16.29 | 9129.16 | 0.00 | 544.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | RT | Load Forecast Uncertainty | PGAE | Fresno | 9/26/2019 | 83 | Yes | INC | 1 | 0:00 | 0:30 | 0.01 | 3043.05 | 0.00 | -0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | RT | Load Forecast Uncertainty | PGAE | NA | 9/3/2019 | 50 | No | DEC | 10 | 11:55 | 21:00 | 78.91 | -5087.00 | 0.00 | -2342.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | RT | Load Forecast Uncertainty | PGAE | NA | 9/26/2019 | 150 | No | DEC | 1 | 19:00 | 20:00 | -10.55 | 0.00 | 817.26 | -75.52 | -20.39 | 0.00 | 286.46 | 0.00 | 0.00 | 0.00 |
| 26 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/3/2019 | 50 - 54 | No | INC | 11 | 13:00 | 0:00 | 4639.71 | 64242.59 | 3392.51 | -373362.13 | 124.63 | -11338.91 | 0.00 | -9.66 | 0.00 | 0.00 |
| 27 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/4/2019 | 50 - 650 | No | INC | 24 | 0:00 | 0:00 | 2863.93 | 152473.06 | 0.00 | -318730.13 | 211.69 | -17774.67 | 0.00 | -4911.23 | 0.00 | 0.00 |
| 28 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/6/2019 | 50 | No | INC | 22 | 0:00 | 22:00 | 12.43 | 287240.03 | 0.00 | 233.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 29 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/13/2019 | 50 | No | INC | 10 | 14:00 | 0:00 | 57.29 | 97919.90 | 0.00 | -1820.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/14/2019 | 50 | No | INC | 7 | 14:00 | 21:00 | 6.54 | 20674.94 | 0.00 | -281.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 31 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/23/2019 | 50 | No | INC | 9 | 15:30 | 0:00 | 422.92 | 0.00 | 0.00 | -13255.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 32 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/24/2019 | 50 | No | INC | 24 | 0:00 | 0:00 | 4.17 | 79134.00 | 0.00 | -108.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 33 | RT | Load Forecast Uncertainty | SCE | Big Creek-Ventura | 9/25/2019 | 50 | No | INC | 22 | 0:00 | 22:00 | -190.95 | 349229.35 | 0.00 | 9550.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 34 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/1/2019 | 70 | No | INC | 3 | 21:00 | 0:00 | 27.11 | 39425.36 | 0.00 | -1328.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 | CC6620 |
|--------|-------------|---------------------------|----------|------------------------|------------|----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|------------|------------------|------------|------------|--------|--------|--------|
| 35 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/2/2019 | 70 | No | INC | 16 | 0:00 | 16:00 | 27.49 | 197557.76 | 0.00 | -1251.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 36 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/3/2019 | 20 | No | DEC | 5 | 16:50 | 21:00 | -41.91 | 0.00 | 0.00 | 16555.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 37 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/3/2019 | 10 - 70 | No | INC | 9 | 15:00 | 0:00 | 75.21 | 23949.44 | 0.00 | -3353.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 38 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/4/2019 | 10 - 170 | Yes | INC | 11 | 13:00 | 0:00 | 2100.44 | 302593.27 | 65814.84 | -415731.26 | 1410.47 | -307321.54 | 0.00 | 0.00 | 0.00 | 0.00 |
| 39 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/5/2019 | 10 | Yes | INC | 24 | 0:00 | 0:00 | -60.04 | 69283.92 | 0.00 | -21463.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 40 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/6/2019 | 70 | No | INC | 24 | 0:00 | 0:00 | -25.58 | 257065.79 | 0.00 | 1113.99 | 12.06 | -831.29 | 0.00 | 0.00 | 0.00 | 0.00 |
| 41 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/9/2019 | 10 - 20 | No | INC | 7 | 17:00 | 0:00 | 173.11 | 33792.19 | 0.00 | -13636.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 42 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/11/2019 | 10 | No | INC | 1 | 23:00 | 0:00 | 0.00 | 2304.23 | 5127.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 43 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/12/2019 | 10 - 20 | Yes | INC | 24 | 0:00 | 0:00 | 287.57 | 153777.15 | 0.00 | -45431.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 44 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/13/2019 | 10 - 130 | No | INC | 19 | 5:00 | 0:00 | 579.68 | 178785.85 | 14396.67 | -45484.80 | 317.60 | -31089.92 | 0.00 | 0.00 | 0.00 | 0.00 |
| 45 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/14/2019 | 20 - 130 | No | INC | 21 | 0:00 | 21:00 | 13.58 | 34899.09 | 0.00 | 1852.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 46 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/24/2019 | 10 - 130 | No | INC | 24 | 0:00 | 0:00 | 460.00 | 142812.43 | 0.00 | -29580.32 | 363.57 | -26227.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| 47 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/25/2019 | 70 - 130 | No | INC | 24 | 0:00 | 0:00 | 220.98 | 27789.06 | 0.00 | -7249.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 48 | RT | Load Forecast Uncertainty | SCE | LA Basin | 9/26/2019 | 130 | No | INC | 16 | 0:00 | 16:00 | 0.00 | 199750.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 49 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/3/2019 | 21 | No | INC | 5 | 16:00 | 21:00 | 0.33 | 18566.89 | 0.00 | -21.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 50 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/4/2019 | 24 - 40 | No | DEC | 7 | 14:00 | 21:00 | -113.11 | 0.00 | 0.00 | 2857.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 51 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/4/2019 | 24 - 112 | No | INC | 12 | 9:30 | 21:00 | -93.35 | 17164.37 | 1030.43 | 4135.55 | 0.13 | -6.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 52 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/5/2019 | 24 - 95 | No | DEC | 8 | 13:30 | 21:00 | -240.19 | 7125.52 | 0.00 | -800.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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

Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|--|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|---------|--------|--------|
| 53 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/5/2019 | 95 | No | INC | 4 | 12:50 | 16:00 | 63.83 | 13182.84 | 0.00 | -19856.67 | 6.56 | -300.43 | 0.00 | -312.38 | 0.00 | 0.00 |
| 54 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 9/23/2019 | 155 | No | INC | 7 | 17:00 | 0:00 | 1314.12 | 0.00 | 0.00 | -43705.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 55 | RT | Load Pull | PGAE | Fresno | 9/5/2019 | 83 | No | INC | 2 | 15:45 | 17:00 | 55.40 | 7319.78 | 0.00 | -2173.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 56 | RT | Load Pull | SCE | LA Basin | 9/19/2019 | 20 | No | INC | 4 | 18:00 | 22:00 | 0.00 | 13072.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 57 | RT | Load Pull | SCE | LA Basin | 9/24/2019 | 240 | No | INC | 7 | 16:50 | 23:00 | 367.39 | 106533.13 | 0.00 | -26351.55 | 363.57 | -26227.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| 58 | RT | Load Pull | SCE | LA Basin | 9/25/2019 | 240 | No | INC | 9 | 13:25 | 22:00 | 425.16 | 23633.10 | 0.00 | -28902.94 | 355.42 | -24386.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| 59 | RT | Market Disruption | PGAE | Bay Area | 9/4/2019 | 185 | No | INC | 1 | 17:40 | 17:50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 60 | RT | Market Disruption | SCE | LA Basin | 9/4/2019 | 263 | No | INC | 2 | 17:30 | 19:00 | 21.57 | -2300.16 | 1712.15 | -5499.01 | 2.68 | -2807.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| 61 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/1/2019 | 32 - 60 | No | DEC | 4 | 13:00 | 16:40 | 2.49 | -2123.39 | 0.00 | -69.79 | -0.32 | 0.00 | 3.59 | 0.00 | 0.00 | 0.00 |
| 62 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/1/2019 | 32 | No | INC | 13 | 0:00 | 13:00 | -0.17 | 2445.28 | 0.00 | 4.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 63 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/2/2019 | 28 - 42 | No | INC | 3 | 21:00 | 0:00 | -2.41 | 2750.94 | 0.00 | 107.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 64 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/3/2019 | 14 - 64 | No | DEC | 11 | 11:00 | 22:00 | -15.59 | -5809.21 | 0.00 | 262.36 | -7.11 | 0.00 | 52.67 | 0.00 | 0.00 | 0.00 |
| 65 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/3/2019 | 14 - 48 | No | INC | 22 | 0:00 | 22:00 | 1.17 | 6724.52 | 0.00 | -98.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 66 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/4/2019 | 28 | No | INC | 1 | 23:35 | 0:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 67 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/5/2019 | 28 - 30 | No | INC | 12 | 0:00 | 11:15 | 3.76 | 2613.00 | 0.00 | -207.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 68 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/6/2019 | 28 - 48 | No | DEC | 7 | 16:00 | 23:00 | -9.84 | -4908.59 | 0.00 | 117.66 | -7.43 | 0.00 | 57.58 | 0.00 | 0.00 | 0.00 |
| 69 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/6/2019 | 14 - 48 | No | INC | 4 | 20:00 | 0:00 | -8.60 | 4397.33 | 0.00 | 195.68 | -3.48 | 0.00 | 38.92 | 0.00 | 0.00 | 0.00 |
| 70 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/7/2019 | 14 - 28 | No | INC | 24 | 0:00 | 0:00 | 1.77 | 14793.37 | 0.00 | -60.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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

Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|--|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|----------|------------------|------------|------------|--------|--------|--------|
| 71 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/8/2019 | 14 | No | DEC | 5 | 19:35 | 0:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 72 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/8/2019 | 14 - 28 | No | INC | 24 | 0:00 | 0:00 | 8.86 | 21546.87 | 0.00 | -284.72 | 1.96 | -61.75 | 0.00 | 0.00 | 0.00 | 0.00 |
| 73 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/9/2019 | 14 | No | DEC | 6 | 0:00 | 5:55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 74 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/9/2019 | 28 | No | INC | 1 | 0:00 | 1:00 | -0.14 | 1286.38 | 0.00 | 3.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 75 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/22/2019 | 30 | No | INC | 19 | 5:10 | 0:00 | 1.32 | 11819.44 | 0.00 | -41.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 76 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/23/2019 | 15 - 30 | No | DEC | 21 | 0:00 | 21:00 | 8.95 | 0.00 | 0.00 | -222.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 77 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/23/2019 | 30 - 32 | No | INC | 18 | 6:00 | 0:00 | 12.06 | 7530.96 | 0.00 | -338.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 78 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/24/2019 | 16 - 30 | No | DEC | 21 | 0:30 | 21:00 | -24.25 | -8094.85 | 0.00 | 204.84 | -20.94 | 0.00 | 80.26 | 0.00 | 0.00 | 0.00 |
| 79 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/24/2019 | 16 - 45 | No | INC | 24 | 0:00 | 0:00 | 16.76 | 24071.97 | 0.00 | -557.38 | -1.50 | 0.00 | 18.25 | 0.00 | 0.00 | 0.00 |
| 80 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/25/2019 | 30 | No | DEC | 8 | 13:00 | 21:00 | -2.60 | -11755.72 | 0.00 | 145.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 81 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/25/2019 | 30 - 48 | No | INC | 24 | 0:00 | 0:00 | 1.54 | 20008.07 | 0.00 | -43.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 82 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/26/2019 | 32 | No | DEC | 3 | 17:00 | 20:00 | 1.19 | 0.00 | 0.00 | -34.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 83 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/26/2019 | 0 - 48 | No | INC | 24 | 0:00 | 0:00 | 1.46 | 26410.08 | 0.00 | -239.04 | -7.41 | 0.00 | 29.08 | 0.00 | 0.00 | 0.00 |
| 84 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/27/2019 | 30 - 32 | No | INC | 24 | 0:00 | 0:00 | 0.85 | 38578.33 | 0.00 | -23.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 85 | RT | Operating Procedure Number and Constraint (7110) | PGAE | Humboldt | 9/28/2019 | 30 | No | INC | 8 | 0:00 | 8:00 | 0.00 | 10281.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 86 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/4/2019 | 83 | No | INC | 1 | 22:00 | 23:00 | 26.80 | 0.00 | 0.00 | -1209.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 87 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/25/2019 | 70 | No | DEC | 1 | 16:15 | 17:00 | -8.60 | 0.00 | 0.00 | -448.53 | -8.19 | 0.00 | -468.12 | 0.00 | 0.00 | 0.00 |
| 88 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/27/2019 | 74 | No | DEC | 1 | 17:00 | 18:00 | 0.27 | 0.00 | 0.00 | -5.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
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Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|--|----------|------------------------|------------|--------------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|--------|--------|--------|
| 89 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/27/2019 | 74 | No | INC | 9 | 11:15 | 20:00 | 16.73 | 0.00 | 0.00 | -2262.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 90 | RT | Operating Procedure Number and Constraint (7430) | PGAE | Fresno | 9/29/2019 | 70 - 75 | No | INC | 15 | 5:35 | 20:00 | 28.26 | 0.00 | 0.00 | -7483.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 91 | RT | Operating Procedure Number and Constraint (7450) | PGAE | Kern | 9/5/2019 | 33 | No | INC | 6 | 16:15 | 22:00 | 3.35 | 11170.47 | 5885.93 | -158.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 92 | RT | Operating Procedure Number and Constraint (7630) | SCE | LA Basin | 9/11/2019 | 190 | No | INC | 7 | 15:15 | 22:00 | 19.12 | 12899.92 | 0.00 | -1631.04 | 2.22 | -315.72 | 0.00 | 0.00 | 0.00 | 0.00 |
| 93 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/1/2019 | 474 | No | INC | 5 | 15:15 | 20:00 | 247.32 | 8289.38 | 0.00 | -11004.79 | -0.46 | 0.00 | 15.50 | 0.00 | 0.00 | 0.00 |
| 94 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/3/2019 | 475 | No | INC | 2 | 22:15 | 0:00 | 43.32 | 6198.65 | 0.00 | -1964.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/4/2019 | 450 - 475.01 | No | INC | 12 | 12:45 | 0:00 | 21.00 | 42208.27 | 0.00 | -2824.11 | -9.02 | 0.00 | 408.12 | 0.00 | 0.00 | 0.00 |
| 96 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/5/2019 | 450 - 475 | No | INC | 2 | 0:00 | 1:30 | 3.91 | 9314.76 | 0.00 | -223.63 | -11.98 | 0.00 | 474.14 | 0.00 | 0.00 | 0.00 |
| 97 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/6/2019 | 450 - 475 | No | INC | 7 | 17:40 | 0:00 | -125.93 | 16563.57 | 0.00 | 4421.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 98 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/7/2019 | 450 - 475 | No | INC | 22 | 0:00 | 22:00 | 159.26 | 3629.00 | 0.00 | -11506.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 99 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/12/2019 | 420 | No | DEC | 2 | 18:00 | 20:00 | -0.06 | 0.00 | 0.00 | 2.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/12/2019 | 420 - 450 | No | INC | 7 | 17:30 | 0:00 | -40.12 | 2546.79 | 0.00 | 1292.21 | -32.09 | 0.00 | 1063.74 | 0.00 | 0.00 | 0.00 |
| 101 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/13/2019 | 410 - 420 | No | DEC | 8 | 16:00 | 23:30 | 503.75 | -15812.79 | 0.00 | -17758.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 102 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/13/2019 | 420 - 440 | No | INC | 24 | 0:00 | 0:00 | -6.61 | -418.59 | 0.00 | 240.98 | -2.77 | 0.00 | 101.44 | 0.00 | 0.00 | 0.00 |
| 103 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/14/2019 | 360 - 410 | No | DEC | 9 | 15:30 | 0:00 | -10.39 | -20181.54 | 0.00 | -155.64 | -15.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 104 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/14/2019 | 430 - 450 | No | INC | 16 | 0:00 | 15:30 | -50.70 | 3460.74 | 0.00 | 1394.35 | -14.04 | 0.00 | 425.75 | 0.00 | 0.00 | 0.00 |
| 105 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/15/2019 | 410 | No | DEC | 1 | 0:00 | 0:30 | 0.00 | -2600.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 106 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/15/2019 | 450 | No | INC | 2 | 0:30 | 1:45 | 16.82 | -2600.96 | 0.00 | -535.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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

Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|--|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|--------|--------|--------|
| 107 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/17/2019 | 450 | No | DEC | 1 | 19:00 | 20:00 | -23.48 | 0.00 | 0.00 | 763.90 | -6.25 | 0.00 | 198.87 | 0.00 | 0.00 | 0.00 |
| 108 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/17/2019 | 475 | No | INC | 3 | 16:55 | 19:00 | -26.64 | -427.10 | 0.00 | 1191.99 | -1.82 | 0.00 | 58.01 | 0.00 | 0.00 | 0.00 |
| 109 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/21/2019 | 430 - 474 | No | DEC | 7 | 17:00 | 0:00 | -6.24 | 0.00 | 0.00 | 37.41 | -17.32 | 0.00 | 457.83 | 0.00 | 0.00 | 0.00 |
| 110 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/21/2019 | 430 - 474 | No | INC | 8 | 15:45 | 23:00 | -8.48 | 4582.54 | 0.00 | 215.75 | -1.48 | 0.00 | 39.13 | 0.00 | 0.00 | 0.00 |
| 111 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/22/2019 | 430 - 475 | No | DEC | 7 | 15:00 | 22:00 | 11.79 | -4394.73 | 0.00 | -386.56 | -9.38 | 0.00 | 265.13 | 0.00 | 0.00 | 0.00 |
| 112 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/22/2019 | 430 - 475 | No | INC | 24 | 0:00 | 0:00 | 42.13 | 14788.91 | 0.00 | -1228.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 113 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/23/2019 | 430 - 460 | No | DEC | 7 | 17:15 | 0:00 | -39.93 | -2632.76 | 0.00 | 1294.85 | -11.25 | 0.00 | 400.73 | 0.00 | 0.00 | 0.00 |
| 114 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/23/2019 | 430 - 475 | No | INC | 15 | 7:00 | 22:00 | 17.09 | 21262.98 | 0.00 | 180.51 | -4.55 | 0.00 | 150.31 | 0.00 | 0.00 | 0.00 |
| 115 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/24/2019 | 375 - 470 | No | DEC | 24 | 0:00 | 0:00 | -14.43 | -38139.98 | 0.00 | 494.80 | -4.20 | 0.00 | 113.36 | 0.00 | 0.00 | 0.00 |
| 116 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/24/2019 | 470 | No | INC | 2 | 2:00 | 3:30 | 16.10 | -2165.26 | 0.00 | -260.97 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 117 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/25/2019 | 350 - 411 | No | DEC | 24 | 0:00 | 0:00 | 88.50 | -39952.59 | 0.00 | -4951.02 | -3.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 118 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/25/2019 | 411 - 476 | No | INC | 15 | 0:25 | 15:00 | 120.98 | 11142.11 | 0.00 | -2901.48 | -2.25 | 0.00 | 74.86 | 0.00 | 0.00 | 0.00 |
| 119 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/26/2019 | 370 - 405 | No | DEC | 5 | 0:00 | 4:45 | 78.33 | -23808.80 | 0.00 | -1918.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 120 | RT | Operating Procedure Number and Constraint (7720) | SCE | NA | 9/26/2019 | 430 - 460 | No | INC | 16 | 4:45 | 20:00 | 62.84 | 24301.19 | 0.00 | -1835.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 121 | RT | Operating Procedure Number and Constraint (7750) | SCE | LA Basin | 9/25/2019 | 436 | No | DEC | 8 | 12:00 | 20:00 | 274.61 | 0.00 | 0.00 | -13298.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 122 | RT | Operating Procedure Number and Constraint (7750) | SCE | LA Basin | 9/25/2019 | 436 | No | INC | 3 | 9:25 | 12:00 | 100.43 | 0.00 | 0.00 | -3477.20 | 90.74 | -3045.33 | 0.00 | 0.00 | 0.00 | 0.00 |
| 123 | RT | Operating Procedure Number and Constraint (7820) | SDGE | San Diego-IV | 9/26/2019 | 24 | No | INC | 3 | 9:45 | 12:30 | 41.66 | 951.53 | 0.00 | -1824.84 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 124 | RT | Other Reliability Requirement | PG&E | Bay Area | 9/4/2019 | 470 | No | DEC | 4 | 6:35 | 10:00 | -244.35 | 0.00 | 0.00 | 7849.52 | -64.51 | 0.00 | 2228.47 | 0.00 | 0.00 | 0.00 |

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

Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 | CC6620 |
|--------|-------------|-------------------------------|----------|------------------------|------------|--------|------------|---------|-------|------------|----------|-----------|---------------|---------------|--------|------------------|------------|------------|--------|--------|--------|
| 125 | RT | Other Reliability Requirement | PGAE | Fresno | 9/1/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -0.84 | 0.00 | 0.00 | 60.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 126 | RT | Other Reliability Requirement | PGAE | Fresno | 9/2/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -12.03 | 0.00 | 0.00 | 495.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 127 | RT | Other Reliability Requirement | PGAE | Fresno | 9/3/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -1.80 | 0.00 | 0.00 | 73.97 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 128 | RT | Other Reliability Requirement | PGAE | Fresno | 9/4/2019 | 4 - 12 | No | INC | 20 | 4:45 | 0:00 | 0.33 | 0.00 | 0.00 | 537.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 129 | RT | Other Reliability Requirement | PGAE | Fresno | 9/5/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -11.51 | 0.00 | 0.00 | 430.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 130 | RT | Other Reliability Requirement | PGAE | Fresno | 9/6/2019 | 4 - 12 | No | INC | 20 | 4:20 | 0:00 | 0.95 | 0.00 | 0.00 | -1.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 131 | RT | Other Reliability Requirement | PGAE | Fresno | 9/7/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 1.33 | 0.00 | 0.00 | -11.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 132 | RT | Other Reliability Requirement | PGAE | Fresno | 9/8/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -3.31 | 0.00 | 0.00 | -68.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 133 | RT | Other Reliability Requirement | PGAE | Fresno | 9/9/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -0.99 | 0.00 | 0.00 | 47.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 134 | RT | Other Reliability Requirement | PGAE | Fresno | 9/10/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 2.89 | 0.00 | 0.00 | -49.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 135 | RT | Other Reliability Requirement | PGAE | Fresno | 9/11/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 1.34 | 0.00 | 0.00 | -8.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 136 | RT | Other Reliability Requirement | PGAE | Fresno | 9/12/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 0.39 | 0.00 | 0.00 | 147.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 137 | RT | Other Reliability Requirement | PGAE | Fresno | 9/13/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 1.22 | 0.00 | 0.00 | -13.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 138 | RT | Other Reliability Requirement | PGAE | Fresno | 9/14/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -2.00 | 0.00 | 0.00 | 78.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 139 | RT | Other Reliability Requirement | PGAE | Fresno | 9/15/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -0.88 | 0.00 | 0.00 | 53.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 140 | RT | Other Reliability Requirement | PGAE | Fresno | 9/16/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -11.49 | 0.00 | 0.00 | 312.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 141 | RT | Other Reliability Requirement | PGAE | Fresno | 9/17/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 1.83 | 0.00 | 0.00 | -21.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 142 | RT | Other Reliability Requirement | PGAE | Fresno | 9/18/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -7.18 | 0.00 | 0.00 | 75.98 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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

Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|-------------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|----------|------------------|------------|------------|--------|--------|--------|
| 143 | RT | Other Reliability Requirement | PGAE | Fresno | 9/19/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -1.82 | 0.00 | 0.00 | 18.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 144 | RT | Other Reliability Requirement | PGAE | Fresno | 9/20/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -2.93 | 0.00 | 0.00 | -198.40 | 1.27 | -25.17 | 0.00 | 0.00 | 0.00 | 0.00 |
| 145 | RT | Other Reliability Requirement | PGAE | Fresno | 9/21/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 2.38 | 0.00 | 0.00 | -65.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 146 | RT | Other Reliability Requirement | PGAE | Fresno | 9/22/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -2.83 | 0.00 | 0.00 | 27.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 147 | RT | Other Reliability Requirement | PGAE | Fresno | 9/23/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -1.18 | 0.00 | 0.00 | 28.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 148 | RT | Other Reliability Requirement | PGAE | Fresno | 9/24/2019 | 200 | No | DEC | 2 | 16:45 | 18:00 | 147.04 | 0.00 | 0.00 | -5675.49 | 168.19 | -6590.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| 149 | RT | Other Reliability Requirement | PGAE | Fresno | 9/24/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 0.76 | 0.00 | 0.00 | -7.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 150 | RT | Other Reliability Requirement | PGAE | Fresno | 9/25/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 1.12 | 0.00 | 0.00 | -29.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 151 | RT | Other Reliability Requirement | PGAE | Fresno | 9/26/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 6.36 | 0.00 | 0.00 | -222.71 | 6.77 | -232.42 | 0.00 | 0.00 | 0.00 | 0.00 |
| 152 | RT | Other Reliability Requirement | PGAE | Fresno | 9/27/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 0.16 | 0.00 | 0.00 | -9.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 153 | RT | Other Reliability Requirement | PGAE | Fresno | 9/28/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -2.84 | 0.00 | 0.00 | -30.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 154 | RT | Other Reliability Requirement | PGAE | Fresno | 9/29/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | 3.86 | 0.00 | 0.00 | -227.16 | 3.27 | -91.54 | 0.00 | 0.00 | 0.00 | 0.00 |
| 155 | RT | Other Reliability Requirement | PGAE | Fresno | 9/30/2019 | 4 - 12 | No | INC | 24 | 0:00 | 0:00 | -11.09 | 0.00 | 0.00 | -617.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 156 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/1/2019 | 15 - 60 | No | DEC | 8 | 16:40 | 0:00 | 19.59 | -13149.25 | 0.00 | -751.32 | -5.28 | 0.00 | 59.78 | 0.00 | 0.00 | 0.00 |
| 157 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/1/2019 | 32 - 60 | No | INC | 2 | 22:00 | 23:45 | -0.20 | 611.32 | 0.00 | 6.47 | -1.28 | 0.00 | 14.02 | 0.00 | 0.00 | 0.00 |
| 158 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/4/2019 | 45 | No | DEC | 4 | 17:10 | 21:00 | -6.91 | -2658.78 | 0.00 | 81.96 | -6.95 | 0.00 | 83.48 | 0.00 | 0.00 | 0.00 |
| 159 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/5/2019 | 48 | No | DEC | 3 | 18:00 | 21:00 | -25.75 | 0.00 | 0.00 | 833.75 | -3.50 | 0.00 | 20.51 | 0.00 | 0.00 | 0.00 |
| 160 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/5/2019 | 15 - 48 | No | INC | 3 | 21:00 | 0:00 | -18.54 | 1796.44 | 0.00 | 741.46 | -3.48 | 0.00 | 27.64 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
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Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|-------------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|---------|------------------|------------|------------|--------|--------|--------|
| 161 | RT | Other Reliability Requirement | PGAE | Humboldt | 9/6/2019 | 15 | No | INC | 1 | 0:00 | 0:30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 162 | RT | Other Reliability Requirement | PGAE | NA | 9/1/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -13.09 | 0.00 | 0.00 | 451.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 163 | RT | Other Reliability Requirement | PGAE | NA | 9/2/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -41.74 | 0.00 | 0.00 | 1461.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 164 | RT | Other Reliability Requirement | PGAE | NA | 9/3/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -18.54 | 0.00 | 0.00 | 563.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 165 | RT | Other Reliability Requirement | PGAE | NA | 9/4/2019 | 38 | No | INC | 20 | 4:45 | 0:00 | -54.72 | 0.00 | 0.00 | 2846.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 166 | RT | Other Reliability Requirement | PGAE | NA | 9/5/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -71.33 | 0.00 | 0.00 | 743.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 167 | RT | Other Reliability Requirement | PGAE | NA | 9/6/2019 | 38 | No | INC | 20 | 4:30 | 0:00 | 12.01 | 0.00 | 0.00 | -261.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 168 | RT | Other Reliability Requirement | PGAE | NA | 9/7/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 7.29 | 0.00 | 0.00 | -145.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 169 | RT | Other Reliability Requirement | PGAE | NA | 9/8/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 20.18 | 0.00 | 0.00 | -667.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 170 | RT | Other Reliability Requirement | PGAE | NA | 9/9/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 18.64 | 0.00 | 0.00 | -436.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 171 | RT | Other Reliability Requirement | PGAE | NA | 9/10/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 18.94 | 0.00 | 0.00 | -358.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 172 | RT | Other Reliability Requirement | PGAE | NA | 9/11/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 12.27 | 0.00 | 0.00 | -278.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 173 | RT | Other Reliability Requirement | PGAE | NA | 9/12/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 13.59 | 0.00 | 0.00 | -297.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 174 | RT | Other Reliability Requirement | PGAE | NA | 9/13/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 1.77 | 0.00 | 0.00 | -40.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 175 | RT | Other Reliability Requirement | PGAE | NA | 9/14/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -5.30 | 0.00 | 0.00 | 158.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 176 | RT | Other Reliability Requirement | PGAE | NA | 9/15/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -9.94 | 0.00 | 0.00 | 356.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 177 | RT | Other Reliability Requirement | PGAE | NA | 9/16/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -5.06 | 0.00 | 0.00 | 304.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 178 | RT | Other Reliability Requirement | PGAE | NA | 9/17/2019 | 32 - 38 | No | INC | 24 | 0:00 | 0:00 | -8.83 | 4357.27 | 4836.52 | 88.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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

Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 | CC6620 |
|--------|-------------|-------------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|---------|------------------|------------|------------|--------|--------|--------|
| 179 | RT | Other Reliability Requirement | PGAE | NA | 9/18/2019 | 32 - 38 | No | INC | 24 | 0:00 | 0:00 | -6.45 | 1406.62 | 0.00 | 218.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 180 | RT | Other Reliability Requirement | PGAE | NA | 9/19/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -23.56 | 0.00 | 0.00 | 603.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 181 | RT | Other Reliability Requirement | PGAE | NA | 9/20/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -6.05 | 0.00 | 0.00 | 78.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 182 | RT | Other Reliability Requirement | PGAE | NA | 9/21/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -3.82 | 0.00 | 0.00 | 124.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 183 | RT | Other Reliability Requirement | PGAE | NA | 9/22/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -21.12 | 0.00 | 0.00 | 364.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 184 | RT | Other Reliability Requirement | PGAE | NA | 9/23/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -2.86 | 0.00 | 0.00 | 148.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 185 | RT | Other Reliability Requirement | PGAE | NA | 9/24/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 0.82 | 0.00 | 0.00 | -15.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 186 | RT | Other Reliability Requirement | PGAE | NA | 9/25/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 2.47 | 0.00 | 0.00 | -101.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 187 | RT | Other Reliability Requirement | PGAE | NA | 9/26/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | 20.31 | 0.00 | 0.00 | -508.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 188 | RT | Other Reliability Requirement | PGAE | NA | 9/27/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -4.43 | 0.00 | 0.00 | 126.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 189 | RT | Other Reliability Requirement | PGAE | NA | 9/28/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -4.42 | 0.00 | 0.00 | 74.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 190 | RT | Other Reliability Requirement | PGAE | NA | 9/29/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -8.26 | 0.00 | 0.00 | 127.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 191 | RT | Other Reliability Requirement | PGAE | NA | 9/30/2019 | 38 | No | INC | 24 | 0:00 | 0:00 | -7.52 | 0.00 | 0.00 | 26.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 192 | RT | Other Reliability Requirement | PGAE | NCNB | 9/30/2019 | 70 | No | DEC | 8 | 12:30 | 20:00 | -7.18 | 0.00 | 0.00 | 12.48 | -5.50 | 0.00 | -143.00 | 0.00 | 0.00 | 0.00 |
| 193 | RT | Other Reliability Requirement | PGAE | NCNB | 9/30/2019 | 70 | No | INC | 1 | 18:00 | 19:00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 194 | RT | Other Reliability Requirement | PGAE | Stockton | 9/30/2019 | 68 | No | DEC | 4 | 16:55 | 20:00 | -0.85 | 0.00 | 0.00 | 12.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 195 | RT | Planned Transmission Outage | PGAE | Fresno | 9/30/2019 | 0 | No | DEC | 1 | 15:50 | 16:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 196 | RT | Planned Transmission Outage | PGAE | Fresno | 9/30/2019 | 0 | No | INC | 3 | 16:00 | 18:50 | -1.83 | 0.00 | 0.00 | 41.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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

Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 | CC6620 |
|--------|-------------|-----------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|-----------|---------------|---------------|---------|------------------|------------|------------|--------|----------|--------|
| 197 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/2/2019 | 15 | No | DEC | 5 | 13:00 | 17:30 | 4.15 | 0.00 | 0.00 | -133.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 198 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/2/2019 | 15 | No | INC | 6 | 7:55 | 13:00 | 2.45 | 1833.96 | 0.00 | -72.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 199 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/5/2019 | 30 - 45 | No | INC | 3 | 21:00 | 0:00 | -5.56 | 1796.44 | 0.00 | 235.90 | -2.45 | 0.00 | 115.36 | 0.00 | -70.63 | 0.00 |
| 200 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/6/2019 | 30 - 42 | No | INC | 12 | 0:00 | 12:00 | 3.81 | 7003.12 | 0.00 | -134.18 | -0.42 | 0.00 | 12.33 | 0.00 | -4.08 | 0.00 |
| 201 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/8/2019 | 14 | No | DEC | 4 | 20:00 | 0:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 202 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/9/2019 | 14 - 15 | No | DEC | 24 | 0:00 | 0:00 | 1.92 | 0.00 | 0.00 | -52.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 203 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/9/2019 | 15 - 30 | No | INC | 19 | 5:55 | 0:00 | 7.89 | 11899.02 | 0.00 | -328.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 204 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/10/2019 | 14 - 45 | No | INC | 24 | 0:00 | 0:00 | 5.79 | 20975.53 | 0.00 | -487.52 | -1.69 | 0.00 | 87.18 | 0.00 | -69.15 | 0.00 |
| 205 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/11/2019 | 15 | No | DEC | 1 | 18:00 | 18:25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 206 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/11/2019 | 15 - 45 | No | INC | 24 | 0:00 | 0:00 | 14.75 | 29399.32 | 0.00 | -622.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 207 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/12/2019 | 42 | No | DEC | 3 | 17:00 | 20:00 | 1.36 | 0.00 | 0.00 | -41.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 208 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/12/2019 | 15 - 45 | No | INC | 24 | 0:00 | 0:00 | 6.94 | 29350.75 | 0.00 | -174.96 | -1.84 | 0.00 | 62.52 | 0.00 | -33.89 | 0.00 |
| 209 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/13/2019 | 30 - 62 | No | DEC | 7 | 13:00 | 20:00 | 13.66 | -4402.47 | 0.00 | -130.59 | -1.41 | 0.00 | 29.56 | 0.00 | -613.60 | 0.00 |
| 210 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/13/2019 | 28 - 62 | No | INC | 24 | 0:00 | 0:00 | 1.17 | 33405.56 | 0.00 | -15.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 211 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/14/2019 | 16 - 32 | No | DEC | 5 | 16:00 | 21:00 | 4.63 | -10549.26 | 0.00 | -226.30 | -3.40 | 0.00 | 147.46 | 0.00 | -9842.65 | 0.00 |
| 212 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/14/2019 | 14 - 32 | No | INC | 24 | 0:00 | 0:00 | 2.19 | 21370.23 | 0.00 | -100.51 | -0.27 | 0.00 | 9.97 | 0.00 | -6.59 | 0.00 |
| 213 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/15/2019 | 14 | No | DEC | 20 | 0:00 | 19:55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 214 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/15/2019 | 32 - 48 | No | INC | 24 | 0:00 | 0:00 | 10.71 | 31037.71 | 0.00 | -400.86 | -1.58 | 0.00 | 39.46 | 0.00 | -19.67 | 0.00 |

**California Independent System Operator Corporation
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Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|-----------------------------|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|--------|----------|--------|
| 215 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/16/2019 | 16 | No | DEC | 1 | 23:15 | 0:00 | -8.13 | 0.00 | 0.00 | 261.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 216 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/16/2019 | 28 - 48 | No | INC | 24 | 0:00 | 0:00 | 18.59 | 55460.84 | 0.00 | -501.21 | -3.04 | 0.00 | 81.44 | 0.00 | -36.88 | 0.00 |
| 217 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/17/2019 | 16 | No | DEC | 12 | 0:00 | 12:00 | -0.07 | 0.00 | 0.00 | 0.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 218 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/17/2019 | 16 - 30 | No | INC | 24 | 0:00 | 0:00 | 1.85 | 26181.63 | 0.00 | -66.72 | -0.04 | 0.00 | 1.27 | 0.00 | -0.72 | 0.00 |
| 219 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/18/2019 | 15 | No | DEC | 5 | 19:30 | 0:00 | 0.25 | -167.21 | 0.00 | -13.39 | 0.00 | 0.00 | 0.00 | 0.00 | -128.01 | 0.00 |
| 220 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/18/2019 | 30 | No | INC | 24 | 0:00 | 0:00 | 1.22 | 36118.44 | 0.00 | -11.29 | -0.40 | 0.00 | 20.47 | 0.00 | 0.00 | 0.00 |
| 221 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/19/2019 | 15 | No | DEC | 24 | 0:00 | 0:00 | -3.58 | 0.00 | 0.00 | 90.61 | 0.00 | 0.00 | 0.00 | 0.00 | -166.05 | 0.00 |
| 222 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/19/2019 | 15 - 32 | No | INC | 24 | 0:00 | 0:00 | 16.99 | 25911.28 | 0.00 | -546.16 | -0.27 | 0.00 | 8.29 | 0.00 | -4.98 | 0.00 |
| 223 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/20/2019 | 15 | No | DEC | 23 | 0:00 | 22:45 | -0.02 | 0.00 | 0.00 | 18.51 | 0.00 | 0.00 | 0.00 | 0.00 | -51.84 | 0.00 |
| 224 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/20/2019 | 14 - 32 | No | INC | 24 | 0:00 | 0:00 | -1.36 | 20754.66 | 0.00 | 48.20 | -1.34 | 0.00 | 37.34 | 0.00 | -0.75 | 0.00 |
| 225 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/21/2019 | 14 | No | INC | 24 | 0:00 | 0:00 | 2.89 | 10511.96 | 0.00 | -57.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 226 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/28/2019 | 15 - 30 | No | INC | 16 | 8:00 | 0:00 | 7.97 | 12369.32 | 0.00 | -265.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 227 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/29/2019 | 15 - 32 | No | INC | 24 | 0:00 | 0:00 | 7.00 | 18152.36 | 0.00 | -258.22 | 0.00 | 0.00 | 0.00 | 0.00 | -15.69 | 0.00 |
| 228 | RT | Planned Transmission Outage | PGAE | Humboldt | 9/30/2019 | 14 - 32 | No | INC | 24 | 0:00 | 0:00 | 10.61 | 29557.99 | 0.00 | -325.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 229 | RT | Planned Transmission Outage | PGAE | Stockton | 9/21/2019 | 88.8 | No | INC | 5 | 9:50 | 14:00 | 14.34 | 13355.24 | 0.00 | -187.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 230 | RT | Planned Transmission Outage | PGAE | Stockton | 9/24/2019 | 115 - 192 | No | DEC | 7 | 16:10 | 23:00 | -90.75 | -33418.29 | 0.00 | 3002.24 | -0.24 | 0.00 | 9.15 | 0.00 | -2039.49 | 0.00 |
| 231 | RT | Planned Transmission Outage | SCE | LA Basin | 9/18/2019 | 20 | No | INC | 24 | 0:00 | 0:00 | 29.63 | 76180.50 | 0.00 | -3652.26 | 0.27 | -17.17 | 0.00 | 0.00 | 0.00 | 0.00 |
| 232 | RT | Planned Transmission Outage | SCE | LA Basin | 9/19/2019 | 285 | No | INC | 7 | 15:30 | 22:00 | 384.82 | 45403.34 | 0.00 | -13186.17 | 31.25 | -629.99 | 0.00 | 0.00 | -97.72 | 0.00 |

**California Independent System Operator Corporation
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November 15, 2019**

Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|-----------------------------|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|-----------|---------------|---------------|------------|------------------|------------|------------|--------|--------|----------|
| 233 | RT | Planned Transmission Outage | SCE | NA | 9/27/2019 | 200 | No | INC | 7 | 17:00 | 0:00 | -4.17 | 56144.34 | 17375.30 | 75.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 234 | RT | Planned Transmission Outage | SCE | NA | 9/28/2019 | 200 | No | DEC | 7 | 17:00 | 0:00 | 19.08 | 1.24 | 0.00 | -555.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 235 | RT | Planned Transmission Outage | SCE | NA | 9/28/2019 | 200 | No | INC | 22 | 0:00 | 22:00 | 16.90 | 0.00 | 0.00 | -499.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 236 | RT | Planned Transmission Outage | SCE | NA | 9/29/2019 | 200 | No | DEC | 24 | 0:00 | 0:00 | 219.31 | 0.00 | 0.00 | -6574.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 237 | RT | Planned Transmission Outage | SCE | NA | 9/30/2019 | 200 | No | DEC | 6 | 17:00 | 23:00 | -5.05 | 0.00 | 0.00 | 109.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 238 | RT | Planned Transmission Outage | SCE | NA | 9/30/2019 | 200 | No | INC | 24 | 0:00 | 0:00 | 2.30 | 15739.15 | 0.00 | -57.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 239 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 9/30/2019 | 100 - 420 | No | INC | 5 | 10:15 | 14:30 | 89.76 | 29137.12 | 967.30 | -36187.01 | 162.00 | 8804.12 | 0.00 | 0.00 | - | 37000.21 |
| 240 | RT | Software Limitation | PGAE | Bay Area | 9/3/2019 | 460 - 515 | No | INC | 2 | 18:40 | 20:00 | 62.51 | 4887.30 | 0.00 | -2711.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 241 | RT | Software Limitation | PGAE | Bay Area | 9/4/2019 | 294 | No | DEC | 3 | 17:40 | 19:45 | 72.79 | -11038.69 | 0.00 | -43233.46 | 66.49 | -40896.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| 242 | RT | Software Limitation | PGAE | Bay Area | 9/5/2019 | 185 | No | DEC | 2 | 18:00 | 20:00 | 44.46 | 0.00 | 0.00 | -2000.05 | 35.77 | -1618.31 | 0.00 | 0.00 | 0.00 | 0.00 |
| 243 | RT | Software Limitation | PGAE | Bay Area | 9/5/2019 | 185 | No | INC | 4 | 17:45 | 21:00 | 7.47 | 0.00 | 0.00 | -328.66 | 0.06 | -2.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| 244 | RT | Software Limitation | PGAE | Bay Area | 9/6/2019 | 400 | No | DEC | 1 | 14:15 | 14:30 | -32.66 | 0.00 | 0.00 | 744.11 | -31.87 | 0.00 | 724.44 | 0.00 | 0.00 | 0.00 |
| 245 | RT | Software Limitation | PGAE | Fresno | 9/30/2019 | -319 | No | DEC | 2 | 10:45 | 12:00 | -77.19 | 0.00 | 0.00 | -1148.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 246 | RT | Software Limitation | PGAE | Kern | 9/4/2019 | 32 | No | INC | 3 | 18:25 | 21:00 | 24.63 | 0.00 | 2828.36 | -18981.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 247 | RT | Software Limitation | PGAE | NA | 9/3/2019 | 30 | No | INC | 2 | 18:40 | 20:00 | -0.63 | 0.00 | 821.74 | 22.97 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 248 | RT | Software Limitation | PGAE | Sierra | 9/29/2019 | 0 | No | INC | 1 | 15:05 | 16:05 | -5.00 | 0.00 | 0.00 | 0.00 | -5.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 249 | RT | Software Limitation | PGAE | Stockton | 9/4/2019 | 332 | No | INC | 3 | 17:40 | 19:45 | 13.02 | 0.00 | 0.00 | -1894.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 250 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/3/2019 | 400 - 750 | No | INC | 7 | 15:00 | 21:30 | 3760.16 | 51722.36 | 0.00 | -328968.67 | 124.56 | -11332.60 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
Exceptional Dispatch Report
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Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|---------------------|----------|------------------------|------------|-------------|------------|---------|-------|------------|----------|-----------|---------------|---------------|------------|------------------|------------|------------|----------|--------|--------|
| 251 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/4/2019 | 400 - 750 | No | INC | 8 | 14:00 | 21:30 | 2640.37 | 299612.04 | 0.00 | -306666.66 | 225.94 | -18580.32 | 0.00 | -4911.23 | 0.00 | 0.00 |
| 252 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/5/2019 | 645 | No | DEC | 3 | 17:00 | 20:00 | -106.29 | 0.00 | 0.00 | 5370.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 253 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/5/2019 | 50 - 745 | No | INC | 20 | 0:00 | 20:00 | 378.35 | 396621.27 | 0.00 | -44445.43 | 252.43 | -25153.49 | 0.00 | 0.00 | 0.00 | 0.00 |
| 254 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/6/2019 | 400.1 | No | INC | 4 | 16:30 | 20:30 | -44.44 | 96535.96 | 0.00 | 1878.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 255 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/8/2019 | 30 | No | DEC | 1 | 17:00 | 18:00 | -3.15 | 0.00 | 0.00 | 62.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 256 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/8/2019 | 30 | No | INC | 1 | 16:30 | 17:00 | 18.43 | 0.00 | 0.00 | -452.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 257 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/9/2019 | 0 | No | INC | 8 | 12:55 | 20:50 | 0.20 | 0.00 | 0.00 | -4.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 258 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/14/2019 | 400 | No | INC | 6 | 15:00 | 21:00 | -2.80 | 17536.18 | 0.00 | 89.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 259 | RT | Software Limitation | SCE | Big Creek-Ventura | 9/25/2019 | 400 | No | INC | 6 | 16:30 | 22:00 | -189.29 | 186545.13 | 0.00 | 9557.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 260 | RT | Software Limitation | SCE | LA Basin | 9/1/2019 | 190 - 241 | No | INC | 7 | 14:05 | 21:00 | 492.77 | 60259.97 | 0.00 | -31147.30 | 473.15 | -29041.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| 261 | RT | Software Limitation | SCE | LA Basin | 9/2/2019 | 5 - 495 | No | INC | 19 | 2:30 | 21:00 | 155.21 | 145569.90 | 382.58 | -17685.70 | 201.65 | -19512.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| 262 | RT | Software Limitation | SCE | LA Basin | 9/3/2019 | 174 - 240 | No | DEC | 7 | 14:00 | 21:00 | 4.96 | 19847.40 | 0.00 | -1060.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 263 | RT | Software Limitation | SCE | LA Basin | 9/3/2019 | 65 - 495 | No | INC | 9 | 14:00 | 22:30 | 26.91 | 73479.54 | 0.00 | -15089.38 | 7.74 | -692.53 | 0.00 | 0.00 | 0.00 | 0.00 |
| 264 | RT | Software Limitation | SCE | LA Basin | 9/4/2019 | 174 - 335 | No | DEC | 7 | 14:00 | 21:00 | -104.89 | 0.00 | 0.00 | 13676.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 265 | RT | Software Limitation | SCE | LA Basin | 9/4/2019 | 10 - 497 | No | INC | 10 | 14:00 | 0:00 | 3482.00 | 357271.43 | 32907.42 | -795861.60 | 2948.79 | -610037.21 | 0.00 | 0.00 | 0.00 | 0.00 |
| 266 | RT | Software Limitation | SCE | LA Basin | 9/5/2019 | 190 - 247.1 | No | DEC | 8 | 14:00 | 22:00 | 1934.84 | -141085.61 | 8609.20 | -139908.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 267 | RT | Software Limitation | SCE | LA Basin | 9/5/2019 | 10 - 194 | No | INC | 15 | 0:00 | 15:00 | 64.46 | 0.00 | 0.00 | -7022.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**California Independent System Operator Corporation
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Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|---------------------|----------|------------------------|------------|------------|------------|---------|-------|------------|----------|-----------|---------------|---------------|-----------|------------------|------------|------------|--------|--------|--------|
| 268 | RT | Software Limitation | SCE | LA Basin | 9/6/2019 | 240.1 | No | INC | 5 | 16:30 | 21:00 | -28.00 | 67912.92 | 0.00 | 1245.88 | 12.06 | -831.29 | 0.00 | 0.00 | 0.00 | 0.00 |
| 269 | RT | Software Limitation | SCE | LA Basin | 9/7/2019 | 190 - 194 | No | INC | 4 | 16:00 | 20:00 | -64.86 | 0.00 | 0.00 | -1838.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 270 | RT | Software Limitation | SCE | LA Basin | 9/8/2019 | 65 - 190 | No | INC | 4 | 17:00 | 21:00 | 20.86 | 8943.60 | 0.00 | -1903.09 | 16.59 | -1013.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| 271 | RT | Software Limitation | SCE | LA Basin | 9/9/2019 | 65 - 190 | No | INC | 7 | 14:00 | 21:00 | -44.58 | 35410.22 | 0.00 | 1938.62 | 0.18 | -11.16 | 0.00 | 0.00 | 0.00 | 0.00 |
| 272 | RT | Software Limitation | SCE | LA Basin | 9/11/2019 | 194 | No | INC | 7 | 14:00 | 21:00 | 51.46 | 12899.92 | 0.00 | -6819.82 | 2.40 | -149.32 | 0.00 | 0.00 | 0.00 | 0.00 |
| 273 | RT | Software Limitation | SCE | LA Basin | 9/12/2019 | 65 - 194 | No | DEC | 3 | 17:00 | 20:00 | -28.27 | 0.00 | 0.00 | 2192.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 274 | RT | Software Limitation | SCE | LA Basin | 9/12/2019 | 0 - 240 | No | INC | 20 | 1:00 | 21:00 | 174.56 | 73693.24 | 0.00 | -23652.47 | 7.56 | -739.43 | 0.00 | 0.00 | 0.00 | 0.00 |
| 275 | RT | Software Limitation | SCE | LA Basin | 9/13/2019 | 65 - 332 | No | DEC | 5 | 14:00 | 19:00 | -20.73 | 0.00 | 0.00 | 2090.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 276 | RT | Software Limitation | SCE | LA Basin | 9/13/2019 | 65 - 494.9 | No | INC | 7 | 14:00 | 21:00 | 923.42 | 164287.73 | 6398.52 | -75713.50 | 474.29 | -43261.62 | 0.00 | 0.00 | 0.00 | 0.00 |
| 277 | RT | Software Limitation | SCE | LA Basin | 9/14/2019 | 65 - 194 | No | INC | 6 | 15:00 | 21:00 | -218.66 | 55096.65 | 0.00 | 10493.34 | 21.42 | -1355.21 | 0.00 | 0.00 | 0.00 | 0.00 |
| 278 | RT | Software Limitation | SCE | LA Basin | 9/15/2019 | 65 - 194 | No | INC | 7 | 14:00 | 21:00 | 37.56 | 16840.14 | 0.00 | -2837.68 | 5.31 | -336.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| 279 | RT | Software Limitation | SCE | LA Basin | 9/18/2019 | 194 | No | INC | 3 | 5:30 | 7:45 | -51.60 | 7217.10 | 0.00 | 1516.74 | 0.27 | -17.17 | 0.00 | 0.00 | 0.00 | 0.00 |
| 280 | RT | Software Limitation | SCE | LA Basin | 9/23/2019 | 0 | No | DEC | 8 | 16:00 | 0:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 281 | RT | Software Limitation | SCE | LA Basin | 9/23/2019 | 65 - 194 | No | INC | 9 | 13:40 | 22:00 | -126.66 | 16789.60 | 0.00 | 3514.98 | 0.00 | -0.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 282 | RT | Software Limitation | SCE | LA Basin | 9/24/2019 | 0 - 195 | No | INC | 23 | 0:00 | 23:00 | -15.25 | 0.00 | 0.00 | -489.78 | 12.83 | -1502.57 | 0.00 | 0.00 | 0.00 | 0.00 |
| 283 | RT | Software Limitation | SCE | LA Basin | 9/25/2019 | 195 | No | INC | 9 | 13:25 | 22:00 | 104.63 | 0.00 | 0.00 | -14456.36 | 87.74 | -13301.11 | 0.00 | 0.00 | 0.00 | 0.00 |
| 284 | RT | Software Limitation | SCE | NA | 9/3/2019 | 440 | No | INC | 3 | 18:25 | 21:00 | 63.16 | 1491.72 | 0.00 | -25713.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 285 | RT | Software Limitation | SCE | NA | 9/22/2019 | 200 | No | DEC | 3 | 18:30 | 20:45 | 101.14 | -21281.48 | 0.00 | -3186.48 | 13.72 | -404.57 | 0.00 | 0.00 | 0.00 | 0.00 |

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

Chart 2: Table of Exceptional Dispatches for Period 01/September/2019 - 30/September/2019

| 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 |
|--------|-------------|---------------------|----------|------------------------|------------|-------------|------------|---------|-------|------------|----------|-----------|---------------|---------------|----------|------------------|------------|------------|--------|--------|--------|
| 286 | RT | Software Limitation | SDGE | San Diego-IV | 9/20/2019 | 0 | No | DEC | 1 | 20:00 | 21:00 | 0.00 | -5403.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 287 | RT | Software Limitation | SDGE | San Diego-IV | 9/21/2019 | 0 | No | INC | 1 | 18:00 | 19:00 | 16.55 | 0.00 | 0.00 | -612.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 288 | RT | SOL | PGAE | Humboldt | 9/2/2019 | 48 - 65 | No | INC | 3 | 18:45 | 21:00 | 1.15 | 3820.75 | 0.00 | -51.56 | -0.21 | 0.00 | 2.41 | 0.00 | 0.00 | 0.00 |
| 289 | RT | SOL | PGAE | Stockton | 9/25/2019 | 90 - 192 | No | DEC | 11 | 13:45 | 0:00 | -30.40 | -64165.76 | 0.00 | 1429.01 | -19.79 | 0.00 | 400.17 | 0.00 | 0.00 | 0.00 |
| 290 | RT | SOL | PGAE | Stockton | 9/26/2019 | 90 | No | DEC | 5 | 0:00 | 4:45 | 0.24 | -24123.83 | 0.00 | -6.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 291 | RT | Unit Testing | PGAE | Bay Area | 9/26/2019 | 25 | No | INC | 4 | 8:30 | 12:30 | 0.70 | 5248.12 | 0.00 | -32.18 | 0.70 | -32.18 | 0.00 | 0.00 | 0.00 | 0.00 |
| 292 | RT | Unit Testing | PGAE | Fresno | 9/6/2019 | 316 | No | INC | 1 | 20:30 | 21:00 | -19.10 | 0.00 | 0.00 | 1226.27 | 1.08 | -152.31 | 0.00 | 0.00 | 0.00 | 0.00 |
| 293 | RT | Unit Testing | PGAE | Sierra | 9/12/2019 | 10 | No | INC | 1 | 8:20 | 8:35 | 2.37 | 0.00 | 0.00 | -71.26 | 2.37 | -71.26 | 0.00 | 0.00 | 0.00 | 0.00 |
| 294 | RT | Unit Testing | PGAE | Sierra | 9/26/2019 | 57 | No | INC | 1 | 22:20 | 23:00 | 31.39 | 0.00 | 0.00 | -1174.46 | 31.39 | -1174.46 | 0.00 | 0.00 | 0.00 | 0.00 |
| 295 | RT | Unit Testing | SCE | LA Basin | 9/12/2019 | 49 | No | INC | 1 | 17:15 | 18:15 | 22.77 | 0.00 | 0.00 | -1514.24 | 22.07 | -1489.59 | 0.00 | 0.00 | 0.00 | 0.00 |
| 296 | RT | Voltage Support | PGAE | Fresno | 9/8/2019 | -323 | No | DEC | 3 | 4:20 | 7:00 | -80.75 | 0.00 | 0.00 | 3140.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 297 | RT | Voltage Support | PGAE | Fresno | 9/29/2019 | -322 - -320 | No | DEC | 19 | 5:15 | 0:00 | -66.97 | 0.00 | 0.00 | 2381.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 298 | RT | Voltage Support | PGAE | Fresno | 9/29/2019 | 83 | No | INC | 6 | 17:15 | 23:00 | 153.94 | 34995.13 | 3000.53 | -6343.98 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 299 | RT | Voltage Support | PGAE | Fresno | 9/30/2019 | -320 | No | DEC | 6 | 0:00 | 5:30 | 0.00 | 0.00 | 0.00 | -0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300 | RT | Voltage Support | PGAE | Humboldt | 9/3/2019 | 48 | No | INC | 1 | 23:45 | 0:00 | 2.41 | 152.83 | 0.00 | -70.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Appendix A: Explanation by Example

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

Example 1: Exceptional Dispatch Instructions Prior to DAM

In this fictitious example, the CAISO issued an exceptional dispatch instruction for resource A to be committed at its Pmin of 50 MW from hours ending 5 through 10 for a generation procedure 7630. Similarly, the CAISO issued additional instructions to resources B and C for the same reason in Table 2. Exceptional dispatches prior to the day-ahead market are commitments to minimum load. Here the dispatch levels are all at minimum load. Table 2 below also shows the commitment costs and the total volume (MWh) of exceptional dispatch instruction for each resource. The minimum load costs and start up costs, shown in Table 2 are the eligible minimum load and start up costs different from the bid-in minimum load and start up costs⁷. Only those quantities which relate to pre-day-ahead unit commitments are shown in this table.

Table 2: Instructions Prior to Day-Ahead Market

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

This data is summarized as shown in Table 3, which is the prescribed format specified in the FERC order on September 02, 2009. This summary classifies the data by reason, resource location, local reliability area, and trade date. The MW column in Table 3 is the range of MW; in this case the minimum instruction MW is 20 MW for resource C, which occurs from hours ending 21 through 23. The maximum instruction occurs in hour ending 10. In this hour resource A is committed at 50 MW, resource B is committed at 30 MW and resource C is committed at 20 MW. This adds up to 100 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. Commitments are broken out separately from energy dispatches. In the day-ahead however, the exceptional dispatches are nearly always just commitments, as in this example. The Begin Time column shows hour ending 5 as this was the hour ending for first dispatch of the day, and the End Time column shows hour ending 23, as this was the hour with last dispatch. It is also possible there might be hours between the begin time and the end time where there might not be exceptional dispatch instructions, meaning that the range between the begin time and end time can include null hours with no dispatch. The total volume (MWh) is the MWh quantity for each resource, which adds up to 990 MWh. Similarly, all cost information is sum of individual resource costs. Some resources bid-in zero start-up cost; as seen in this example, resource A bid in zero for its start up cost. Since the CAISO does not explicitly pay a resource for bid-in minimum load costs and start-up costs; these costs are recovered through the charge code CC6620 (Bid Cost Recovery), this table shows the summary of CC6620 for the classification. Here, it is the CC6620 for all three resources which adds up to \$5000. This column shows the impact of exceptional dispatch on bid cost recovery for all pre-day-ahead exceptional dispatch commitments.

Table 3: FERC Summary of Instructions Prior to DAM

| Number | Market Type | Reason | Location | Local Reliability Area (LRA) | Trade Date | MW | Commitment | INC/DEC | Hour | Begin Time | End Time | Total Volume (MWh) | Min-Load Cost | Start-Up Cost | CC6620 |
|--------|-------------|--------|----------|------------------------------|------------|--------|------------|---------|------|------------|----------|--------------------|---------------|---------------|--------|
| 1 | DA | 7630 | SCE | LA Basin | 1-Jul-09 | 20-100 | Yes | N/A | 19 | 05:00 | 23:00 | 990 | \$11,400 | \$1,500 | \$5000 |

Example 2: Incremental Exceptional Dispatch Instructions in RTM

In this fictitious example the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 30 MW from hours 6:00 through 11:00 after completion of the day-ahead market for the transmission procedure 7110. This resource had no day-ahead award in those hours. The CAISO issued another exceptional dispatch instruction to resource B, to be dispatched at 40 MW from hours 7:00

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

through 9:00 in real-time for the transmission procedure 7110. This resource had a day-ahead schedule of 20 MW from the day-ahead market, which implies this exceptional dispatch instruction was an incremental instruction and the exceptional dispatch MW was 20 MW. Similarly, the details of exceptional dispatch (ED) instruction for resource C are shown in Table 4. This table also shows volume (MWh) and various real-time charge codes associated with the exceptional dispatch instructions. The total MWh column for each resource shows all types of imbalance energy quantities for this resource between the begin time and end time which includes both the exceptional dispatch energy quantities and optimal energy quantities.

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

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

Table 4: Incremental Exceptional Dispatch Instructions in RTM

| Date | Market | Resource | Location | Local Reliability Area (LRA) | Begin Time | End Time | Dispatch level (MW) | Day-Ahead Award (MW) | Commitment | INC/DEC | ED (MW) | Reason | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 |
|----------|--------|----------|----------|------------------------------|------------|----------|---------------------|----------------------|------------|---------|---------|--------|-----------|---------------|---------------|--------|------------------|------------|------------|--------|--------|
| 1-Jul-09 | RT | A | PG&E | Humboldt | 6:00 | 11:00 | 30 | 0 | Yes | INC | 30 | 7110 | 180 | 1000 | 50 | 1800 | 0 | 0 | 0 | 0 | 0 |
| 1-Jul-09 | RT | B | PG&E | Humboldt | 7:00 | 9:00 | 40 | 20 | No | INC | 20 | 7110 | 60 | 0 | 0 | 600 | 60 | 600 | 0 | 0 | 5400 |
| 1-Jul-09 | RT | C | PG&E | Humboldt | 12:00 | 15:00 | 50 | 50 | No | INC | 0 | 7110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1-Jul-09 | RT | C | PG&E | Humboldt | 16:00 | 20:00 | 50 | 40 | No | INC | 10 | 7110 | 50 | 0 | 0 | 300 | 20 | 300 | 0 | 0 | 200 |

This data is summarized as shown in Table 5 and is classified by reason, resource location, local reliability area, and trade date. The MW column in Table 5 is the range of MW; in this case the minimum instruction MW is 0 MW for resource C which occurs from hours ending 13 through 15. The maximum instruction occurs in hours ending 8 & 9, as during these two hours both resources A and B have an ED MW of 30MW and 20MW, respectively. This adds up to 50 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. This column shows a commitment if there was a single commitment in the entire interval of exceptional dispatch. The Begin Time column shows the time of the first dispatch of the day. This is a time not a range. Similarly, the End Time column shows a time and not a range. Exceptional dispatches occurred between these two times. Since there was a commitment between the begin time and end time, the Commitment column displays yes for the summary. Similarly, the INC/DEC column shows an INC, as there was an incremental dispatch between the begin time and end time. As mentioned in the previous example, it is possible there might be hours between the begin time and end time where there were no exceptional dispatch instructions. Both volume and cost information columns are the summation for all the respective columns for resources A, B and C. For instance, the Total volume (MWh) column is calculated as summation of 180,60,0 and 50, which are the individual volumes (MWh) for resources A, B and C for time periods shown in Table 4.

Table 5: FERC Summary of ED Instructions in RTM

| Number | Market Type | Reason | Location | Local Reliability Area (LRA) | Trade Date | MW | Commitment | INC/DEC | Hour | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 |
|--------|-------------|--------|----------|------------------------------|------------|------|------------|---------|------|------------|----------|-----------|---------------|---------------|--------|------------------|------------|------------|--------|--------|
| 1 | RT | 7110 | PG&E | Humboldt | 1-Jul-09 | 0-50 | Yes | INC | 15 | 6:00 | 20:00 | 290 | 1000 | 50 | 1700 | 140 | 1500 | 0 | 0 | 11000 |

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

Example 3: Decremental Exceptional Dispatch Instructions in RTM

This example highlights decremental exceptional dispatch instructions in the real-time market. In this fictitious example, the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 20 MW from hours ending 15 through 20 after completion of the day-ahead market for the transmission procedure 7430. The CAISO issued additional exceptional dispatch instructions for resources B and C; details of those instructions are shown in Table 6. This table also includes volume (MWh) and cost information.

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

Table 6: Decremental Exceptional Dispatch Instructions in RTM

| Date | Market Type | Resource | Location | Local Reliability Area (LRA) | Begin Time | End Time | Dispatch level (MW) | Day-Ahead Award (MW) | Commitment | INC/DEC | ED (MW) | Reason | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 |
|----------|-------------|----------|----------|------------------------------|------------|----------|---------------------|----------------------|------------|---------|---------|--------|-----------|---------------|---------------|--------|------------------|------------|------------|--------|---------|
| 1-Jul-09 | RT | A | PG&E | Fresno | 15:00 | 20:00 | 20 | 0 | Yes | INC | 20 | 7430 | 120 | \$ 120 | \$ 100 | \$ - | 0 | \$ - | \$ - | \$ - | \$ - |
| 1-Jul-09 | RT | B | PG&E | Fresno | 7:00 | 9:00 | 40 | 60 | No | DEC | 20 | 7430 | (60) | \$ - | \$ - | \$ 600 | -60 | \$ - | \$ 600 | \$ - | \$2,400 |
| 1-Jul-09 | RT | C | PG&E | Fresno | 10:00 | 14:00 | 40 | 50 | No | DEC | 10 | 7430 | (50) | \$ - | \$ - | \$ 500 | -50 | \$ - | \$ 500 | \$ - | \$2,000 |

This data is summarized according to FERC convention in Table 7. This summary classifies the data by reason, resource location, local reliability area, and trade date. Incs and decs are broken out separately. The inc entry is self-explanatory and similar to the previous example. Regarding the dec entry the MW column is the range of MW; in this case the minimum dec instruction is 10 MW (actually -10MW as it is a dec) for resource C which occurs from hours ending 10 through 14. The maximum instruction occurs from hours ending 7 through 9, when resource B was issued a dec instruction of 20 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. The volume and cost information are summarized by INC and DEC classification.

Table 7: FERC Summary of Decremental ED Instructions in RTM

| Number | Market Type | Reason | Location | Local Reliability Area (LRA) | Trade Date | MW | Commitment | INC/DEC | Hour | Begin Time | End Time | Total MWH | Min Load Cost | Start Up Cost | CC6470 | ED MWH (INC/DEC) | CC6470 INC | CC6470 DEC | CC6482 | CC6488 |
|--------|-------------|--------|----------|------------------------------|------------|-------|------------|---------|------|------------|----------|-----------|---------------|---------------|------------|------------------|------------|------------|--------|------------|
| 1 | RT | 7430 | PG&E | Fresno | 1-Jul-09 | 20 | Yes | INC | 6 | 15:00 | 20:00 | 120 | \$ 120 | \$ 100 | \$ - | 0 | \$ - | \$ - | \$ - | \$ - |
| 2 | RT | 7430 | PG&E | Fresno | 1-Jul-09 | 10-20 | Yes | DEC | 8 | 7:00 | 14:00 | (110) | \$ - | \$ - | \$ (1,100) | \$ (110) | \$ - | \$ (1,100) | \$ - | \$ (4,400) |

Appendix B: Price Impact Analysis

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

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

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

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

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

Table 8 shows the price impact analysis information for node A, which is in the PG&E area. This table shows all the five minute intervals in which the resource at PNode A was issued an exceptional dispatch instruction and was eligible to set the price. Out of the 8,640 five-minute intervals in September, this resource was issued exceptional dispatch instructions in 229 five-minute intervals. This resource was eligible to set the LMP in 22 intervals. Out of the 22 intervals, resource calculated LMP was larger than the market LMP in 21 intervals. In the 21 intervals, the average increase in five minute LMP was \$18.61/MWh. Out of the 22 intervals, resource calculated LMP was less than the market LMP in 1 interval. In the 1 interval, the average decrease in five minute LMP was \$1.36/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 increase of \$17.70/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 September, this resource was issued exceptional dispatch instructions in 936 five-minute intervals. This resource was eligible to set the LMP in 159 intervals. Out of the 159 intervals, resource calculated LMP was larger than the market LMP in 66 intervals. In the 66 intervals, the average increase in five minute LMP was \$33.82/MWh. Out of the 159 intervals, resource calculated LMP was less than the market LMP in 93 intervals. In the 93 intervals, the average decrease in five minute LMP was \$35.81/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 \$6.91/MWh

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

| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 1 | 9/23/2019 | 24 | 1 | 23.17 | Yes | 67.78 | 44.61 |
| 2 | 9/23/2019 | 24 | 2 | 29.76 | Yes | 67.78 | 38.02 |
| 3 | 9/23/2019 | 24 | 3 | 32.25 | Yes | 67.78 | 35.53 |
| 4 | 9/23/2019 | 24 | 4 | 32.11 | Yes | 67.78 | 35.67 |
| 5 | 9/23/2019 | 24 | 7 | 28.83 | Yes | 67.78 | 38.95 |
| 6 | 9/23/2019 | 24 | 8 | 26.44 | Yes | 67.78 | 41.34 |
| 7 | 9/23/2019 | 24 | 9 | 26.44 | Yes | 67.78 | 41.34 |
| 8 | 9/24/2019 | 17 | 10 | 30.06 | Yes | 42.89 | 12.83 |
| 9 | 9/24/2019 | 17 | 11 | 33.82 | Yes | 42.89 | 9.07 |
| 10 | 9/24/2019 | 17 | 12 | 32.44 | Yes | 42.89 | 10.45 |
| 11 | 9/24/2019 | 18 | 1 | 29.47 | Yes | 42.89 | 13.42 |
| 12 | 9/24/2019 | 18 | 2 | 28.76 | Yes | 42.89 | 14.13 |
| 13 | 9/24/2019 | 18 | 3 | 30.20 | Yes | 42.89 | 12.69 |
| 14 | 9/24/2019 | 18 | 4 | 30.77 | Yes | 42.89 | 12.12 |
| 15 | 9/24/2019 | 18 | 5 | 33.03 | Yes | 42.89 | 9.86 |
| 16 | 9/24/2019 | 18 | 6 | 34.13 | Yes | 42.89 | 8.76 |
| 17 | 9/24/2019 | 18 | 7 | 38.59 | Yes | 42.89 | 4.30 |
| 18 | 9/24/2019 | 18 | 8 | 38.59 | Yes | 42.89 | 4.30 |
| 19 | 9/24/2019 | 18 | 9 | 42.85 | Yes | 42.89 | 0.04 |
| 20 | 9/24/2019 | 18 | 10 | 39.83 | Yes | 42.89 | 3.06 |
| 21 | 9/24/2019 | 18 | 11 | 42.65 | Yes | 42.89 | 0.24 |
| 22 | 9/24/2019 | 18 | 12 | 44.25 | Yes | 42.89 | -1.36 |

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 | 9/4/2019 | 15 | 3 | 66.37 | Yes | 67.54 | 1.17 |
| 2 | 9/4/2019 | 15 | 4 | 72.54 | Yes | 67.54 | -5.00 |
| 3 | 9/4/2019 | 15 | 5 | 72.38 | Yes | 67.54 | -4.84 |
| 4 | 9/4/2019 | 15 | 6 | 72.71 | Yes | 67.54 | -5.17 |
| 5 | 9/4/2019 | 15 | 7 | 73.00 | Yes | 67.54 | -5.46 |
| 6 | 9/4/2019 | 15 | 8 | 73.12 | Yes | 67.54 | -5.58 |
| 7 | 9/4/2019 | 15 | 9 | 63.43 | Yes | 67.54 | 4.11 |
| 8 | 9/4/2019 | 15 | 10 | 96.35 | Yes | 67.54 | -28.81 |
| 9 | 9/4/2019 | 15 | 11 | 106.91 | Yes | 67.54 | -39.37 |
| 10 | 9/4/2019 | 15 | 12 | 164.98 | Yes | 67.54 | -97.44 |
| 11 | 9/4/2019 | 16 | 1 | 73.39 | Yes | 104.15 | 30.76 |
| 12 | 9/4/2019 | 16 | 2 | 70.60 | Yes | 104.15 | 33.55 |
| 13 | 9/4/2019 | 16 | 3 | 73.39 | Yes | 104.15 | 30.76 |
| 14 | 9/4/2019 | 16 | 4 | 76.84 | Yes | 104.15 | 27.31 |
| 15 | 9/4/2019 | 16 | 5 | 85.03 | Yes | 86.74 | 1.71 |
| 16 | 9/4/2019 | 16 | 6 | 84.39 | Yes | 86.74 | 2.35 |
| 17 | 9/4/2019 | 16 | 7 | 74.10 | Yes | 104.15 | 30.05 |
| 18 | 9/4/2019 | 16 | 8 | 94.12 | Yes | 75.25 | -18.87 |
| 19 | 9/4/2019 | 16 | 9 | 73.60 | Yes | 68.50 | -5.10 |
| 20 | 9/4/2019 | 16 | 10 | 74.76 | Yes | 75.71 | 0.95 |
| 21 | 9/4/2019 | 16 | 11 | 58.08 | Yes | 69.44 | 11.36 |
| 22 | 9/4/2019 | 16 | 12 | 49.75 | Yes | 69.44 | 19.69 |
| 23 | 9/4/2019 | 22 | 1 | 48.25 | Yes | 97.13 | 48.88 |
| 24 | 9/4/2019 | 22 | 2 | 59.26 | Yes | 104.15 | 44.89 |
| 25 | 9/4/2019 | 22 | 3 | 66.72 | Yes | 104.15 | 37.43 |
| 26 | 9/4/2019 | 22 | 4 | 69.15 | Yes | 104.15 | 35.00 |
| 27 | 9/4/2019 | 22 | 5 | 61.10 | Yes | 104.15 | 43.05 |
| 28 | 9/4/2019 | 22 | 6 | 51.92 | Yes | 104.15 | 52.23 |
| 29 | 9/5/2019 | 15 | 4 | 104.33 | Yes | 38.10 | -66.23 |
| 30 | 9/5/2019 | 15 | 5 | 104.92 | Yes | 38.10 | -66.82 |
| 31 | 9/5/2019 | 15 | 6 | 98.29 | Yes | 38.10 | -60.19 |
| 32 | 9/5/2019 | 15 | 7 | 102.91 | Yes | 38.10 | -64.81 |
| 33 | 9/5/2019 | 15 | 8 | 78.12 | Yes | 38.10 | -40.02 |
| 34 | 9/5/2019 | 15 | 9 | 123.73 | Yes | 38.10 | -85.63 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 35 | 9/5/2019 | 15 | 10 | 345.71 | Yes | 38.10 | -307.61 |
| 36 | 9/5/2019 | 15 | 11 | 128.55 | Yes | 38.10 | -90.45 |
| 37 | 9/5/2019 | 15 | 12 | 59.71 | Yes | 38.10 | -21.61 |
| 38 | 9/5/2019 | 16 | 1 | 407.29 | Yes | 38.10 | -369.19 |
| 39 | 9/5/2019 | 16 | 2 | 55.45 | Yes | 38.10 | -17.35 |
| 40 | 9/5/2019 | 16 | 3 | 47.53 | Yes | 38.10 | -9.43 |
| 41 | 9/5/2019 | 16 | 4 | 46.42 | Yes | 38.10 | -8.32 |
| 42 | 9/5/2019 | 16 | 5 | 46.35 | Yes | 38.10 | -8.25 |
| 43 | 9/5/2019 | 16 | 6 | 46.24 | Yes | 38.10 | -8.14 |
| 44 | 9/5/2019 | 16 | 7 | 46.22 | Yes | 38.10 | -8.12 |
| 45 | 9/5/2019 | 16 | 8 | 46.98 | Yes | 38.10 | -8.88 |
| 46 | 9/5/2019 | 16 | 9 | 72.19 | Yes | 38.10 | -34.09 |
| 47 | 9/5/2019 | 16 | 10 | 48.76 | Yes | 38.10 | -10.66 |
| 48 | 9/5/2019 | 16 | 11 | 47.33 | Yes | 38.10 | -9.23 |
| 49 | 9/5/2019 | 16 | 12 | 47.33 | Yes | 38.10 | -9.23 |
| 50 | 9/5/2019 | 17 | 1 | 47.57 | Yes | 38.10 | -9.47 |
| 51 | 9/5/2019 | 17 | 2 | 46.07 | Yes | 38.10 | -7.97 |
| 52 | 9/5/2019 | 17 | 3 | 47.61 | Yes | 38.10 | -9.51 |
| 53 | 9/5/2019 | 17 | 4 | 47.14 | Yes | 38.10 | -9.04 |
| 54 | 9/5/2019 | 17 | 5 | 47.13 | Yes | 38.10 | -9.03 |
| 55 | 9/5/2019 | 17 | 6 | 47.43 | Yes | 38.10 | -9.33 |
| 56 | 9/5/2019 | 17 | 7 | 54.44 | Yes | 38.10 | -16.34 |
| 57 | 9/5/2019 | 17 | 8 | 54.73 | Yes | 38.10 | -16.63 |
| 58 | 9/5/2019 | 17 | 9 | 67.40 | Yes | 38.10 | -29.30 |
| 59 | 9/5/2019 | 17 | 10 | 517.48 | Yes | 38.10 | -479.38 |
| 60 | 9/5/2019 | 17 | 11 | 445.47 | Yes | 38.10 | -407.37 |
| 61 | 9/5/2019 | 17 | 12 | 97.45 | Yes | 38.10 | -59.35 |
| 62 | 9/5/2019 | 18 | 1 | 55.19 | Yes | 38.10 | -17.09 |
| 63 | 9/5/2019 | 18 | 2 | 53.41 | Yes | 38.10 | -15.31 |
| 64 | 9/5/2019 | 18 | 3 | 67.93 | Yes | 38.10 | -29.83 |
| 65 | 9/5/2019 | 18 | 4 | 50.33 | Yes | 38.10 | -12.23 |
| 66 | 9/5/2019 | 18 | 5 | 53.26 | Yes | 38.10 | -15.16 |
| 67 | 9/5/2019 | 18 | 6 | 51.60 | Yes | 38.10 | -13.50 |
| 68 | 9/5/2019 | 18 | 7 | 49.23 | Yes | 38.10 | -11.13 |
| 69 | 9/5/2019 | 18 | 8 | 49.91 | Yes | 38.10 | -11.81 |
| 70 | 9/5/2019 | 18 | 9 | 53.34 | Yes | 38.10 | -15.24 |
| 71 | 9/5/2019 | 18 | 10 | 46.83 | Yes | 38.10 | -8.73 |
| 72 | 9/5/2019 | 18 | 11 | 47.37 | Yes | 38.10 | -9.27 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 73 | 9/5/2019 | 18 | 12 | 46.84 | Yes | 38.10 | -8.74 |
| 74 | 9/5/2019 | 19 | 1 | 50.31 | Yes | 38.10 | -12.21 |
| 75 | 9/5/2019 | 19 | 2 | 50.65 | Yes | 38.10 | -12.55 |
| 76 | 9/5/2019 | 19 | 3 | 47.53 | Yes | 38.10 | -9.43 |
| 77 | 9/5/2019 | 19 | 4 | 53.44 | Yes | 38.10 | -15.34 |
| 78 | 9/5/2019 | 19 | 5 | 55.41 | Yes | 38.10 | -17.31 |
| 79 | 9/5/2019 | 19 | 6 | 60.45 | Yes | 38.10 | -22.35 |
| 80 | 9/5/2019 | 19 | 7 | 57.09 | Yes | 38.10 | -18.99 |
| 81 | 9/5/2019 | 19 | 8 | 60.43 | Yes | 38.10 | -22.33 |
| 82 | 9/5/2019 | 19 | 9 | 55.37 | Yes | 38.10 | -17.27 |
| 83 | 9/5/2019 | 19 | 10 | 63.68 | Yes | 38.10 | -25.58 |
| 84 | 9/5/2019 | 19 | 11 | 66.96 | Yes | 38.10 | -28.86 |
| 85 | 9/5/2019 | 19 | 12 | 66.94 | Yes | 38.10 | -28.84 |
| 86 | 9/5/2019 | 20 | 1 | 58.56 | Yes | 38.10 | -20.46 |
| 87 | 9/5/2019 | 20 | 2 | 58.59 | Yes | 38.10 | -20.49 |
| 88 | 9/5/2019 | 20 | 3 | 58.55 | Yes | 38.10 | -20.45 |
| 89 | 9/5/2019 | 20 | 4 | 46.56 | Yes | 38.10 | -8.46 |
| 90 | 9/5/2019 | 20 | 5 | 45.97 | Yes | 38.10 | -7.87 |
| 91 | 9/5/2019 | 20 | 6 | 45.97 | Yes | 38.10 | -7.87 |
| 92 | 9/5/2019 | 20 | 7 | 44.59 | Yes | 38.10 | -6.49 |
| 93 | 9/5/2019 | 20 | 8 | 44.83 | Yes | 38.10 | -6.73 |
| 94 | 9/5/2019 | 20 | 9 | 46.49 | Yes | 38.10 | -8.39 |
| 95 | 9/5/2019 | 20 | 10 | 44.96 | Yes | 38.10 | -6.86 |
| 96 | 9/5/2019 | 20 | 11 | 44.96 | Yes | 38.10 | -6.86 |
| 97 | 9/5/2019 | 20 | 12 | 44.76 | Yes | 38.10 | -6.66 |
| 98 | 9/5/2019 | 21 | 1 | 50.82 | Yes | 38.10 | -12.72 |
| 99 | 9/5/2019 | 21 | 2 | 49.65 | Yes | 38.10 | -11.55 |
| 100 | 9/5/2019 | 21 | 3 | 50.94 | Yes | 38.10 | -12.84 |
| 101 | 9/5/2019 | 21 | 4 | 50.88 | Yes | 38.10 | -12.78 |
| 102 | 9/5/2019 | 21 | 5 | 50.12 | Yes | 38.10 | -12.02 |
| 103 | 9/5/2019 | 21 | 6 | 50.90 | Yes | 38.10 | -12.80 |
| 104 | 9/5/2019 | 21 | 7 | 50.03 | Yes | 38.10 | -11.93 |
| 105 | 9/5/2019 | 21 | 8 | 46.57 | Yes | 38.10 | -8.47 |
| 106 | 9/5/2019 | 21 | 9 | 49.58 | Yes | 38.10 | -11.48 |
| 107 | 9/5/2019 | 21 | 10 | 48.76 | Yes | 38.10 | -10.66 |
| 108 | 9/5/2019 | 21 | 11 | 48.41 | Yes | 38.10 | -10.31 |
| 109 | 9/5/2019 | 21 | 12 | 50.89 | Yes | 38.10 | -12.79 |
| 110 | 9/6/2019 | 17 | 11 | 40.70 | Yes | 68.93 | 28.23 |

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|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 111 | 9/6/2019 | 17 | 12 | 38.92 | Yes | 68.93 | 30.01 |
| 112 | 9/6/2019 | 18 | 1 | 40.56 | Yes | 68.93 | 28.37 |
| 113 | 9/6/2019 | 18 | 2 | 41.70 | Yes | 68.93 | 27.23 |
| 114 | 9/6/2019 | 18 | 3 | 42.33 | Yes | 68.93 | 26.60 |
| 115 | 9/6/2019 | 18 | 4 | 42.33 | Yes | 68.93 | 26.60 |
| 116 | 9/6/2019 | 18 | 5 | 67.48 | Yes | 68.93 | 1.45 |
| 117 | 9/6/2019 | 18 | 6 | 146.69 | Yes | 68.93 | -77.76 |
| 118 | 9/6/2019 | 18 | 7 | 62.35 | Yes | 68.93 | 6.58 |
| 119 | 9/6/2019 | 18 | 8 | 50.38 | Yes | 68.93 | 18.55 |
| 120 | 9/6/2019 | 18 | 9 | 71.48 | Yes | 68.93 | -2.55 |
| 121 | 9/6/2019 | 18 | 10 | 66.61 | Yes | 68.93 | 2.32 |
| 122 | 9/6/2019 | 18 | 11 | 51.23 | Yes | 68.93 | 17.70 |
| 123 | 9/6/2019 | 18 | 12 | 66.52 | Yes | 68.93 | 2.41 |
| 124 | 9/6/2019 | 19 | 1 | 55.66 | Yes | 94.37 | 38.71 |
| 125 | 9/6/2019 | 19 | 2 | 55.77 | Yes | 94.37 | 38.60 |
| 126 | 9/6/2019 | 19 | 3 | 44.66 | Yes | 68.93 | 24.27 |
| 127 | 9/6/2019 | 19 | 4 | 53.02 | Yes | 94.37 | 41.35 |
| 128 | 9/6/2019 | 19 | 5 | 55.54 | Yes | 94.37 | 38.83 |
| 129 | 9/6/2019 | 19 | 6 | 55.90 | Yes | 94.37 | 38.47 |
| 130 | 9/6/2019 | 19 | 7 | 55.70 | Yes | 94.37 | 38.67 |
| 131 | 9/6/2019 | 19 | 8 | 55.03 | Yes | 94.37 | 39.34 |
| 132 | 9/6/2019 | 19 | 9 | 55.20 | Yes | 68.93 | 13.73 |
| 133 | 9/6/2019 | 19 | 10 | 58.74 | Yes | 94.37 | 35.63 |
| 134 | 9/6/2019 | 19 | 11 | 57.70 | Yes | 94.37 | 36.67 |
| 135 | 9/6/2019 | 19 | 12 | 55.00 | Yes | 94.37 | 39.37 |
| 136 | 9/6/2019 | 20 | 1 | 50.55 | Yes | 94.37 | 43.82 |
| 137 | 9/6/2019 | 20 | 2 | 45.74 | Yes | 94.37 | 48.63 |
| 138 | 9/6/2019 | 20 | 3 | 49.51 | Yes | 94.37 | 44.86 |
| 139 | 9/6/2019 | 20 | 4 | 43.86 | Yes | 94.37 | 50.51 |
| 140 | 9/6/2019 | 20 | 5 | 43.86 | Yes | 94.37 | 50.51 |
| 141 | 9/6/2019 | 20 | 6 | 43.86 | Yes | 94.37 | 50.51 |
| 142 | 9/6/2019 | 20 | 7 | 43.83 | Yes | 94.37 | 50.54 |
| 143 | 9/6/2019 | 20 | 8 | 43.85 | Yes | 94.37 | 50.52 |
| 144 | 9/6/2019 | 20 | 9 | 43.91 | Yes | 94.37 | 50.46 |
| 145 | 9/6/2019 | 20 | 10 | 43.92 | Yes | 94.37 | 50.45 |
| 146 | 9/6/2019 | 20 | 11 | 43.94 | Yes | 94.37 | 50.43 |
| 147 | 9/6/2019 | 20 | 12 | 44.01 | Yes | 94.37 | 50.36 |
| 148 | 9/6/2019 | 21 | 1 | 45.27 | Yes | 94.37 | 49.10 |

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| Number | Trade Date | Trade Hour | Interval | Market LMP | Eligible Flag | Calculated LMP | Change in LMP |
|--------|------------|------------|----------|------------|---------------|----------------|---------------|
| 149 | 9/6/2019 | 21 | 2 | 42.41 | Yes | 94.37 | 51.96 |
| 150 | 9/6/2019 | 21 | 3 | 42.40 | Yes | 94.37 | 51.97 |
| 151 | 9/6/2019 | 21 | 4 | 41.82 | Yes | 94.37 | 52.55 |
| 152 | 9/6/2019 | 21 | 5 | 40.80 | Yes | 94.37 | 53.57 |
| 153 | 9/6/2019 | 21 | 6 | 38.22 | Yes | 94.37 | 56.15 |
| 154 | 9/6/2019 | 21 | 7 | 38.34 | Yes | 94.37 | 56.03 |
| 155 | 9/6/2019 | 21 | 8 | 92.06 | Yes | 94.37 | 2.31 |
| 156 | 9/6/2019 | 21 | 9 | 44.48 | Yes | 94.37 | 49.89 |
| 157 | 9/6/2019 | 21 | 10 | 49.05 | Yes | 94.37 | 45.32 |
| 158 | 9/6/2019 | 21 | 11 | 69.59 | Yes | 94.37 | 24.78 |
| 159 | 9/6/2019 | 21 | 12 | 42.60 | Yes | 94.37 | 51.77 |

Appendix C: Exceptional Dispatch Bid Mitigation Analysis

In September 2019, the ISO applied the exceptional dispatch bid mitigation to the exceptional dispatches. Table 10 shows the costs by instruction type in September. With exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches were \$ 103,109. Without the exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches would be \$ 336,808. The cost saving from the exceptional dispatch bid mitigation was \$ 233,699.

Table 10: Bid Mitigation Analysis for September 2019

| Type | Number of Resources | Costs without Bid Mitigation | Costs with Bid Mitigation | Cost Saving |
|---------|---------------------|------------------------------|---------------------------|-------------|
| NONTMOD | 13 | \$ 336,808 | \$ 103,109 | \$ 233,699 |
| Total | 13 | \$ 336,808 | \$ 103,109 | \$ 233,699 |

CERTIFICATE OF SERVICE

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

Dated at Folsom, California, this 15th day of November, 2019.

Anna Pascuzzo
Anna Pascuzzo