



Exceptional Dispatch Report

Table 2: May 2017

Market Quality and Renewable Integration

August 30, 2017

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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 May 2017.

This report contains a price impact analysis as prescribed by FERC in its September 2 order. The price impact analysis for the month of May is presented in Appendix B. This report also includes mitigation analysis for May 2017 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 May 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

The following additional reason for exceptional dispatch instructions in 2017 includes Software Limitation. When an exceptional dispatch instruction was used to bridge schedules across days for resources with a minimum down time of 24 hours, as the CAISO software does not handle multi day commitment. For instance, a resource has a day-ahead schedule from 0600 till 2300, and then is shut down in 2400. If this resource had a minimum down time of 24 hours and it is required the following 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. There were a few other reasons used to explain exceptional dispatch instructions in May, 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 May 2017. 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:

- 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.

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 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.

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

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.

Table 1: Exceptional Dispatches in May 2017

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Chart 2: Table of Exceptional Dispatches for Period 01/May/2017 - 31/May/2017

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	Conditions beyond the control of the CAISO	PG&E	Bay Area	5/9/2017	240	No	DEC	2	14:50	15:59	-11.03	0.00	0.00	136.84	10.63	-229.42	0.00	0.00	-74.18	0.00
2	RT	Conditions beyond the control of the CAISO	PG&E	Bay Area	5/9/2017	240	No	INC	2	14:50	15:59	5.45	0.00	0.00	-119.69	7.83	-172.76	0.00	0.00	-48.77	0.00
3	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/8/2017	15-86	No	INC	16	8:00	23:59	15.24	0.00	0.00	-282.92	0.00	0.00	0.00	0.00	0.00	0.00
4	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/8/2017	55-86	No	DEC	16	8:00	23:59	0.59	0.00	0.00	-325.80	-17.32	0.00	294.36	0.00	0.00	0.00
5	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/10/2017	71-183	No	DEC	3	19:30	21:59	-70.58	0.00	0.00	658.60	-61.36	0.00	415.48	0.00	0.00	0.00
6	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/11/2017	60	No	DEC	4	18:25	21:59	-30.00	0.00	0.00	544.50	-30.00	0.00	544.50	0.00	0.00	0.00
7	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/14/2017	60	No	DEC	4	20:20	23:29	-65.16	0.00	0.00	1224.03	-62.81	0.00	1164.54	0.00	0.00	0.00
8	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/15/2017	46	No	DEC	4	19:25	22:59	-28.76	0.00	0.00	533.85	-29.11	0.00	539.71	0.00	0.00	0.00
9	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/16/2017	46-80	No	DEC	17	7:20	23:59	-87.25	0.00	0.00	1252.94	-91.70	0.00	1286.13	0.00	0.00	0.00
10	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/16/2017	46-80	No	INC	17	7:20	23:59	-12.14	0.00	0.00	17.47	-14.00	0.00	23.82	0.00	0.00	0.00
11	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/17/2017	46-65	No	DEC	11	0:00	10:59	-497.63	0.00	0.00	833.50	-351.70	0.00	94.25	0.00	0.00	0.00
12	RT	Conditions beyond the control of the CAISO	PG&E	N/A	5/17/2017	65	No	INC	4	7:15	10:59	34.93	0.00	0.00	-46.59	0.00	0.00	0.00	0.00	0.00	0.00
13	RT	Contingency Dispatch	PG&E	Bay Area	5/3/2017	240	No	INC	1	19:27	19:59	-25.00	6403.71	0.00	3491.93	0.00	0.00	0.00	0.00	0.00	0.00
14	RT	Fast Start Unit Management	PG&E	Bay Area	5/4/2017	0	No	INC	2	0:45	2:04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/3/2017	29	No	DEC	8	10:10	17:14	-7.90	0.00	0.00	-305.13	-3.97	0.00	6.76	0.00	-328.63	0.00
16	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/3/2017	29-58	No	INC	14	10:10	23:59	1.67	0.00	0.00	-1725.48	0.00	0.00	0.00	0.00	0.00	0.00
17	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/4/2017	29	No	DEC	24	0:00	23:59	1.10	0.00	0.00	141.60	0.00	0.00	0.00	0.00	-1056.50	0.00

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18	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/4/2017	29	No	INC	24	0:00	23:59	-7.19	0.00	0.00	1570.98	0.00	0.00	0.00	0.00	0.00	0.00
19	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/5/2017	4-29	No	INC	24	0:00	23:59	-5.31	0.00	0.00	716.02	0.00	0.00	0.00	0.00	0.00	0.00
20	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/5/2017	25-29	No	DEC	24	0:00	23:59	-6.97	0.00	0.00	-385.92	0.00	0.00	0.00	0.00	-204.20	0.00
21	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/6/2017	29-31	No	DEC	24	0:00	23:59	3.59	0.00	0.00	293.44	0.00	0.00	0.00	0.00	-185.72	0.00
22	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/6/2017	29-31	No	INC	24	0:00	23:59	-22.01	0.00	0.00	491.99	0.00	0.00	0.00	0.00	0.00	0.00
23	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/7/2017	31	No	INC	24	0:00	23:59	1.82	0.00	0.00	499.29	0.00	0.00	0.00	0.00	0.00	0.00
24	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/8/2017	13-31	No	DEC	24	0:00	23:59	-4.03	0.00	0.00	100.13	0.00	0.00	0.00	0.00	-343.85	0.00
25	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/8/2017	17-31	No	INC	24	0:00	23:59	3.43	0.00	0.00	-95.29	0.00	0.00	0.00	0.00	0.00	0.00
26	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/9/2017	31	No	DEC	24	0:00	23:59	-7.28	0.00	0.00	117.36	0.00	0.00	0.00	0.00	-642.05	0.00
27	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/9/2017	31	No	INC	24	0:00	23:59	1.61	0.00	0.00	124.11	0.00	0.00	0.00	0.00	0.00	0.00
28	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/10/2017	13-31	No	INC	24	0:00	23:59	2.03	0.00	0.00	-21.42	0.00	0.00	0.00	0.00	0.00	0.00
29	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/10/2017	18-31	No	DEC	24	0:00	23:59	-6.90	0.00	0.00	14.50	0.00	0.00	0.00	0.00	-488.41	0.00
30	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/11/2017	31	No	DEC	24	0:00	23:59	-13.52	0.00	0.00	213.84	0.00	0.00	0.00	0.00	-571.62	0.00
31	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/11/2017	31	No	INC	24	0:00	23:59	2.63	0.00	0.00	-10.80	0.00	0.00	0.00	0.00	0.00	0.00
32	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/12/2017	14-31	No	DEC	24	0:00	23:59	-44.91	0.00	0.00	855.18	0.00	0.00	0.00	0.00	-480.93	0.00
33	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/12/2017	17-31	No	INC	24	0:00	23:59	-40.79	0.00	0.00	766.92	0.00	0.00	0.00	0.00	0.00	0.00
34	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/13/2017	30-31	No	DEC	24	0:00	23:59	-5.81	0.00	0.00	-63.52	-1.52	0.00	-17.18	0.00	0.00	0.00
35	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/13/2017	30-31	No	INC	24	0:00	23:59	-4.28	0.00	0.00	54.99	0.00	0.00	0.00	0.00	0.00	0.00

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36	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/14/2017	13-30	No	INC	24	0:00	23:59	2.94	0.00	0.00	43.77	0.00	0.00	0.00	0.00	0.00	0.00
37	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/14/2017	16	No	DEC	24	0:00	23:59	0.02	0.00	0.00	-0.17	0.00	0.00	0.00	0.00	0.00	0.00
38	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/15/2017	13	No	DEC	24	0:00	23:59	-5.11	0.00	0.00	39.81	0.00	0.00	0.00	0.00	-5.24	0.00
39	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/15/2017	17-30	No	INC	24	0:00	23:59	-16.51	0.00	0.00	389.19	0.00	0.00	0.00	0.00	0.00	0.00
40	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/16/2017	13	No	DEC	24	0:00	23:59	-4.66	0.00	0.00	-46.22	0.00	0.00	0.00	0.00	0.00	0.00
41	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/16/2017	17-30	No	INC	24	0:00	23:59	26.54	0.00	0.00	-161.41	0.00	0.00	0.00	0.00	0.00	0.00
42	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/17/2017	13-30	No	INC	24	0:00	23:59	6.66	0.00	0.00	105.59	0.00	0.00	0.00	0.00	0.00	0.00
43	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/17/2017	16-30	No	DEC	24	0:00	23:59	-2.85	0.00	0.00	6.75	0.00	0.00	0.00	0.00	-6.63	0.00
44	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/18/2017	13-30	No	INC	24	0:00	23:59	-5.06	0.00	0.00	112.70	0.00	0.00	0.00	0.00	0.00	0.00
45	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/18/2017	16-30	No	DEC	24	0:00	23:59	-2.09	0.00	0.00	11.30	0.00	0.00	0.00	0.00	-322.48	0.00
46	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/19/2017	30	No	DEC	24	0:00	23:59	-3.26	0.00	0.00	132.78	0.00	0.00	0.00	0.00	-440.55	0.00
47	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/19/2017	30	No	INC	24	0:00	23:59	-9.41	0.00	0.00	193.77	0.00	0.00	0.00	0.00	0.00	0.00
48	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/20/2017	4-30	No	DEC	20	4:45	23:59	-5.43	0.00	0.00	135.90	0.00	0.00	0.00	0.00	-524.11	0.00
49	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/20/2017	26-30	No	INC	24	0:00	23:59	-9.40	0.00	0.00	170.41	0.00	0.00	0.00	0.00	0.00	0.00
50	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/21/2017	4-30	No	INC	24	0:00	23:59	-8.59	0.00	0.00	541.24	0.00	0.00	0.00	0.00	0.00	0.00
51	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/21/2017	16-30	No	DEC	24	0:00	23:59	-6.94	0.00	0.00	146.89	0.00	0.00	0.00	0.00	-508.34	0.00
52	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/22/2017	13-30	No	INC	24	0:00	23:59	-7.98	0.00	0.00	247.00	0.00	0.00	0.00	0.00	0.00	0.00
53	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/22/2017	16-30	No	DEC	24	0:00	23:59	-2.10	0.00	0.00	50.52	0.00	0.00	0.00	0.00	-588.85	0.00

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54	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/23/2017	4-30	No	INC	24	0:00	23:59	-9.51	0.00	0.00	197.76	0.00	0.00	0.00	0.00	0.00	0.00
55	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/23/2017	26-30	No	DEC	24	0:00	23:59	-3.86	0.00	0.00	97.01	0.00	0.00	0.00	0.00	-522.04	0.00
56	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/24/2017	13-17	No	DEC	24	0:00	23:59	-2.52	0.00	0.00	396.50	0.00	0.00	0.00	0.00	-12.77	0.00
57	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/24/2017	13-30	No	INC	24	0:00	23:59	-6.32	0.00	0.00	1034.88	0.00	0.00	0.00	0.00	0.00	0.00
58	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/25/2017	4-30	No	DEC	24	0:00	23:59	0.29	0.00	0.00	-4.37	0.00	0.00	0.00	0.00	-53.30	0.00
59	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/25/2017	16-30	No	INC	24	0:00	23:59	2.53	0.00	0.00	11.46	0.00	0.00	0.00	0.00	0.00	0.00
60	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/26/2017	4-30	No	INC	24	0:00	23:59	-32.35	0.00	0.00	547.85	0.00	0.00	0.00	0.00	0.00	0.00
61	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/26/2017	26-30	No	DEC	24	0:00	23:59	-11.36	0.00	0.00	206.93	0.00	0.00	0.00	0.00	-98.73	0.00
62	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/27/2017	13-30	No	INC	24	0:00	23:59	-8.15	0.00	0.00	69.82	0.00	0.00	0.00	0.00	0.00	0.00
63	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/27/2017	16-30	No	DEC	24	0:00	23:59	-3.15	0.00	0.00	37.40	0.00	0.00	0.00	0.00	-22.60	0.00
64	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/28/2017	30	No	DEC	24	0:00	23:59	-3.33	0.00	0.00	46.17	0.00	0.00	0.00	0.00	-191.10	0.00
65	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/28/2017	30	No	INC	24	0:00	23:59	-8.80	0.00	0.00	59.82	0.00	0.00	0.00	0.00	0.00	0.00
66	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/29/2017	30	No	DEC	24	0:00	23:59	-4.19	0.00	0.00	57.50	0.00	0.00	0.00	0.00	-213.43	0.00
67	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/29/2017	30	No	INC	24	0:00	23:59	-13.98	0.00	0.00	228.69	0.00	0.00	0.00	0.00	0.00	0.00
68	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/30/2017	30	No	DEC	24	0:00	23:59	-5.86	0.00	0.00	67.72	0.00	0.00	0.00	0.00	-228.20	0.00
69	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/30/2017	30	No	INC	24	0:00	23:59	-11.01	0.00	0.00	276.13	0.00	0.00	0.00	0.00	0.00	0.00
70	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/31/2017	30	No	DEC	24	0:00	23:59	-8.15	0.00	0.00	1055.05	0.00	0.00	0.00	0.00	-1.16	0.00
71	RT	Incomplete or Inaccurate Transmission	PG&E	Fresno	5/31/2017	30	No	INC	24	0:00	23:59	-37.45	0.00	0.00	4967.94	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/May/2017 - 31/May/2017

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
72	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/3/2017	16-32	No	INC	14	10:10	23:59	0.80	0.00	0.00	2382.99	0.00	0.00	0.00	0.00	0.00	0.00
73	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/4/2017	16	No	INC	24	0:00	23:59	1.19	0.00	0.00	1923.95	0.00	0.00	0.00	0.00	0.00	0.00
74	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/5/2017	16	No	INC	24	0:00	23:59	5.93	0.00	0.00	-19.66	0.00	0.00	0.00	0.00	0.00	0.00
75	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/6/2017	11	No	DEC	14	10:45	23:59	-2.32	0.00	0.00	37.43	-1.29	0.00	20.44	0.00	-91.53	0.00
76	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/6/2017	11-16	No	INC	24	0:00	23:59	-14.22	0.00	0.00	94.88	-0.69	0.00	8.19	0.00	-7.49	0.00
77	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/7/2017	6-11	No	DEC	24	0:00	23:59	-0.42	0.00	0.00	9.05	0.00	0.00	0.00	0.00	-20.65	0.00
78	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/7/2017	6-11	No	INC	24	0:00	23:59	-5.32	0.00	0.00	-23.57	0.00	0.00	0.00	0.00	0.00	0.00
79	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/8/2017	11	No	DEC	24	0:00	23:59	-1.72	0.00	0.00	45.20	0.00	0.00	0.00	0.00	-495.10	0.00
80	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/8/2017	11	No	INC	24	0:00	23:59	0.78	0.00	0.00	12.37	0.00	0.00	0.00	0.00	0.00	0.00
81	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/9/2017	11	No	DEC	24	0:00	23:59	-0.31	0.00	0.00	4.91	0.00	0.00	0.00	0.00	-761.02	0.00
82	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/9/2017	11	No	INC	24	0:00	23:59	-1.99	0.00	0.00	265.39	0.00	0.00	0.00	0.00	0.00	0.00
83	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/10/2017	11	No	DEC	24	0:00	23:59	-0.24	0.00	0.00	0.82	0.00	0.00	0.00	0.00	-575.39	0.00
84	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/10/2017	11	No	INC	24	0:00	23:59	-2.42	0.00	0.00	68.78	0.00	0.00	0.00	0.00	0.00	0.00
85	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/11/2017	11	No	DEC	24	0:00	23:59	-1.07	0.00	0.00	15.77	0.00	0.00	0.00	0.00	-770.60	0.00
86	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/11/2017	11	No	INC	24	0:00	23:59	-1.69	0.00	0.00	56.55	0.00	0.00	0.00	0.00	0.00	0.00
87	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/12/2017	11	No	DEC	24	0:00	23:59	-28.24	0.00	0.00	437.80	0.00	0.00	0.00	0.00	-463.55	0.00
88	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/12/2017	11	No	INC	24	0:00	23:59	-11.23	0.00	0.00	248.19	0.00	0.00	0.00	0.00	0.00	0.00
89	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/13/2017	10	No	DEC	24	0:00	23:59	-0.84	0.00	0.00	-9.90	-0.65	0.00	-7.36	0.00	-77.99	0.00

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Chart 2: Table of Exceptional Dispatches for Period 01/May/2017 - 31/May/2017

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
90	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/13/2017	10	No	INC	24	0:00	23:59	-2.93	0.00	0.00	55.75	0.00	0.00	0.00	0.00	0.00	0.00
91	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/14/2017	10	No	DEC	24	0:00	23:59	-0.23	0.00	0.00	-2.25	0.00	0.00	0.00	0.00	0.00	0.00
92	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/14/2017	10	No	INC	24	0:00	23:59	-3.86	0.00	0.00	69.31	0.00	0.00	0.00	0.00	0.00	0.00
93	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/15/2017	10	No	DEC	24	0:00	23:59	-4.33	0.00	0.00	19.07	0.00	0.00	0.00	0.00	-111.51	0.00
94	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/15/2017	10	No	INC	24	0:00	23:59	-10.06	0.00	0.00	277.33	0.00	0.00	0.00	0.00	0.00	0.00
95	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/16/2017	10	No	DEC	24	0:00	23:59	-10.01	0.00	0.00	-104.14	0.00	0.00	0.00	0.00	-70.93	0.00
96	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/16/2017	10	No	INC	24	0:00	23:59	6.62	0.00	0.00	-42.56	0.00	0.00	0.00	0.00	0.00	0.00
97	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/17/2017	10	No	DEC	24	0:00	23:59	-1.00	0.00	0.00	-44.74	0.00	0.00	0.00	0.00	-300.43	0.00
98	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/17/2017	10	No	INC	24	0:00	23:59	-3.29	0.00	0.00	336.07	0.00	0.00	0.00	0.00	0.00	0.00
99	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/18/2017	10	No	DEC	24	0:00	23:59	0.08	0.00	0.00	0.14	0.00	0.00	0.00	0.00	-587.25	0.00
100	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/18/2017	10	No	INC	24	0:00	23:59	-0.54	0.00	0.00	24.83	0.00	0.00	0.00	0.00	0.00	0.00
101	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/19/2017	10	No	DEC	24	0:00	23:59	0.60	0.00	0.00	-20.87	0.00	0.00	0.00	0.00	-928.01	0.00
102	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/19/2017	10	No	INC	24	0:00	23:59	-0.61	0.00	0.00	16.86	0.00	0.00	0.00	0.00	0.00	0.00
103	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/20/2017	10	No	DEC	20	4:45	23:59	-1.40	0.00	0.00	43.77	0.00	0.00	0.00	0.00	-922.55	0.00
104	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/20/2017	10	No	INC	24	0:00	23:59	-1.65	0.00	0.00	16.74	0.00	0.00	0.00	0.00	0.00	0.00
105	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/21/2017	10	No	DEC	24	0:00	23:59	-0.67	0.00	0.00	5.53	0.00	0.00	0.00	0.00	-773.17	0.00
106	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/21/2017	10	No	INC	24	0:00	23:59	-1.81	0.00	0.00	48.20	0.00	0.00	0.00	0.00	0.00	0.00
107	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/22/2017	10	No	DEC	24	0:00	23:59	-0.26	0.00	0.00	13.05	0.00	0.00	0.00	0.00	-875.98	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
108	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/22/2017	10	No	INC	24	0:00	23:59	-0.94	0.00	0.00	47.32	0.00	0.00	0.00	0.00	0.00	0.00
109	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/23/2017	10	No	DEC	24	0:00	23:59	-0.47	0.00	0.00	12.27	0.00	0.00	0.00	0.00	-802.25	0.00
110	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/23/2017	10	No	INC	24	0:00	23:59	-1.30	0.00	0.00	37.04	0.00	0.00	0.00	0.00	0.00	0.00
111	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/24/2017	10	No	DEC	24	0:00	23:59	0.49	0.00	0.00	-919.77	0.00	0.00	0.00	0.00	-419.20	0.00
112	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/24/2017	10	No	INC	24	0:00	23:59	-4.09	0.00	0.00	888.91	0.00	0.00	0.00	0.00	0.00	0.00
113	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/25/2017	10	No	DEC	24	0:00	23:59	-1.52	0.00	0.00	22.92	0.00	0.00	0.00	0.00	-311.47	0.00
114	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/25/2017	10	No	INC	24	0:00	23:59	0.35	0.00	0.00	7.69	0.00	0.00	0.00	0.00	0.00	0.00
115	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/26/2017	5-10	No	DEC	24	0:00	23:59	-6.79	0.00	0.00	134.12	0.00	0.00	0.00	0.00	-302.42	0.00
116	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/26/2017	5-10	No	INC	24	0:00	23:59	-5.74	0.00	0.00	92.05	0.00	0.00	0.00	0.00	0.00	0.00
117	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/27/2017	10	No	DEC	24	0:00	23:59	-0.52	0.00	0.00	3.65	0.00	0.00	0.00	0.00	-219.05	0.00
118	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/27/2017	10	No	INC	24	0:00	23:59	-1.55	0.00	0.00	4.68	0.00	0.00	0.00	0.00	0.00	0.00
119	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/28/2017	10	No	DEC	24	0:00	23:59	-0.24	0.00	0.00	4.97	0.00	0.00	0.00	0.00	-388.42	0.00
120	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/28/2017	10	No	INC	24	0:00	23:59	-1.44	0.00	0.00	3.86	0.00	0.00	0.00	0.00	0.00	0.00
121	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/29/2017	10	No	DEC	24	0:00	23:59	-2.86	0.00	0.00	50.38	0.00	0.00	0.00	0.00	-451.59	0.00
122	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/29/2017	10	No	INC	24	0:00	23:59	-5.40	0.00	0.00	131.58	0.00	0.00	0.00	0.00	0.00	0.00
123	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/30/2017	10	No	DEC	24	0:00	23:59	-3.93	0.00	0.00	87.07	0.00	0.00	0.00	0.00	-476.03	0.00
124	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/30/2017	10	No	INC	24	0:00	23:59	-5.90	0.00	0.00	194.36	0.00	0.00	0.00	0.00	0.00	0.00
125	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/31/2017	10	No	DEC	24	0:00	23:59	-9.45	0.00	0.00	1586.60	0.00	0.00	0.00	0.00	-335.19	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
126	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	5/31/2017	10	No	INC	24	0:00	23:59	-12.58	0.00	0.00	653.44	0.00	0.00	0.00	0.00	0.00	0.00
127	RT	Incomplete or Inaccurate Transmission	PG&E	NCNB	5/24/2017	59-65	No	DEC	3	21:40	23:59	-2.29	0.00	0.00	83.91	-2.47	0.00	83.86	0.00	-1328.39	0.00
128	RT	Incomplete or Inaccurate Transmission	PG&E	NCNB	5/24/2017	167-226	No	INC	2	21:40	22:59	1.25	0.00	0.00	-34.88	-0.03	0.00	0.79	0.00	-2.41	0.00
129	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/4/2017	20	No	DEC	5	18:55	22:59	9.43	-378.35	0.00	-492.35	0.00	0.00	0.00	0.00	0.00	0.00
130	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/4/2017	20	No	INC	5	18:55	22:59	1.74	2648.49	0.00	-1662.34	0.00	0.00	0.00	0.00	0.00	0.00
131	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/5/2017	154	No	DEC	8	12:20	19:59	-13.17	0.00	0.00	816.01	-9.13	0.00	87.63	0.00	-1362.15	0.00
132	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/8/2017	45-92	No	INC	9	15:45	23:59	3.38	0.00	0.00	501.45	0.00	0.00	0.00	0.00	0.00	0.00
133	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/8/2017	106	No	DEC	10	14:20	23:59	8.49	0.00	0.00	1863.27	-15.01	0.00	-1681.35	0.00	-2060.64	0.00
134	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/9/2017	45-90	No	INC	24	0:00	23:59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/9/2017	106-116	No	DEC	24	0:00	23:59	-31.75	0.00	0.00	-2.48	-31.86	0.00	-2.48	0.00	-4358.65	0.00
136	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/10/2017	50-55	No	DEC	12	0:05	11:59	4.08	0.00	0.00	-69.13	-6.71	0.00	-0.29	0.00	-2190.74	0.00
137	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/24/2017	20	No	INC	10	10:26	19:59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
138	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/24/2017	135-290	No	DEC	10	9:48	19:29	-23.52	0.00	0.00	261.69	-37.69	0.00	490.97	0.00	-49808.26	0.00
139	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/25/2017	160	No	DEC	3	1:00	3:29	-2.52	0.00	0.00	23.25	-2.50	0.00	23.20	0.00	-25.50	0.00
140	RT	Incomplete or Inaccurate Transmission	PG&E	Sierra	5/25/2017	160	No	INC	3	1:00	3:29	-0.48	0.00	0.00	2.85	0.00	0.00	0.00	0.00	0.00	0.00
141	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/2/2017	45-65	No	INC	14	3:45	16:59	40.90	0.00	0.00	-780.48	-6.25	0.00	39.89	0.00	0.00	0.00
142	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/2/2017	55-65	No	DEC	14	3:45	16:59	6.86	0.00	0.00	-91.49	-27.43	0.00	523.47	0.00	-437.40	0.00
143	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/3/2017	70	No	DEC	5	8:02	12:59	-7.22	0.00	0.00	58.05	-5.95	0.00	34.81	0.00	-50.03	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
144	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/3/2017	70	No	INC	5	8:02	12:59	-28.29	0.00	0.00	463.84	0.00	0.00	0.00	0.00	0.00	0.00
145	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/5/2017	20-75	No	DEC	9	11:19	19:59	-4.37	0.00	0.00	-110.04	0.00	0.00	0.00	0.00	-430.65	0.00
146	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/5/2017	20-75	No	INC	9	11:19	19:59	-7.25	0.00	0.00	138.80	7.07	-254.64	312.84	0.00	-205.15	0.00
147	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/6/2017	20-35	No	DEC	13	7:15	19:59	12.51	0.00	0.00	-458.50	0.00	0.00	0.00	0.00	0.00	0.00
148	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/6/2017	20-35	No	INC	13	7:15	19:59	52.88	0.00	0.00	-1121.29	57.49	-1210.24	0.00	0.00	-316.58	0.00
149	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/8/2017	25-45	No	INC	12	2:30	14:29	29.66	0.00	0.00	-715.78	22.96	-328.51	0.00	0.00	-124.28	0.00
150	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/8/2017	25-60	No	DEC	22	2:30	23:59	-91.06	0.00	0.00	2302.19	-91.97	0.00	2803.94	0.00	-4667.83	0.00
151	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/9/2017	56-80	No	DEC	24	0:00	23:59	-5.51	0.00	0.00	656.63	-34.33	0.00	855.26	0.00	-5468.30	0.00
152	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/9/2017	56-85	No	INC	23	0:00	22:29	66.27	0.00	0.00	-2649.50	-6.67	0.00	191.46	0.00	-81.94	0.00
153	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/10/2017	40-60	No	DEC	23	1:20	23:59	-2.24	0.00	0.00	-131.87	-10.83	0.00	87.51	0.00	-6061.63	0.00
154	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/10/2017	40-60	No	INC	21	0:00	20:44	29.51	0.00	0.00	-587.71	-13.33	0.00	294.91	0.00	-26.96	0.00
155	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/11/2017	56-70	No	DEC	24	0:00	23:59	-19.33	0.00	0.00	1076.68	-22.55	0.00	1159.69	0.00	22088.09	0.00
156	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/11/2017	56-70	No	INC	24	0:00	23:59	31.35	0.00	0.00	-1284.64	-12.94	0.00	443.99	0.00	-176.20	0.00
157	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/12/2017	70	No	DEC	2	0:00	1:59	-9.41	0.00	0.00	230.87	-10.77	0.00	269.35	0.00	-79.74	0.00
158	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/13/2017	75	No	INC	8	14:30	21:59	26.75	0.00	0.00	247.79	0.00	0.00	0.00	0.00	0.00	0.00
159	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/13/2017	75-80	No	DEC	9	14:30	22:59	-2.24	0.00	0.00	59.51	-1.83	0.00	45.75	0.00	-654.39	0.00
160	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/15/2017	40	No	INC	10	10:12	19:59	126.78	0.00	0.00	-778.65	128.91	-778.89	0.00	0.00	-1895.79	0.00
161	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/15/2017	40-75	No	DEC	16	4:55	19:59	-7.18	0.00	0.00	58.48	-5.78	0.00	24.59	0.00	-38.17	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
162	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/16/2017	20	No	INC	1	3:42	3:59	3.18	0.00	0.00	-54.38	4.43	-75.64	0.00	0.00	-13.37	0.00
163	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/17/2017	45-96	No	DEC	24	0:00	23:59	-62.77	-246.69	0.00	2176.72	-67.14	0.00	2450.97	0.00	-3666.44	0.00
164	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/17/2017	45-156	No	INC	24	0:40	23:59	152.14	1199.46	0.00	-606.48	-28.40	-1.74	382.71	0.00	-21.41	0.00
165	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/18/2017	50-70	No	DEC	20	0:35	19:59	0.94	0.00	0.00	-773.47	-18.77	0.00	-126.81	0.00	-1400.94	0.00
166	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/18/2017	60-70	No	INC	16	0:35	15:59	0.34	0.00	0.00	36.36	-7.90	0.00	41.94	0.00	0.00	0.00
167	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/19/2017	47-70	No	DEC	1	5:45	6:29	-21.07	0.00	0.00	519.96	-19.95	0.00	493.14	0.00	-87.77	0.00
168	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/22/2017	65	No	DEC	5	4:55	8:59	-14.00	0.00	0.00	199.06	-14.92	0.00	214.56	0.00	-72.29	0.00
169	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/22/2017	65	No	INC	5	4:55	8:59	-1.47	0.00	0.00	-102.42	-1.55	0.00	27.98	0.00	0.00	0.00
170	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/25/2017	50-80	No	DEC	19	1:30	19:59	-68.19	0.00	0.00	291.36	-57.29	0.00	198.02	0.00	-299.49	0.00
171	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/25/2017	50-80	No	INC	19	1:30	19:59	1.97	0.00	0.00	-98.79	-0.45	0.00	7.71	0.00	-7.70	0.00
172	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/26/2017	40-120	No	INC	10	8:40	17:44	114.77	0.00	0.00	-1659.73	0.00	0.00	0.00	0.00	-187.43	0.00
173	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/26/2017	50-110	No	DEC	13	7:15	19:59	-9.65	0.00	0.00	132.67	-7.50	0.00	123.79	0.00	-304.77	0.00
174	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/28/2017	70-140	No	DEC	6	18:13	23:59	-24.73	0.00	0.00	188.81	-13.77	0.00	4.69	0.00	-591.85	0.00
175	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/28/2017	96	No	INC	4	5:50	8:59	46.98	8624.95	1969.27	76.54	0.20	-0.07	0.00	0.00	-26.18	0.00
176	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/29/2017	70-130	No	DEC	24	0:00	23:59	-70.29	0.00	0.00	905.30	-25.67	0.00	-235.31	0.00	-993.77	0.00
177	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/29/2017	100-130	No	INC	21	0:00	20:59	76.54	0.00	0.00	-1597.92	-7.90	0.00	-110.08	0.00	0.00	0.00
178	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/30/2017	50-75	No	INC	24	0:00	23:59	12.18	0.00	0.00	-3690.20	-3.13	0.00	57.15	0.00	0.00	0.00
179	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/30/2017	50-130	No	DEC	23	1:25	23:59	-23.57	0.00	0.00	1394.71	-30.84	0.00	721.20	0.00	-2159.57	0.00

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180	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/31/2017	60-70	No	INC	24	0:00	23:59	56.95	0.00	0.00	2821.54	0.00	0.00	0.00	0.00	0.00	0.00
181	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	5/31/2017	70	No	DEC	23	1:25	23:59	-16.16	0.00	0.00	275.77	-15.75	0.00	344.70	0.00	-1354.13	0.00
182	RT	Incomplete or Inaccurate Transmission	PG&E	Stockton	6/1/2017	70	No	INC	8	0:00	7:44	122.41	0.00	0.00	3001.82	0.00	0.00	0.00	0.00	-179.92	0.00
183	RT	Incomplete or Inaccurate Transmission	SDG&E	San Diego-IV	5/30/2017	15	No	INC	3	15:40	17:59	-5.41	0.00	0.00	120.70	0.00	0.00	0.00	0.00	0.00	0.00
184	RT	Load Forecast Uncertainty	Intertie	N/A	5/26/2017	4	No	INC	1	15:00	15:59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-31.52	0.00	0.00
185	RT	Load Forecast Uncertainty	N/A	N/A	5/3/2017	157	No	DEC	1	19:05	19:59	25.07	0.00	0.00	-5016.33	-12.06	0.00	0.00	0.00	0.00	0.00
186	RT	Load Forecast Uncertainty	N/A	N/A	5/3/2017	211-488	No	INC	4	19:05	22:59	58.30	0.00	0.00	-35959.78	37.53	5256.21	0.00	-4345.62	0.00	0.00
187	RT	Load Forecast Uncertainty	PG&E	Bay Area	5/3/2017	240	No	INC	1	19:05	19:52	-0.41	5336.43	0.00	11.24	0.00	0.00	0.00	0.00	0.00	0.00
188	RT	Load Forecast Uncertainty	PG&E	Bay Area	5/8/2017	0	No	INC	2	7:00	8:29	-47.94	2616.25	0.00	0.00	-47.94	0.00	0.00	0.00	0.00	0.00
189	RT	Load Forecast Uncertainty	PG&E	Bay Area	5/22/2017	24	No	DEC	6	14:55	19:59	-111.87	-20908.65	0.00	4045.14	0.14	-4.13	0.00	-1.15	0.00	0.00
190	RT	Load Forecast Uncertainty	PG&E	Bay Area	5/24/2017	141	No	INC	11	13:00	23:59	36.93	60379.00	12419.00	-14370.15	0.00	0.00	0.00	-0.02	0.00	0.00
191	RT	Load Forecast Uncertainty	PG&E	Fresno	5/3/2017	14	No	INC	1	19:05	19:52	7.55	227.60	0.00	-2116.21	0.00	0.00	0.00	0.00	0.00	0.00
192	RT	Load Forecast Uncertainty	PG&E	Fresno	5/7/2017	0	No	INC	1	13:40	14:39	33.65	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
193	RT	Load Forecast Uncertainty	PG&E	N/A	5/22/2017	49	No	DEC	1	15:05	15:59	38.55	-11943.96	0.00	-1733.96	0.00	0.00	0.00	0.00	0.00	0.00
194	RT	Load Forecast Uncertainty	PG&E	N/A	5/23/2017	136	No	INC	11	11:00	21:59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	5/22/2017	50-778	No	INC	8	13:00	20:59	14.26	136238.41	0.00	-813.90	23.09	-745.87	0.00	-2860.61	0.00	0.00
196	RT	Load Forecast Uncertainty	SCE	LA Basin	5/1/2017	20	No	INC	8	16:00	23:59	-420.22	20150.20	0.00	16975.85	0.00	-0.27	0.00	-0.85	0.00	0.00

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197	RT	Load Forecast Uncertainty	SCE	LA Basin	5/2/2017	20	No	INC	24	0:00	23:59	-603.66	79051.97	0.00	24103.36	0.01	-0.11	0.00	-3.47	0.00	0.00
198	RT	Load Forecast Uncertainty	SCE	LA Basin	5/3/2017	16	No	INC	1	19:05	19:52	7.21	0.00	0.00	-1536.47	0.00	0.00	0.00	0.00	0.00	0.00
199	RT	Load Forecast Uncertainty	SCE	LA Basin	5/4/2017	20-110	No	INC	10	14:00	23:59	-881.97	109639.15	154742.00	88794.01	0.00	-0.33	0.00	0.00	0.00	0.00
200	RT	Load Forecast Uncertainty	SCE	LA Basin	5/4/2017	280	No	DEC	7	14:00	20:59	-853.49	0.00	0.00	115902.71	0.00	0.00	0.00	0.00	0.00	0.00
201	RT	Load Forecast Uncertainty	SCE	LA Basin	5/5/2017	10-20	No	DEC	24	0:00	23:59	-32.75	0.00	0.00	655.00	0.00	0.00	0.00	0.00	0.00	0.00
202	RT	Load Forecast Uncertainty	SCE	LA Basin	5/5/2017	20-70	No	INC	24	0:00	23:59	61.11	59546.01	0.00	-33524.84	0.00	0.00	0.00	0.00	0.00	0.00
203	RT	Load Forecast Uncertainty	SCE	LA Basin	5/6/2017	25	No	INC	18	6:00	23:59	-219.04	89494.74	0.00	5849.84	19.58	-798.45	0.00	-49.66	0.00	0.00
204	RT	Load Forecast Uncertainty	SCE	LA Basin	5/7/2017	25-142	No	INC	24	0:00	23:59	-246.52	132584.80	0.00	15739.22	77.01	-532.38	0.00	-13087.48	0.00	0.00
205	RT	Load Forecast Uncertainty	SCE	LA Basin	5/8/2017	25-142	No	INC	24	0:00	23:59	-149.78	140457.03	0.00	-25267.57	24.94	-609.13	0.00	-6427.06	0.00	0.00
206	RT	Load Forecast Uncertainty	SCE	LA Basin	5/19/2017	40	No	INC	15	9:00	23:59	-626.91	58925.89	33906.92	16781.62	20.23	-812.34	0.00	-3005.50	0.00	0.00
207	RT	Load Forecast Uncertainty	SCE	LA Basin	5/22/2017	20-30	Yes	INC	15	9:00	23:59	-307.86	52425.58	25571.10	9302.11	0.02	-0.39	0.00	-1.18	0.00	0.00
208	RT	Load Forecast Uncertainty	SCE	LA Basin	5/23/2017	20	No	DEC	3	21:00	23:59	-32.91	0.00	0.00	972.02	0.00	0.00	0.00	0.00	0.00	0.00
209	RT	Load Forecast Uncertainty	SCE	LA Basin	5/23/2017	90-320	Yes	INC	24	0:00	23:59	301.33	383385.28	89576.20	-8289.66	222.86	-6660.26	0.00	-348.97	0.00	0.00
210	RT	Load Forecast Uncertainty	SCE	LA Basin	5/24/2017	20	No	INC	24	0:00	23:59	-339.43	51487.80	0.00	11753.84	0.00	-0.05	0.00	-5.04	0.00	0.00
211	RT	Load Forecast Uncertainty	SCE	LA Basin	5/30/2017	20	No	INC	12	12:00	23:59	0.00	18496.68	31232.44	0.00	0.00	0.00	0.00	-3.90	0.00	0.00
212	RT	Load Forecast Uncertainty	SCE	LA Basin	5/31/2017	20	No	INC	24	0:00	23:59	57.07	23060.78	0.00	-7207.17	0.00	0.00	0.00	0.00	0.00	0.00
213	RT	Load Forecast Uncertainty	SCE	N/A	5/19/2017	172	No	INC	17	7:00	23:59	-1471.72	102181.90	27126.13	41028.74	0.00	0.00	0.00	0.00	0.00	0.00

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214	RT	Load Forecast Uncertainty	SCE	N/A	5/22/2017	410	No	DEC	4	18:00	21:59	3.46	0.00	0.00	-85.29	0.00	0.00	0.00	0.00	0.00	0.00
215	RT	Load Forecast Uncertainty	SCE	N/A	5/22/2017	410	No	INC	4	18:00	21:59	52.15	-1903.02	0.00	-2038.46	0.00	0.00	0.00	0.00	0.00	0.00
216	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/3/2017	55	No	INC	1	19:05	19:52	44.91	660.95	0.00	-11593.87	0.00	0.00	0.00	0.00	0.00	0.00
217	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/6/2017	20	No	INC	19	5:00	23:59	1899.39	126101.17	32845.45	-43152.37	0.06	-2.18	0.00	-1.11	0.00	0.00
218	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/7/2017	20-136	No	INC	24	0:00	23:59	799.31	170247.02	0.00	-74783.90	26.14	-133.03	0.00	-11.70	0.00	0.00
219	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/8/2017	20-136	No	INC	24	0:00	23:59	-126.15	144302.30	36048.35	-30118.54	0.06	-1.24	0.00	-4.37	0.00	0.00
220	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/12/2017	20-301	No	INC	17	5:00	21:59	6.18	199048.60	0.00	266.44	14.55	-404.19	0.00	-3051.09	0.00	0.00
221	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/13/2017	20	No	INC	11	7:00	17:59	212.46	42079.29	0.00	2643.20	0.00	0.00	0.00	0.00	0.00	0.00
222	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/15/2017	20	No	INC	6	18:00	23:59	-66.90	22203.42	0.00	1861.43	0.00	0.00	0.00	-0.60	0.00	0.00
223	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/16/2017	20	No	INC	17	7:00	23:59	-878.45	105887.22	24092.00	8407.00	0.00	0.00	0.00	-1.09	-3.54	0.00
224	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/22/2017	20-238	No	INC	12	12:00	23:59	600.78	192990.12	17056.76	-19205.80	12.57	-352.66	0.00	-3.34	0.00	0.00
225	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/22/2017	68	No	DEC	6	15:30	20:59	-916.74	0.00	0.00	23619.09	0.00	0.00	0.00	0.00	0.00	0.00
226	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/23/2017	60-235	No	INC	24	0:00	23:59	721.62	371272.42	0.00	-21601.88	0.05	-2.20	0.00	-16.07	0.00	0.00
227	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/24/2017	20	No	INC	24	0:00	23:59	5.06	93403.27	0.00	-269.67	0.00	-0.05	0.00	-2.51	0.00	0.00
228	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	5/25/2017	20	No	INC	24	0:00	23:59	-57.45	102853.78	0.00	1641.69	0.00	-0.06	0.00	-3.18	0.00	0.00
229	RT	Load Pull	PG&E	Bay Area	5/9/2017	330	No	DEC	1	18:30	19:29	55.61	-2457.35	0.00	-9222.92	0.00	0.00	0.00	0.00	0.00	0.00
230	RT	Load Pull	PG&E	Bay Area	5/21/2017	120	No	DEC	6	16:00	21:59	-51.46	0.00	0.00	-207.95	0.00	0.00	0.00	0.00	0.00	0.00
231	RT	Load Pull	PG&E	Fresno	5/21/2017	600	No	INC	1	17:41	17:59	8.23	0.00	0.00	-294.73	5.18	-204.14	0.00	0.00	0.00	0.00

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232	RT	Load Pull	SCE	LA Basin	5/4/2017	65	No	INC	7	14:10	20:59	2.14	20367.81	29484.79	2669.12	0.00	-0.33	0.00	0.00	0.00	0.00
233	RT	Load Pull	SCE	LA Basin	5/6/2017	71	No	INC	14	8:50	21:59	-169.51	65463.75	0.00	4472.14	19.58	-798.45	0.00	-49.06	0.00	0.00
234	RT	Load Pull	SCE	LA Basin	5/8/2017	71	No	INC	4	18:00	21:59	-72.83	19887.72	0.00	-26268.58	0.00	0.00	0.00	0.00	0.00	0.00
235	RT	Load Pull	SCE	LA Basin	5/19/2017	130	No	INC	9	13:45	21:59	-188.66	15451.75	0.00	5232.31	20.23	-812.34	0.00	-3001.22	0.00	0.00
236	RT	Load Pull	SCE	LA Basin	5/22/2017	240	No	INC	9	12:20	20:59	-287.40	94498.88	0.00	14351.84	87.73	-2829.27	0.00	0.00	0.00	0.00
237	RT	Load Pull	SDG&E	San Diego-IV	5/6/2017	68	No	INC	14	8:50	21:59	1825.33	98160.01	6338.60	-37769.30	0.06	-2.18	0.00	-0.34	0.00	0.00
238	RT	Load Pull	SDG&E	San Diego-IV	5/8/2017	68	No	INC	4	18:00	21:59	-32.61	30923.24	0.00	-32411.07	0.00	0.00	0.00	0.00	0.00	0.00
239	RT	Load Pull	SDG&E	San Diego-IV	5/12/2017	68	No	INC	3	18:30	20:59	-52.90	18845.69	0.00	1643.50	0.01	-0.30	0.00	0.00	0.00	0.00
240	RT	Load Pull	SDG&E	San Diego-IV	5/13/2017	20-136	No	INC	15	7:00	21:59	21.47	71450.11	0.00	10181.46	55.51	-150.14	0.00	-6.22	0.00	0.00
241	RT	Market Disruption	PG&E	Fresno	5/7/2017	83-166	No	DEC	5	17:30	21:59	-39.64	0.00	0.00	822.60	0.00	0.00	0.00	0.00	0.00	0.00
242	RT	Market Disruption	PG&E	Fresno	5/7/2017	83-166	No	INC	5	17:30	21:59	-8.75	6250.60	0.00	1078.68	0.01	-0.09	0.00	0.00	0.00	0.00
243	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/1/2017	16-32	No	DEC	17	7:10	23:59	-52.02	0.00	0.00	1256.39	3.90	-141.54	0.00	0.00	0.00	0.00
244	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/1/2017	16-32	No	INC	17	7:10	23:59	10.60	133.71	0.00	-296.33	3.40	-123.37	0.00	0.00	0.00	0.00
245	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/2/2017	15-48	No	INC	24	0:00	23:59	47.30	-1815.62	0.00	-1712.79	37.40	-1654.70	0.00	0.00	-105.85	0.00
246	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/2/2017	16	No	DEC	6	0:00	5:59	-0.46	0.00	0.00	14.48	0.00	0.00	0.00	0.00	0.00	0.00
247	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/3/2017	30-87	No	DEC	24	0:00	23:59	5.96	-6629.57	0.00	-138.18	1.67	-59.65	0.00	0.00	0.00	0.00
248	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/3/2017	33-90	No	INC	24	0:00	23:59	63.77	278.96	0.00	-1762.95	14.14	-565.98	0.00	0.00	0.00	0.00
249	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/4/2017	30-83	No	DEC	20	0:00	19:59	-44.41	-850.88	0.00	452.33	1.24	-44.22	0.00	0.00	0.00	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
250	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/4/2017	40-208	No	INC	18	0:00	17:29	159.37	-8371.53	0.00	-4990.93	70.29	-2895.15	0.00	0.00	0.00	0.00
251	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/5/2017	15-30	No	DEC	14	6:10	19:59	57.94	0.00	0.00	-3290.18	2.89	-103.69	0.00	0.00	0.00	0.00
252	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/5/2017	15-35	No	INC	18	6:10	23:59	128.62	0.00	0.00	-18191.81	0.00	0.00	0.00	0.00	0.00	0.00
253	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/6/2017	15-30	No	DEC	18	6:53	23:59	4.64	0.00	0.00	-39.79	0.00	0.00	0.00	0.00	0.00	0.00
254	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/6/2017	15-35	No	INC	24	0:00	23:59	27.67	396.40	0.00	-605.45	5.79	-183.21	0.00	0.00	0.00	0.00
255	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/7/2017	12-30	No	INC	24	0:00	23:59	16.64	396.63	0.00	91.55	3.51	-64.08	0.00	0.00	-110.24	0.00
256	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/7/2017	30	No	DEC	2	21:40	22:59	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
257	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/8/2017	10-105	No	INC	24	0:00	23:59	67.44	-3305.19	0.00	-1469.62	9.50	-355.70	0.00	0.00	0.00	0.00
258	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/8/2017	30-42	No	DEC	18	6:20	23:59	2.31	0.00	0.00	-101.89	1.09	-32.62	0.00	0.00	0.00	0.00
259	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/9/2017	10-40	No	INC	24	0:00	23:59	124.16	-1576.23	0.00	-3357.43	15.89	-622.70	0.00	0.00	0.00	0.00
260	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/9/2017	13-34	No	DEC	22	2:10	23:44	-8.93	-262.71	0.00	2040.77	3.08	-108.21	0.00	0.00	0.00	0.00
261	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/10/2017	15-68	No	DEC	11	13:05	23:29	-8.53	0.00	0.00	230.56	0.00	0.00	0.00	0.00	0.00	0.00
262	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/10/2017	15-68	No	INC	18	6:35	23:59	42.61	-2469.32	0.00	-1595.67	48.80	-1778.97	0.00	0.00	0.00	0.00
263	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/11/2017	10-35	No	DEC	18	5:30	23:29	23.99	-134.59	0.00	-927.99	4.79	-146.57	0.00	0.00	0.00	0.00
264	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/11/2017	10-35	No	INC	24	0:00	23:58	184.60	-7402.45	0.00	-3053.17	15.20	-577.21	0.00	0.00	0.00	0.00
265	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/12/2017	21-56	No	INC	19	5:30	23:59	134.31	-1904.11	0.00	-2730.28	7.44	-307.16	0.00	0.00	0.00	0.00
266	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/12/2017	28-34	No	DEC	17	6:17	23:14	-1.57	0.00	0.00	84.82	0.25	-9.26	0.00	0.00	0.00	0.00
267	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/13/2017	10-50	No	INC	24	0:00	23:59	78.74	-2278.13	0.00	-597.69	18.52	-646.93	0.00	0.00	0.00	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
268	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/13/2017	16	No	DEC	2	18:00	19:59	0.38	0.00	0.00	-15.57	0.00	0.00	0.00	0.00	0.00	0.00
269	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/14/2017	13-75	No	INC	24	0:00	23:59	-135.68	-6106.05	0.00	274.52	1.21	-48.84	0.00	0.00	0.00	0.00
270	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/14/2017	40	No	DEC	13	10:45	22:59	-47.56	0.00	0.00	940.59	0.00	0.00	0.00	0.00	0.00	0.00
271	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/15/2017	16-40	No	DEC	18	6:27	23:59	-37.89	0.00	0.00	1315.08	0.79	-29.30	0.00	0.00	0.00	0.00
272	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/15/2017	16-40	No	INC	24	0:00	23:59	-70.39	2187.24	0.00	16.68	2.50	-101.85	0.00	0.00	0.00	0.00
273	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/16/2017	12-60	No	DEC	18	5:00	22:59	32.71	0.00	0.00	-878.16	0.00	0.00	0.00	0.00	0.00	0.00
274	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/16/2017	12-176	No	INC	23	0:00	22:59	206.24	-6283.49	0.00	-4556.23	43.96	-1028.13	0.00	0.00	0.00	0.00
275	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/17/2017	10-48	No	INC	19	5:50	23:59	-7.06	0.00	0.00	2189.72	2.92	-115.53	0.00	0.00	0.00	0.00
276	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/18/2017	10-63	No	INC	24	0:15	23:59	34.70	0.00	0.00	-836.63	8.16	-251.75	0.00	0.00	0.00	0.00
277	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/18/2017	21-30	No	DEC	8	15:35	23:14	-2.82	0.00	0.00	94.51	0.00	0.00	0.00	0.00	0.00	0.00
278	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/19/2017	10-150	No	INC	24	0:00	23:59	129.38	-1061.96	0.00	-5106.49	16.30	-628.90	0.00	0.00	0.00	0.00
279	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/19/2017	16-50	No	DEC	17	6:15	22:29	0.62	0.00	0.00	-110.34	4.78	-172.46	0.00	0.00	0.00	0.00
280	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/20/2017	20-144	No	INC	24	0:00	23:59	289.34	-2262.84	0.00	-4313.97	2.93	-84.84	0.00	0.00	0.00	0.00
281	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/21/2017	16-64	No	DEC	13	10:05	22:29	-7.25	-311.27	0.00	190.68	0.00	0.00	0.00	0.00	0.00	0.00
282	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/21/2017	16-64	No	INC	24	0:00	23:59	117.84	-7010.59	0.00	-2538.86	23.30	-887.93	0.00	0.00	0.00	0.00
283	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/22/2017	14-65	No	INC	24	0:00	23:59	63.70	-7942.38	0.00	-1401.84	29.65	-1249.48	0.00	0.00	0.00	0.00
284	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/22/2017	24-45	No	DEC	17	7:15	23:59	-29.02	-11000.12	0.00	996.92	1.31	-47.46	0.00	0.00	0.00	0.00
285	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/23/2017	14	No	INC	1	0:00	0:59	17.67	0.00	0.00	-535.61	5.67	-250.83	0.00	0.00	0.00	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
286	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/25/2017	30-60	No	INC	3	21:15	23:59	9.31	-0.01	0.00	-149.99	0.99	-40.06	0.00	0.00	0.00	0.00
287	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/25/2017	47	No	DEC	3	21:15	23:59	-2.69	-342.09	0.00	47.87	1.00	-36.39	0.00	0.00	0.00	0.00
288	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/26/2017	15-66	No	INC	24	0:00	23:59	54.85	970.49	0.00	-1250.27	28.78	-1068.14	0.00	0.00	0.00	0.00
289	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/26/2017	21-33	No	DEC	15	5:55	19:59	-0.37	0.00	0.00	10.21	0.00	0.00	0.00	0.00	0.00	0.00
290	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/27/2017	15-21	No	INC	24	0:00	23:59	17.28	-4945.05	0.00	-271.40	6.51	-237.83	0.00	0.00	0.00	0.00
291	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/27/2017	16-21	No	DEC	15	9:00	23:59	-10.36	0.00	0.00	213.36	1.44	-52.21	0.00	0.00	0.00	0.00
292	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/28/2017	15-28	No	INC	24	0:00	23:59	10.27	0.00	0.00	-339.47	5.55	-192.76	0.00	0.00	0.00	0.00
293	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/28/2017	22	No	DEC	2	17:30	19:14	0.00	0.00	0.00	-0.02	0.00	0.00	0.00	0.00	0.00	0.00
294	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/29/2017	24-30	No	INC	7	17:35	23:59	5.61	-534.53	0.00	-208.21	7.14	-243.58	0.00	0.00	0.00	0.00
295	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/29/2017	48-60	No	DEC	7	17:35	23:59	-2.40	0.00	0.00	-3.90	6.38	-231.81	0.00	0.00	0.00	0.00
296	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/30/2017	12-30	No	INC	24	0:00	23:59	44.70	-2138.12	0.00	-1324.08	19.47	-779.73	0.00	0.00	0.00	0.00
297	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/30/2017	13	No	DEC	8	10:15	17:59	-1.25	0.00	0.00	43.71	0.00	0.00	0.00	0.00	0.00	0.00
298	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/31/2017	15-60	No	INC	24	0:00	23:59	42.22	-4405.42	0.00	-1440.19	28.40	-1113.98	0.00	0.00	0.00	0.00
299	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	5/31/2017	30	No	DEC	3	20:45	23:29	0.25	0.00	0.00	-2.54	0.00	0.00	0.00	0.00	0.00	0.00
300	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	6/1/2017	15	No	INC	8	0:00	7:59	-6.05	1041.26	0.00	-6.67	0.00	0.00	0.00	0.00	0.00	0.00
301	RT	Operating Procedure Number and Constraint (7120)	PG&E	NCNB	5/2/2017	60-175	No	DEC	6	18:55	23:59	-47.14	0.00	0.00	-2948.99	-46.62	0.00	-2983.90	0.00	0.00	0.00
302	RT	Operating Procedure Number and Constraint (7120)	PG&E	NCNB	5/3/2017	50-195	No	DEC	24	0:00	23:59	-296.48	0.00	0.00	937.33	-94.59	0.00	-6054.00	0.00	0.00	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
303	RT	Operating Procedure Number and Constraint (7120)	PG&E	NCNB	5/4/2017	55-190	No	DEC	24	0:00	23:59	74.30	0.00	0.00	-10744.14	-0.38	0.00	-24.00	0.00	0.00	0.00
304	RT	Operating Procedure Number and Constraint (7120)	PG&E	NCNB	5/5/2017	55-62	No	DEC	1	0:00	0:59	3.31	0.00	0.00	-69.08	0.00	0.00	0.00	0.00	0.00	0.00
305	RT	Operating Procedure Number and Constraint (7320)	PG&E	Bay Area	5/24/2017	120-190	No	INC	12	9:23	20:59	89.04	75162.04	0.00	-11347.77	0.00	0.00	0.00	0.00	0.00	0.00
306	RT	Operating Procedure Number and Constraint (7410)	PG&E	Stockton	5/19/2017	261	No	DEC	1	23:40	23:59	-36.18	-394.59	0.00	782.55	0.00	0.00	0.00	0.00	0.00	0.00
307	RT	Operating Procedure Number and Constraint (7410)	PG&E	Stockton	5/20/2017	261	No	INC	1	0:00	0:29	0.00	1913.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
308	RT	Operating Procedure Number and Constraint (7430)	PG&E	Fresno	5/4/2017	140	No	INC	1	23:05	23:59	79.50	4975.80	0.00	-2033.39	38.00	-1293.90	0.00	0.00	0.00	0.00
309	RT	Operating Procedure Number and Constraint (7430)	PG&E	Fresno	5/5/2017	83-280	Yes	INC	6	0:00	5:59	20.55	10856.30	0.00	-640.73	14.25	-485.21	0.00	0.00	0.00	0.00
310	RT	Operating Procedure Number and Constraint (7820)	SDG&E	San Diego-IV	5/31/2017	50	No	INC	3	7:10	9:59	28.69	8664.70	0.00	-1043.55	0.00	-0.09	0.00	0.00	0.00	0.00
311	RT	Other Reliability Requirement	N/A	N/A	5/2/2017	7	No	DEC	1	10:30	11:29	0.54	0.00	0.00	16.42	-0.07	0.00	-10.00	0.00	0.00	0.00
312	RT	Other Reliability Requirement	N/A	N/A	5/2/2017	7-16	No	INC	8	10:30	17:59	5.17	0.00	0.00	-85.08	0.00	0.00	0.00	0.00	0.00	0.00
313	RT	Other Reliability Requirement	PG&E	Fresno	5/2/2017	29	No	INC	8	10:30	17:59	-4.33	0.00	0.00	131.87	0.00	0.00	0.00	0.00	0.00	0.00
314	RT	Other Reliability Requirement	PG&E	Fresno	5/2/2017	29-30	No	DEC	8	10:30	17:59	-8.38	0.00	0.00	-427.30	-8.19	0.00	-336.25	0.00	0.00	0.00
315	RT	Other Reliability Requirement	PG&E	Fresno	5/3/2017	75	No	DEC	1	19:12	19:29	6.87	-1440.21	0.00	-566.54	0.00	0.00	0.00	0.00	0.00	0.00
316	RT	Other Reliability Requirement	PG&E	N/A	5/1/2017	100-160	No	DEC	9	12:15	20:59	1116.36	0.00	0.00	137.57	-1036.44	0.00	0.00	0.00	0.00	0.00
317	RT	Other Reliability Requirement	PG&E	N/A	5/8/2017	110-190	No	DEC	14	7:49	21:09	2056.12	0.00	0.00	4891.72	-1842.18	0.00	0.00	0.00	0.00	0.00
318	RT	Other Reliability Requirement	PG&E	N/A	5/11/2017	100-240	No	DEC	15	7:55	22:07	1612.27	0.00	0.00	55801.91	-1410.01	0.00	53255.48	0.00	-	53226.94
319	RT	Other Reliability Requirement	PG&E	N/A	5/12/2017	150	No	DEC	13	9:55	22:05	1019.57	0.00	0.00	21830.71	-872.06	0.00	18784.78	0.00	-	18784.78

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Chart 2: Table of Exceptional Dispatches for Period 01/May/2017 - 31/May/2017

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	
320	RT	Other Reliability Requirement	PG&E	Stockton	5/3/2017	25-120	No	DEC	20	3:03	22:41	-741.71	0.00	0.00	29552.26	-605.57	0.00	43294.53	0.00	-	18291.27	0.00
321	RT	Other Reliability Requirement	PG&E	Stockton	5/7/2017	33	No	DEC	5	19:15	23:58	0.79	0.00	0.00	-38.98	-0.65	0.00	0.00	0.00	0.00	0.00	0.00
322	RT	Other Reliability Requirement	PG&E	Stockton	5/7/2017	33	No	INC	5	19:15	23:58	-2.30	0.00	0.00	55.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
323	RT	Other Reliability Requirement	PG&E	Stockton	5/8/2017	33-50	No	DEC	22	0:00	21:09	-193.15	0.00	0.00	-7363.11	-147.92	0.00	0.00	0.00	0.00	0.00	0.00
324	RT	Other Reliability Requirement	PG&E	Stockton	5/8/2017	50	No	INC	13	1:20	13:58	-3.85	0.00	0.00	60.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
325	RT	Other Reliability Requirement	PG&E	Stockton	5/9/2017	20-40	No	DEC	18	0:00	17:24	-735.02	0.00	0.00	1448.88	-570.49	0.00	28444.28	0.00	-	28444.26	0.00
326	RT	Other Reliability Requirement	PG&E	Stockton	5/10/2017	40-50	No	DEC	24	0:00	23:58	-329.22	0.00	0.00	5370.83	-329.07	0.00	5363.48	0.00	-5360.70	0.00	0.00
327	RT	Other Reliability Requirement	PG&E	Stockton	5/11/2017	25-30	No	INC	24	0:35	23:58	-4.53	0.00	0.00	44.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00
328	RT	Other Reliability Requirement	PG&E	Stockton	5/11/2017	25-40	No	DEC	24	0:12	23:58	1274.02	0.00	0.00	-77872.44	-707.34	0.00	20152.77	0.00	-	20122.46	0.00
329	RT	Other Reliability Requirement	PG&E	Stockton	5/12/2017	10	No	DEC	22	2:55	23:58	-280.08	0.00	0.00	-2253.08	-107.49	0.00	498.90	0.00	-536.89	0.00	0.00
330	RT	Other Reliability Requirement	PG&E	Stockton	5/12/2017	10-30	No	INC	24	0:00	23:58	-128.87	0.00	0.00	62.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00
331	RT	Other Reliability Requirement	PG&E	Stockton	5/13/2017	10-30	No	DEC	24	0:00	23:00	-101.68	0.00	0.00	1694.50	-88.40	0.00	1729.95	0.00	-1748.27	0.00	0.00
332	RT	Other Reliability Requirement	PG&E	Stockton	5/13/2017	30-50	No	INC	23	1:00	23:58	-279.87	0.00	0.00	-2253.33	-35.61	0.00	399.05	0.00	-401.85	0.00	0.00
333	RT	Other Reliability Requirement	PG&E	Stockton	5/14/2017	15-50	No	DEC	24	0:00	23:04	-128.36	0.00	0.00	5215.69	-130.70	0.00	5289.10	0.00	-5329.33	0.00	0.00
334	RT	Other Reliability Requirement	PG&E	Stockton	5/14/2017	50	No	INC	21	0:00	20:12	-220.46	0.00	0.00	-2582.83	-13.56	0.00	327.07	0.00	-328.15	0.00	0.00
335	RT	Other Reliability Requirement	PG&E	Stockton	5/15/2017	30	No	DEC	2	0:00	1:59	-32.62	0.00	0.00	433.86	-34.34	0.00	450.64	0.00	-455.03	0.00	0.00
336	RT	Other Reliability Requirement	PG&E	Stockton	5/15/2017	30-50	No	INC	7	0:00	6:23	-38.87	0.00	0.00	277.94	-25.59	0.00	299.68	0.00	-300.68	0.00	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
337	RT	Other Reliability Requirement	PG&E	Stockton	5/16/2017	45-55	No	DEC	4	16:25	19:59	-33.15	0.00	0.00	-1884.85	-38.05	0.00	-1405.42	0.00	-2084.61	0.00
338	RT	Other Reliability Requirement	PG&E	Stockton	5/16/2017	45-55	No	INC	4	16:25	19:59	-8.59	0.00	0.00	182.45	-8.28	0.00	176.70	0.00	0.00	0.00
339	RT	Other Reliability Requirement	PG&E	Stockton	5/18/2017	25	No	DEC	4	16:55	19:59	-92.83	0.00	0.00	1141.73	-87.05	0.00	2061.39	0.00	-1585.92	0.00
340	RT	Other Reliability Requirement	PG&E	Stockton	5/20/2017	30-50	No	DEC	9	11:20	20:16	-96.53	0.00	0.00	4496.02	-98.29	0.00	4473.01	0.00	-4462.26	0.00
341	RT	Other Reliability Requirement	PG&E	Stockton	5/20/2017	30	No	INC	6	11:20	16:24	-2.07	0.00	0.00	45.85	0.00	0.00	0.00	0.00	0.00	0.00
342	RT	Other Reliability Requirement	PG&E	Stockton	5/25/2017	50	No	DEC	8	16:15	23:59	-68.54	0.00	0.00	974.91	-69.61	0.00	986.78	0.00	-769.01	0.00
343	RT	Other Reliability Requirement	PG&E	Stockton	5/26/2017	50	No	INC	14	0:00	13:10	3.98	0.00	0.00	35.69	-2.71	0.00	35.76	0.00	-3.95	0.00
344	RT	Other Reliability Requirement	PG&E	Stockton	5/26/2017	50-55	No	DEC	14	0:00	13:10	-10.10	0.00	0.00	6.14	-11.46	0.00	133.77	0.00	-78.71	0.00
345	RT	Other Reliability Requirement	SCE	LA Basin	5/23/2017	65-130	No	DEC	7	14:00	20:59	-87.69	0.00	0.00	2248.63	0.00	0.00	0.00	0.00	0.00	0.00
346	RT	Other Reliability Requirement	SCE	LA Basin	5/23/2017	130-512	No	INC	7	14:00	20:59	61.11	108155.42	66249.07	-2063.95	45.49	-1660.83	0.00	-342.68	0.00	0.00
347	RT	Other Reliability Requirement	SCE	N/A	5/22/2017	400	No	DEC	1	17:30	17:59	2.13	0.00	0.00	-72.62	0.00	0.00	0.00	0.00	0.00	0.00
348	RT	Other Reliability Requirement	SCE	N/A	5/22/2017	410	No	INC	4	17:35	20:59	54.25	-1903.02	0.00	-2110.24	0.00	0.00	0.00	0.00	0.00	0.00
349	RT	Other Reliability Requirement	SDG&E	San Diego-IV	5/23/2017	131	No	INC	7	14:30	20:59	649.84	98060.53	0.00	-19846.35	0.05	-2.26	0.00	0.00	0.00	0.00
350	RT	Planned Transmission Outage and Constraint	Intertie	N/A	5/2/2017	250	No	DEC	2	18:30	19:59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
351	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	5/8/2017	555	No	INC	6	18:55	23:59	22.71	0.00	0.00	-717.56	4.44	-140.44	0.00	0.00	-916.32	0.00
352	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	5/9/2017	331-500	No	DEC	10	6:20	15:59	-281.25	0.00	0.00	7087.45	0.00	0.00	0.00	0.00	0.00	0.00
353	RT	Planned Transmission Outage and Constraint	PG&E	Bay Area	5/9/2017	331-735	No	INC	16	0:00	15:59	-472.02	3867.23	0.00	113615.90	392.72	-7629.45	0.00	0.00	-	14425.92
354	RT	Planned Transmission Outage and Constraint	PG&E	Fresno	5/1/2017	8	No	DEC	9	10:10	18:44	-0.13	0.00	0.00	1.47	-1.71	0.00	-256.92	0.00	-169.51	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
355	RT	Planned Transmission Outage and Constraint	PG&E	Fresno	5/1/2017	8	No	INC	9	10:10	18:44	-0.98	0.00	0.00	30.23	0.00	0.00	0.00	0.00	0.00	0.00
356	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/2/2017	28-105	No	DEC	15	9:45	23:59	-419.00	-174.15	0.00	8300.60	20.70	-259.85	0.00	0.00	-546.38	0.00
357	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/2/2017	30-68	No	INC	15	9:45	23:59	-82.13	-2745.57	0.00	2098.66	6.15	-40.43	0.00	0.00	-850.88	0.00
358	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/3/2017	40	No	INC	13	0:00	12:29	71.72	-3334.14	0.00	-1393.70	19.25	-265.64	0.00	0.00	-2235.47	0.00
359	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/4/2017	30-54	No	DEC	3	21:45	23:59	2.39	-87.66	0.00	-46.34	1.20	-30.89	0.00	0.00	-11.83	0.00
360	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/4/2017	30-54	No	INC	3	21:45	23:59	24.93	-1446.39	0.00	-544.45	3.21	-78.61	0.00	0.00	-40.72	0.00
361	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/5/2017	30	No	INC	1	0:00	0:59	-5.54	-528.64	0.00	130.22	0.00	0.00	0.00	0.00	0.00	0.00
362	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/7/2017	27	No	DEC	13	7:50	19:59	-2.53	0.00	0.00	50.07	0.00	0.00	0.00	0.00	0.00	0.00
363	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/7/2017	27-32	No	INC	13	7:50	19:59	36.92	-1586.49	0.00	-1759.64	8.07	-595.87	0.00	0.00	-2315.21	0.00
364	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/16/2017	20-40	No	INC	2	6:20	8:14	9.73	0.00	0.00	-291.03	1.86	-43.88	0.00	0.00	0.00	0.00
365	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/17/2017	36	No	DEC	13	7:25	19:59	5.79	0.00	0.00	1196.05	0.00	0.00	0.00	0.00	0.00	0.00
366	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/17/2017	36-48	No	INC	13	7:25	19:59	62.04	-4843.62	0.00	-32.03	4.19	-92.74	0.00	0.00	-1008.82	0.00
367	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/23/2017	30-102	No	DEC	19	5:25	23:59	5.25	-6052.32	0.00	-83.60	7.92	-195.91	0.00	0.00	-122.25	0.00
368	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/23/2017	45-161	No	INC	19	5:25	23:59	106.02	-4552.30	0.00	-2327.46	51.24	-1298.37	0.00	0.00	-2193.82	0.00
369	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/24/2017	22-57	No	DEC	21	3:45	23:59	-6.88	-272.35	0.00	-1890.08	0.00	0.00	0.00	0.00	0.00	0.00
370	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/24/2017	33-103	No	INC	24	0:00	23:59	154.92	-7154.97	0.00	-7589.78	96.81	-5856.58	0.00	0.00	-8610.54	0.00
371	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/25/2017	44	No	DEC	5	15:05	19:59	2.67	0.00	0.00	-30.55	0.00	0.00	0.00	0.00	0.00	0.00
372	RT	Planned Transmission Outage and Constraint	PG&E	Humboldt	5/25/2017	44-77	No	INC	20	0:00	19:59	183.44	9548.15	0.00	-2426.66	106.62	-1193.95	0.00	0.00	-1039.16	0.00

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
373	RT	Planned Transmission Outage and Constraint	PG&E	N/A	5/7/2017	49-178	No	DEC	13	7:35	19:59	-30.36	0.00	0.00	91.97	-42.16	0.00	-102.67	0.00	-101.05	0.00
374	RT	Planned Transmission Outage and Constraint	PG&E	N/A	5/7/2017	66	No	INC	13	7:35	19:59	-2.00	0.00	0.00	-36.54	-2.00	0.00	-36.54	0.00	-8.95	0.00
375	RT	Planned Transmission Outage and Constraint	PG&E	N/A	5/9/2017	500	No	DEC	5	19:45	23:59	-0.48	-19658.57	0.00	-661.09	0.00	0.00	0.00	0.00	-112.70	0.00
376	RT	Planned Transmission Outage and Constraint	PG&E	N/A	5/9/2017	500	No	INC	5	19:45	23:59	-0.96	12077.70	0.00	16.02	0.00	0.00	0.00	0.00	0.00	0.00
377	RT	Planned Transmission Outage and Constraint	PG&E	N/A	5/10/2017	500	No	DEC	6	18:10	23:59	-515.85	-21744.88	0.00	3713.58	0.00	0.00	0.00	0.00	-22.76	0.00
378	RT	Planned Transmission Outage and Constraint	PG&E	N/A	5/10/2017	500	No	INC	6	18:10	23:59	-223.88	12182.30	0.00	4991.09	0.00	0.00	0.00	0.00	0.00	0.00
379	RT	Planned Transmission Outage and Constraint	PG&E	N/A	5/11/2017	500	No	INC	6	0:00	5:44	-87.50	3110.14	0.00	2200.96	0.00	0.00	0.00	0.00	0.00	0.00
380	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/1/2017	28-140	No	DEC	14	7:12	20:59	-35.77	0.00	0.00	-57.83	-44.06	0.00	20.90	0.00	-4589.24	0.00
381	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/2/2017	125-150	No	DEC	13	4:20	16:59	-63.75	0.00	0.00	823.44	-77.58	0.00	1026.84	0.00	-7149.47	0.00
382	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/9/2017	130-163	No	DEC	20	0:40	19:59	-77.35	0.00	0.00	1650.93	-109.36	0.00	2307.56	0.00	-	18889.18
383	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/10/2017	120-212	No	DEC	16	8:50	23:59	-43.07	0.00	0.00	-1400.38	-49.11	0.00	-	1239.26	0.00	-
384	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/11/2017	40-231	No	DEC	24	0:00	23:59	-65.38	0.00	0.00	-4012.66	-85.71	0.00	-	3329.39	0.00	-
385	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/12/2017	150	No	DEC	12	10:15	21:59	-10.35	0.00	0.00	219.97	-10.50	0.00	223.45	0.00	-3557.12	0.00
386	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/13/2017	45-65	No	INC	24	0:00	23:59	-38.25	0.00	0.00	-413.48	0.00	0.00	0.00	0.00	0.00	0.00
387	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/13/2017	205-225	No	DEC	24	0:00	23:59	-69.80	0.00	0.00	-296.42	-7.73	0.00	134.91	0.00	-	24653.93
388	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/14/2017	65	No	INC	24	0:00	23:59	-85.42	0.00	0.00	-444.15	0.00	0.00	0.00	0.00	0.00	0.00
389	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/14/2017	205	No	DEC	24	0:00	23:59	0.01	0.00	0.00	-0.13	0.00	0.00	0.00	0.00	-	14204.20

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390	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/15/2017	45-65	No	INC	24	0:00	23:59	-72.43	0.00	0.00	-5.09	0.00	0.00	0.00	0.00	0.00	0.00	
391	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/15/2017	205-375	No	DEC	24	0:00	23:59	-8.29	0.00	0.00	127.88	-9.33	0.00	153.65	0.00	-	20617.17	0.00
392	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/16/2017	115-135	No	DEC	24	0:00	23:59	-181.02	0.00	0.00	135.51	-2.33	0.00	29.54	0.00	-	20145.72	0.00
393	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/16/2017	135-155	No	INC	24	0:00	23:59	-13.27	0.00	0.00	-30.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00
394	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/17/2017	20	No	DEC	11	0:00	10:29	40.80	0.00	0.00	-2262.12	0.00	0.00	0.00	0.00	-8620.45	0.00	
395	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/17/2017	250	No	INC	19	0:00	18:59	-3.03	0.00	0.00	51.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
396	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/24/2017	3-42	No	INC	10	10:45	19:59	-28.60	0.00	0.00	567.90	-37.80	0.00	802.64	0.00	-802.25	0.00	
397	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/24/2017	42	No	DEC	8	12:45	19:59	-1.72	0.00	0.00	45.14	-2.05	0.00	55.97	0.00	-3309.33	0.00	
398	RT	Planned Transmission Outage and Constraint	PG&E	Sierra	5/25/2017	160	No	DEC	8	12:20	20:14	-5.56	0.00	0.00	90.13	-5.54	0.00	89.83	0.00	-513.89	0.00	
399	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/12/2017	60	No	DEC	20	2:30	21:59	-5.72	0.00	0.00	25.63	-6.23	0.00	36.61	0.00	-1431.08	0.00	
400	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/12/2017	60	No	INC	20	2:30	21:59	10.48	0.00	0.00	273.65	0.00	0.00	0.00	0.00	0.00	0.00	
401	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/13/2017	60-80	No	DEC	18	5:05	22:24	-62.93	0.00	0.00	161.53	-21.92	0.00	195.05	0.00	-706.00	0.00	
402	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/13/2017	75-171	No	INC	16	6:00	21:49	70.88	8122.49	0.00	453.18	0.00	0.00	0.00	0.00	-0.40	0.00	
403	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/14/2017	60-75	No	DEC	19	5:00	23:59	-14.41	0.00	0.00	50.93	-19.50	0.00	55.48	0.00	-2733.02	0.00	
404	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/14/2017	60-75	No	INC	19	5:00	23:59	68.10	0.00	0.00	829.25	0.00	0.00	0.00	0.00	-3.34	0.00	
405	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/16/2017	50-80	No	DEC	15	5:00	19:59	-95.61	0.00	0.00	-1768.85	-50.37	0.00	-	1129.57	-1166.96	0.00	
406	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/16/2017	60-250	No	INC	17	6:50	22:59	57.39	630.14	0.00	495.36	46.11	501.77	181.51	0.00	-2266.07	0.00	
407	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/17/2017	135-160	No	DEC	12	9:20	21:14	-14.05	-30240.48	0.00	1399.23	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/May/2017 - 31/May/2017

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	
408	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/17/2017	135-320	No	INC	13	8:45	21:14	-299.03	154206.38	0.00	3168.80	-72.78	49.90	1343.60	0.00	-	12080.04	0.00
409	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/18/2017	96	No	INC	1	0:55	1:44	1.75	0.00	0.00	4.30	0.10	-1.17	0.00	0.00	-2.82	0.00	
410	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/19/2017	62-140	No	DEC	18	6:10	23:59	-3.41	0.00	0.00	245.37	-9.63	0.00	231.02	0.00	-1736.07	0.00	
411	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/19/2017	70	No	INC	12	8:15	19:59	-74.07	0.00	0.00	1090.79	0.00	0.00	0.00	0.00	0.00	0.00	
412	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/20/2017	60-75	No	INC	24	0:00	23:59	32.58	0.00	0.00	-7.38	0.00	0.00	0.00	0.00	0.00	0.00	
413	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/20/2017	70-75	No	DEC	20	4:45	23:59	-3.00	0.00	0.00	131.43	-4.95	0.00	153.78	0.00	-999.01	0.00	
414	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/23/2017	100	No	DEC	11	10:45	20:59	-3.59	0.00	0.00	72.51	0.00	0.00	0.00	0.00	0.00	0.00	
415	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/23/2017	100-155	No	INC	11	10:45	20:59	112.13	11696.16	3804.85	-3090.09	64.01	-1664.81	0.00	0.00	-51.79	0.00	
416	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/26/2017	96-145	No	INC	6	18:43	23:59	13.28	7479.24	0.00	-211.34	4.55	-0.16	0.00	0.00	-318.00	0.00	
417	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/27/2017	126-201	No	INC	24	0:00	23:59	-161.33	109336.74	0.00	4103.23	7.59	-126.25	18.31	0.00	-	11923.03	0.00
418	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/28/2017	50-100	No	DEC	12	6:45	17:59	-27.35	0.00	0.00	-739.92	-23.64	0.00	-146.01	0.00	-1.57	0.00	
419	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/28/2017	50-100	No	INC	12	6:45	17:59	14.74	0.00	0.00	1926.58	0.00	0.00	0.00	0.00	0.00	0.00	
420	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/29/2017	20-30	No	DEC	22	2:43	23:58	-11.53	0.00	0.00	-1749.82	0.00	0.00	0.00	0.00	0.00	0.00	
421	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/29/2017	20-30	No	INC	22	2:43	23:58	-4.55	0.00	0.00	-52.41	0.00	0.00	0.00	0.00	0.00	0.00	
422	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/30/2017	17-30	No	DEC	24	0:00	23:20	-26.35	0.00	0.00	379.68	-29.99	0.00	421.49	0.00	-417.51	0.00	
423	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/30/2017	17-30	No	INC	24	0:00	23:58	-7.54	0.00	0.00	145.60	-3.45	0.00	59.51	0.00	-57.15	0.00	
424	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/31/2017	20	No	DEC	24	0:00	23:58	-8.33	0.00	0.00	-1302.09	-0.20	0.00	4.40	0.00	-4.08	0.00	
425	RT	Planned Transmission Outage and Constraint	PG&E	Stockton	5/31/2017	20	No	INC	24	0:00	23:58	-3.05	0.00	0.00	-296.09	0.00	0.00	0.00	0.00	0.00	0.00	

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620	
426	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	5/13/2017	656-725	No	DEC	5	19:06	23:59	-88.57	0.00	0.00	-2782.45	-46.63	0.00	922.39	0.00	-3238.87	0.00	
427	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	5/14/2017	525-1100	No	DEC	6	18:40	23:59	-305.96	0.00	0.00	11092.89	-335.74	0.00	11918.69	0.00	-	58840.80	0.00
428	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	5/14/2017	690	No	INC	4	0:00	3:59	-401.27	0.00	0.00	-2522.90	0.00	0.00	0.00	0.00	0.00	0.00	
429	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	5/15/2017	575-625	No	INC	2	0:00	1:59	-43.62	0.00	0.00	523.66	0.00	0.00	0.00	0.00	0.00	0.00	
430	RT	Planned Transmission Outage and Constraint	SCE	Big Creek-Ventura	5/15/2017	590	No	DEC	3	5:20	7:59	-172.77	0.00	0.00	1296.35	-62.39	0.00	1608.92	0.00	-	11186.58	0.00
431	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/12/2017	6	No	DEC	10	8:20	17:59	-2.47	0.00	0.00	40.50	0.00	0.00	0.00	0.00	0.00	0.00	
432	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/12/2017	47-53	No	INC	10	8:20	17:59	-23.21	0.00	0.00	330.77	0.00	0.00	0.00	0.00	0.00	0.00	
433	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/13/2017	48-51	No	INC	10	8:05	17:59	2.09	0.00	0.00	150.21	0.00	0.00	0.00	0.00	0.00	0.00	
434	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/14/2017	35-60	No	INC	8	10:50	17:59	-26.45	0.00	0.00	-137.67	0.00	0.00	0.00	0.00	0.00	0.00	
435	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/16/2017	63	No	INC	10	10:30	19:59	-623.62	73135.56	0.00	1766.74	0.00	0.00	0.00	0.00	-3.54	0.00	
436	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/23/2017	12-35	No	INC	4	15:45	18:59	21.01	0.00	0.00	-311.73	0.00	0.00	0.00	0.00	0.00	0.00	
437	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/24/2017	18	No	DEC	8	11:15	19:14	-13.28	0.00	0.00	388.28	0.00	0.00	0.00	0.00	-238.62	0.00	
438	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/24/2017	44	No	INC	15	9:54	23:59	-12.01	1756.15	0.00	-1409.10	-4.22	0.00	104.85	0.00	-102.69	0.00	
439	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/25/2017	200	No	INC	24	0:00	23:59	3.70	92508.18	5618.59	88.51	0.00	0.00	0.00	0.00	-0.27	0.00	
440	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/26/2017	200	No	INC	22	0:00	21:59	-414.02	143237.41	0.00	6086.43	0.00	0.00	0.00	0.00	-0.37	0.00	
441	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/31/2017	37	No	DEC	9	12:18	20:59	1.89	0.00	0.00	-43.79	0.00	0.00	0.00	0.00	0.00	0.00	
442	RT	Planned Transmission Outage and Constraint	SDG&E	San Diego-IV	5/31/2017	37-87	No	INC	10	11:23	20:59	50.50	23328.63	45.30	-5343.78	0.07	-1.54	0.00	0.00	-13.27	0.00	
443	RT	Software Limitation	PG&E	Bay Area	5/3/2017	0	No	DEC	3	21:30	23:59	-9.17	-663.23	0.00	-20.24	-10.00	0.00	0.00	0.00	0.00	0.00	

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Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load Cost	Start Up Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
444	RT	Software Limitation	PG&E	Bay Area	5/3/2017	0	No	INC	3	21:30	23:59	-0.83	0.00	0.00	24.96	0.00	0.00	0.00	0.00	0.00	0.00
445	RT	Software Limitation	PG&E	Bay Area	5/5/2017	0	No	INC	2	0:15	1:19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
446	RT	Software Limitation	PG&E	Bay Area	5/10/2017	0	No	DEC	4	19:00	22:59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
447	RT	Software Limitation	PG&E	Bay Area	5/10/2017	0	No	INC	4	19:00	22:59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
448	RT	Software Limitation	PG&E	Bay Area	5/21/2017	0	No	INC	1	11:15	12:14	-17.18	0.00	0.00	143.34	-10.00	0.00	0.00	0.00	0.00	0.00
449	RT	Software Limitation	PG&E	Bay Area	5/21/2017	330	No	DEC	1	17:00	17:59	127.85	-5347.10	0.00	-4262.60	0.00	0.00	0.00	0.00	0.00	0.00
450	RT	Software Limitation	PG&E	Fresno	5/4/2017	0	No	INC	6	18:20	23:59	16.58	0.00	0.00	-488.09	0.00	0.00	0.00	0.00	0.00	0.00
451	RT	Software Limitation	PG&E	Fresno	5/7/2017	-640	No	DEC	1	15:45	16:44	-434.77	0.00	0.00	62608.45	0.00	0.00	0.00	0.00	0.00	0.00
452	RT	Software Limitation	PG&E	Fresno	5/18/2017	83	No	INC	1	16:00	16:59	3.46	0.00	0.00	-52.65	0.00	0.00	0.00	0.00	0.00	0.00
453	RT	Software Limitation	PG&E	Fresno	5/23/2017	0	No	INC	1	22:10	23:09	-41.50	0.00	0.00	0.00	-41.50	0.00	0.00	0.00	0.00	0.00
454	RT	Software Limitation	PG&E	Humboldt	5/4/2017	32	No	INC	1	1:45	2:14	-3.92	-262.98	0.00	82.25	0.00	0.00	0.00	0.00	0.00	0.00
455	RT	Software Limitation	PG&E	Humboldt	5/16/2017	16	No	INC	2	22:40	23:59	-0.22	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
456	RT	Software Limitation	PG&E	N/A	5/14/2017	0	No	INC	2	1:20	2:49	-96.67	0.00	0.00	-1069.87	-93.33	0.00	-1032.98	0.00	0.00	0.00
457	RT	Software Limitation	PG&E	N/A	5/14/2017	175	No	DEC	1	19:45	20:29	52.12	-2058.33	4518.10	-1264.31	0.00	0.00	0.00	0.00	0.00	0.00
458	RT	Software Limitation	PG&E	N/A	5/18/2017	0	No	INC	2	0:20	1:54	-21.67	0.00	0.00	-568.75	-18.30	0.00	-480.24	0.00	0.00	0.00
459	RT	Software Limitation	PG&E	N/A	5/21/2017	0	No	INC	1	11:15	12:14	-16.73	0.00	0.00	132.52	-10.00	0.00	0.00	0.00	0.00	0.00
460	RT	Software Limitation	PG&E	N/A	5/22/2017	49	No	DEC	4	16:15	19:59	-8.17	-21524.11	0.00	-210.91	0.00	0.00	0.00	0.00	0.00	0.00
461	RT	Software Limitation	SCE	Big Creek-Ventura	5/7/2017	555	No	DEC	7	13:55	19:59	-386.52	0.00	0.00	13632.69	0.00	0.00	0.00	0.00	0.00	0.00

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462	RT	Software Limitation	SCE	Big Creek-Ventura	5/7/2017	555	No	INC	7	13:55	19:59	-125.82	0.00	0.00	3617.04	11.40	-0.11	0.00	0.00	0.00	0.00
463	RT	Software Limitation	SCE	LA Basin	5/6/2017	0	No	INC	1	0:15	1:14	-11.35	0.00	0.00	0.00	-11.35	0.00	0.00	0.00	0.00	0.00
464	RT	Software Limitation	SCE	LA Basin	5/12/2017	0	No	INC	1	11:10	11:49	-24.15	0.00	0.00	0.00	-24.15	0.00	0.00	0.00	0.00	0.00
465	RT	Software Limitation	SCE	LA Basin	5/18/2017	0	No	DEC	1	21:00	21:54	-23.32	-553.51	0.00	775.48	-23.32	0.00	775.48	0.00	0.00	0.00
466	RT	Unit Testing	PG&E	Bay Area	5/16/2017	225	No	INC	5	19:05	23:59	145.70	36593.46	0.00	-4254.82	32.29	-1126.43	0.00	0.00	0.00	0.00
467	RT	Unit Testing	PG&E	N/A	5/2/2017	471	No	DEC	1	13:25	13:54	1.78	0.00	0.00	-56.17	-2.33	0.00	65.52	0.00	0.00	0.00
468	RT	Unit Testing	SCE	Big Creek-Ventura	5/21/2017	50-705	No	INC	11	13:00	23:59	2093.10	207825.31	180557.24	-88440.41	1559.90	-73688.93	0.00	0.00	0.00	0.00
469	RT	Unit Testing	SCE	Big Creek-Ventura	5/22/2017	50-1500	No	INC	24	0:00	23:59	429.49	448064.25	0.00	-3960.35	229.96	-2705.85	0.00	-2860.61	0.00	0.00
470	RT	Unit Testing	SCE	Big Creek-Ventura	5/23/2017	50-1526	No	INC	23	0:00	22:14	1146.44	648058.67	102019.99	-38443.21	1188.44	-39558.76	0.00	0.00	0.00	0.00
471	RT	Unit Testing	SCE	Big Creek-Ventura	5/24/2017	100	No	INC	9	0:00	8:59	23.91	125973.05	0.00	-516.36	0.00	-0.10	0.00	0.00	0.00	0.00
472	RT	Unit Testing	SCE	LA Basin	5/5/2017	139	No	DEC	1	19:15	19:59	-14.02	0.00	0.00	306.61	4.68	-258.38	0.00	0.00	0.00	0.00
473	RT	Unit Testing	SCE	LA Basin	5/5/2017	254	No	INC	1	22:01	22:59	-47.86	15133.50	0.00	985.68	16.23	-894.73	0.00	0.00	0.00	0.00
474	RT	Unit Testing	SCE	LA Basin	5/10/2017	26-34	No	INC	2	21:23	22:44	-10.31	1494.78	0.00	278.76	1.06	-48.63	0.00	0.00	0.00	0.00
475	RT	Unit Testing	SCE	LA Basin	5/12/2017	96	No	INC	2	10:01	11:04	88.97	2367.00	0.00	-3052.44	43.90	-2159.05	0.00	0.00	0.00	0.00
476	RT	Unit Testing	SCE	LA Basin	5/16/2017	180-200	No	DEC	4	17:00	20:44	153.88	0.00	0.00	-6047.92	39.01	-1421.31	0.00	0.00	0.00	0.00
477	RT	Unit Testing	SCE	LA Basin	5/16/2017	180-990	No	INC	7	17:00	23:59	543.72	32597.03	0.00	-17177.26	441.36	-17612.95	0.00	0.00	0.00	0.00
478	RT	Unit Testing	SCE	LA Basin	5/17/2017	990	No	INC	1	0:00	0:59	-742.50	27286.16	0.00	11676.18	0.00	0.00	0.00	0.00	0.00	0.00
479	RT	Unit Testing	SCE	LA Basin	5/20/2017	70-497	No	INC	14	10:00	23:59	1477.55	133623.94	62156.45	-42826.55	405.92	-10902.76	0.00	0.00	0.00	0.00

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480	RT	Unit Testing	SCE	LA Basin	5/21/2017	70-240	No	INC	24	0:00	23:59	446.80	265277.31	0.00	-11620.70	153.41	-6081.23	0.00	0.00	0.00	0.00
481	RT	Unit Testing	SCE	LA Basin	5/22/2017	70-665	No	INC	24	0:00	23:59	-875.89	305615.69	0.00	30320.35	221.32	-8158.65	0.00	0.00	0.00	0.00
482	RT	Unit Testing	SCE	LA Basin	5/23/2017	130-373	No	INC	24	0:00	23:59	152.14	101970.72	0.00	-4772.47	177.29	-4997.96	0.00	0.00	0.00	0.00
483	RT	Unit Testing	SDG&E	San Diego-IV	5/2/2017	47	No	INC	1	20:06	20:59	12.54	485.18	0.00	-629.44	5.07	-325.13	0.00	0.00	0.00	0.00
484	RT	Unit Testing	SDG&E	San Diego-IV	5/22/2017	20-104	No	INC	9	15:00	23:59	38.72	27952.72	0.00	-3178.52	23.65	-1232.50	0.00	0.00	0.00	0.00
485	RT	Unplanned Outage	PG&E	Bay Area	5/19/2017	54	No	INC	5	17:30	21:59	-3.02	11808.08	12037.60	115.70	0.00	0.00	0.00	0.00	0.00	0.00
486	RT	Unplanned Outage	SCE	LA Basin	5/19/2017	130	No	INC	7	15:00	21:59	-211.25	13110.58	0.00	6116.51	0.00	0.00	0.00	-3001.22	0.00	0.00
487	RT	Voltage Support	PG&E	Fresno	5/7/2017	83	No	INC	1	7:00	7:24	10.38	0.00	0.00	-281.80	0.00	-0.04	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 through

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.

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 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 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 resource 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. Out of the 8,064 five-minute intervals in May, this resource was issued exceptional dispatch instructions in 657 five-minute intervals. This resource was eligible to set the LMP in 410 intervals. Out of the 410 intervals, resource calculated LMP was larger than the market LMP in 381 intervals. In the 381 intervals, the average increase in five minute LMP was \$20.22/MWh. Out of the 410 intervals, resource calculated LMP was less than the market LMP in 29 intervals. In the 29 intervals, the average decrease in five minute LMP was \$14.69/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 \$17.75/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. Out of the 8,064 five-minute intervals in May, this resource was issued exceptional dispatch instructions in 60 five-minute intervals. This resource was eligible to set the LMP in 48 intervals. Out of the 48 intervals, resource calculated LMP was larger than the market LMP in 45 intervals. In the 45 intervals, the average increase in five minute LMP was \$23.22/MWh. Out of the 48 intervals, resource calculated LMP was less than the market LMP in 3 intervals. In the 3 intervals, the average decrease in five minute LMP was \$56.05/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 \$18.27/MWh

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

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1	5/1/2017	8	1	27.03	Yes	36.34	9.31
2	5/1/2017	8	2	27.13	Yes	36.34	9.21
3	5/1/2017	8	3	27.37	Yes	36.34	8.97
4	5/1/2017	8	4	25.96	Yes	36.34	10.38
5	5/1/2017	8	5	22.84	Yes	36.34	13.50
6	5/1/2017	8	6	2.51	Yes	36.34	33.83
7	5/1/2017	8	7	0.01	Yes	36.34	36.33
8	5/1/2017	8	8	0.01	Yes	36.34	36.33
9	5/1/2017	8	9	0.01	Yes	36.34	36.33
10	5/1/2017	8	10	0.01	Yes	36.34	36.33
11	5/1/2017	8	11	0.01	Yes	36.34	36.33
12	5/1/2017	8	12	0.01	Yes	36.34	36.33
13	5/1/2017	12	1	26.96	Yes	36.34	9.38
14	5/1/2017	12	2	25.15	Yes	36.34	11.19
15	5/1/2017	12	3	25.78	Yes	36.34	10.56
16	5/1/2017	12	4	26.26	Yes	36.34	10.08
17	5/1/2017	12	5	26.26	Yes	36.34	10.08
18	5/1/2017	12	6	26.26	Yes	36.34	10.08
19	5/1/2017	12	7	23.08	Yes	36.34	13.26
20	5/1/2017	12	8	24.14	Yes	36.34	12.20
21	5/1/2017	12	9	22.94	Yes	36.34	13.40
22	5/1/2017	12	10	25.77	Yes	36.34	10.57
23	5/1/2017	12	11	28.15	Yes	36.34	8.19
24	5/1/2017	12	12	25.98	Yes	36.34	10.36
25	5/1/2017	19	1	18.83	No	36.34	17.51
26	5/1/2017	19	2	18.83	No	36.34	17.51
27	5/1/2017	19	3	20.87	No	36.34	15.47
28	5/1/2017	19	12	29.40	No	36.34	6.94
29	5/1/2017	20	1	22.19	No	36.34	14.15
30	5/1/2017	20	2	22.78	No	36.34	13.56
31	5/1/2017	20	3	22.19	No	36.34	14.15
32	5/1/2017	20	4	22.07	No	36.34	14.27
33	5/1/2017	20	5	22.07	No	36.34	14.27
34	5/1/2017	20	6	27.20	No	36.34	9.14
35	5/1/2017	20	7	24.75	No	36.34	11.59
36	5/1/2017	20	8	24.21	No	36.34	12.13
37	5/1/2017	20	9	28.21	No	36.34	8.13
38	5/1/2017	20	10	31.39	No	36.34	4.95
39	5/1/2017	20	11	31.89	No	36.34	4.45
40	5/1/2017	20	12	34.50	No	36.34	1.84
41	5/1/2017	23	5	44.85	Yes	36.34	-8.51
42	5/1/2017	23	6	30.27	Yes	36.34	6.07
43	5/1/2017	23	7	23.88	Yes	36.34	12.46
44	5/1/2017	23	8	23.14	Yes	36.34	13.20
45	5/1/2017	23	9	22.38	Yes	36.34	13.96

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46	5/1/2017	23	10	18.98	Yes	36.34	17.36
47	5/1/2017	23	11	18.28	Yes	36.34	18.06
48	5/1/2017	23	12	13.86	Yes	36.34	22.48
49	5/1/2017	24	1	17.01	Yes	36.34	19.33
50	5/1/2017	24	2	17.50	Yes	36.34	18.84
51	5/1/2017	24	3	18.77	Yes	36.34	17.57
52	5/1/2017	24	4	25.02	Yes	36.34	11.32
53	5/1/2017	24	5	26.58	Yes	36.34	9.76
54	5/1/2017	24	6	27.63	Yes	36.34	8.71
55	5/1/2017	24	7	22.49	Yes	36.34	13.85
56	5/1/2017	24	8	27.50	Yes	36.34	8.84
57	5/1/2017	24	9	25.84	Yes	36.34	10.50
58	5/1/2017	24	10	22.25	Yes	36.34	14.09
59	5/1/2017	24	11	19.51	Yes	36.34	16.83
60	5/1/2017	24	12	1.58	Yes	36.34	34.76
61	5/2/2017	1	1	21.71	Yes	36.08	14.37
62	5/2/2017	1	2	24.22	Yes	36.08	11.86
63	5/2/2017	1	3	25.11	Yes	36.08	10.97
64	5/2/2017	1	4	25.34	Yes	36.08	10.74
65	5/2/2017	1	5	26.01	Yes	36.08	10.07
66	5/2/2017	1	6	25.17	Yes	36.08	10.91
67	5/2/2017	1	7	25.65	Yes	36.08	10.43
68	5/2/2017	1	8	25.71	Yes	36.08	10.37
69	5/2/2017	1	9	20.70	Yes	36.08	15.38
70	5/2/2017	1	10	21.34	Yes	36.08	14.74
71	5/2/2017	1	11	20.64	Yes	36.08	15.44
72	5/2/2017	1	12	20.50	Yes	36.08	15.58
73	5/2/2017	9	10	-9.59	Yes	36.08	45.67
74	5/2/2017	16	1	6.50	Yes	36.08	29.58
75	5/2/2017	16	2	5.63	Yes	36.08	30.45
76	5/2/2017	16	3	6.31	Yes	36.08	29.77
77	5/2/2017	16	4	7.14	Yes	36.08	28.94
78	5/2/2017	16	5	8.32	Yes	36.08	27.76
79	5/2/2017	16	6	9.46	Yes	36.08	26.62
80	5/2/2017	16	7	6.07	Yes	36.08	30.01
81	5/2/2017	16	8	8.11	Yes	36.08	27.97
82	5/2/2017	16	9	6.07	Yes	36.08	30.01
83	5/2/2017	16	10	4.56	Yes	36.08	31.52
84	5/2/2017	16	11	5.97	Yes	36.08	30.11
85	5/2/2017	16	12	7.49	Yes	36.08	28.59
86	5/2/2017	18	1	-2.10	Yes	36.08	38.18
87	5/2/2017	18	2	-26.49	Yes	36.08	62.57
88	5/2/2017	18	3	-26.86	Yes	36.08	62.94
89	5/2/2017	18	4	-27.07	Yes	36.08	63.15
90	5/2/2017	18	5	-27.17	Yes	36.08	63.25
91	5/2/2017	18	6	-27.46	Yes	36.08	63.54

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92	5/2/2017	18	7	3.84	Yes	36.08	32.24
93	5/2/2017	18	8	3.90	Yes	36.08	32.18
94	5/2/2017	18	9	4.98	Yes	36.08	31.10
95	5/2/2017	18	10	8.58	Yes	36.08	27.50
96	5/2/2017	18	11	-20.95	Yes	36.08	57.03
97	5/2/2017	18	12	-19.73	Yes	36.08	55.81
98	5/2/2017	19	1	10.32	No	36.08	25.76
99	5/2/2017	19	2	11.23	No	36.08	24.85
100	5/2/2017	19	3	11.18	No	36.08	24.90
101	5/2/2017	19	4	8.51	No	36.08	27.57
102	5/2/2017	19	5	11.09	No	36.08	24.99
103	5/2/2017	19	9	36.31	No	36.08	-0.23
104	5/2/2017	19	10	31.65	No	36.08	4.43
105	5/2/2017	19	11	-1.58	No	36.08	37.66
106	5/2/2017	19	12	0.87	No	36.08	35.21
107	5/2/2017	20	1	15.31	No	36.08	20.77
108	5/2/2017	20	2	38.61	No	36.08	-2.53
109	5/2/2017	20	3	37.15	No	36.08	-1.07
110	5/2/2017	20	4	37.18	No	36.08	-1.10
111	5/2/2017	20	5	37.55	No	36.08	-1.47
112	5/2/2017	20	6	36.32	No	36.08	-0.24
113	5/2/2017	20	7	52.07	No	36.08	-15.99
114	5/2/2017	20	8	54.58	No	36.08	-18.50
115	5/2/2017	20	9	52.07	No	36.08	-15.99
116	5/2/2017	20	10	52.29	No	36.08	-16.21
117	5/2/2017	20	11	55.13	No	36.08	-19.05
118	5/2/2017	20	12	52.16	No	36.08	-16.08
119	5/3/2017	7	1	32.30	No	35.79	3.49
120	5/3/2017	7	2	27.82	No	35.79	7.97
121	5/3/2017	7	3	27.82	No	35.79	7.97
122	5/3/2017	7	4	3.77	No	35.79	32.02
123	5/3/2017	7	5	5.11	No	35.79	30.68
124	5/3/2017	7	6	26.92	No	35.79	8.87
125	5/3/2017	7	7	29.44	No	35.79	6.35
126	5/3/2017	7	8	27.04	No	35.79	8.75
127	5/3/2017	7	9	26.94	No	35.79	8.85
128	5/3/2017	7	10	27.48	No	35.79	8.31
129	5/3/2017	7	11	27.48	No	35.79	8.31
130	5/3/2017	7	12	27.40	No	35.79	8.39
131	5/3/2017	8	1	35.58	Yes	35.79	0.21
132	5/3/2017	8	2	13.13	Yes	35.79	22.66
133	5/3/2017	8	3	14.14	Yes	35.79	21.65
134	5/3/2017	8	4	12.34	Yes	35.79	23.45
135	5/3/2017	8	5	11.56	Yes	35.79	24.23
136	5/3/2017	8	6	10.86	Yes	35.79	24.93
137	5/3/2017	8	7	8.86	Yes	35.79	26.93

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138	5/3/2017	8	8	8.86	Yes	35.79	26.93
139	5/3/2017	8	9	3.89	Yes	35.79	31.90
140	5/3/2017	8	10	2.70	Yes	35.79	33.09
141	5/3/2017	8	11	1.96	Yes	35.79	33.83
142	5/3/2017	8	12	1.96	Yes	35.79	33.83
143	5/3/2017	10	1	7.53	Yes	35.79	28.26
144	5/3/2017	10	2	8.13	Yes	35.79	27.66
145	5/3/2017	10	3	9.76	Yes	35.79	26.03
146	5/3/2017	10	4	11.49	Yes	35.79	24.30
147	5/3/2017	10	5	11.49	Yes	35.79	24.30
148	5/3/2017	10	6	12.54	Yes	35.79	23.25
149	5/3/2017	10	7	10.12	Yes	35.79	25.67
150	5/3/2017	10	8	10.12	Yes	35.79	25.67
151	5/3/2017	10	9	8.91	Yes	35.79	26.88
152	5/3/2017	10	10	9.72	Yes	35.79	26.07
153	5/3/2017	10	11	6.51	Yes	35.79	29.28
154	5/3/2017	10	12	6.21	Yes	35.79	29.58
155	5/3/2017	11	1	5.52	Yes	35.79	30.27
156	5/3/2017	11	2	3.98	Yes	35.79	31.81
157	5/3/2017	11	3	0.64	Yes	35.79	35.15
158	5/3/2017	11	4	0.02	Yes	35.79	35.77
159	5/3/2017	11	5	-8.63	Yes	35.79	44.42
160	5/3/2017	11	6	-0.83	Yes	35.79	36.62
161	5/3/2017	11	7	1.14	Yes	35.79	34.65
162	5/3/2017	11	8	4.71	Yes	35.79	31.08
163	5/3/2017	11	9	4.71	Yes	35.79	31.08
164	5/3/2017	11	10	5.84	Yes	35.79	29.95
165	5/3/2017	11	11	5.84	Yes	35.79	29.95
166	5/3/2017	11	12	5.79	Yes	35.79	30.00
167	5/3/2017	22	1	36.42	No	35.79	-0.63
168	5/3/2017	22	8	31.29	Yes	35.79	4.50
169	5/3/2017	22	9	30.22	Yes	35.79	5.57
170	5/3/2017	22	10	29.73	No	35.79	6.06
171	5/3/2017	22	11	29.73	No	35.79	6.06
172	5/3/2017	22	12	29.73	No	35.79	6.06
173	5/3/2017	23	1	31.79	No	35.79	4.00
174	5/3/2017	23	2	31.91	No	35.79	3.88
175	5/3/2017	23	3	37.93	No	35.79	-2.14
176	5/3/2017	23	4	31.28	No	35.79	4.51
177	5/3/2017	23	5	30.95	No	35.79	4.84
178	5/3/2017	23	6	32.26	No	35.79	3.53
179	5/3/2017	23	7	32.49	No	35.79	3.30
180	5/3/2017	23	8	34.70	No	35.79	1.09
181	5/3/2017	23	9	37.64	No	35.79	-1.85
182	5/3/2017	23	10	27.02	No	35.79	8.77
183	5/3/2017	23	11	24.72	No	35.79	11.07

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184	5/3/2017	23	12	22.80	No	35.79	12.99
185	5/3/2017	24	10	30.96	Yes	35.79	4.83
186	5/3/2017	24	11	31.49	Yes	35.79	4.30
187	5/3/2017	24	12	36.83	Yes	35.79	-1.04
188	5/4/2017	1	1	45.75	Yes	35.66	-10.09
189	5/4/2017	1	2	45.75	Yes	35.66	-10.09
190	5/4/2017	1	3	38.86	Yes	35.66	-3.20
191	5/4/2017	1	4	23.78	Yes	35.66	11.88
192	5/4/2017	1	5	27.72	Yes	35.66	7.94
193	5/4/2017	1	6	27.07	Yes	35.66	8.59
194	5/4/2017	1	7	25.23	Yes	35.66	10.43
195	5/4/2017	1	8	22.28	Yes	35.66	13.38
196	5/4/2017	1	9	21.70	Yes	35.66	13.96
197	5/4/2017	1	10	21.32	Yes	35.66	14.34
198	5/4/2017	1	11	21.07	Yes	35.66	14.59
199	5/4/2017	1	12	22.27	Yes	35.66	13.39
200	5/4/2017	2	1	22.03	Yes	35.66	13.63
201	5/4/2017	2	9	19.27	Yes	35.66	16.39
202	5/4/2017	2	10	20.35	Yes	35.66	15.31
203	5/4/2017	2	11	20.75	Yes	35.66	14.91
204	5/4/2017	2	12	20.75	Yes	35.66	14.91
205	5/4/2017	4	1	20.36	Yes	35.66	15.30
206	5/4/2017	4	2	20.81	Yes	35.66	14.85
207	5/4/2017	4	3	20.20	Yes	35.66	15.46
208	5/4/2017	4	4	19.53	Yes	35.66	16.13
209	5/4/2017	4	5	19.93	Yes	35.66	15.73
210	5/4/2017	4	6	20.80	Yes	35.66	14.86
211	5/4/2017	4	7	20.77	Yes	35.66	14.89
212	5/4/2017	4	8	20.77	Yes	35.66	14.89
213	5/4/2017	4	9	20.77	Yes	35.66	14.89
214	5/4/2017	4	10	21.70	Yes	35.66	13.96
215	5/4/2017	4	11	21.70	Yes	35.66	13.96
216	5/4/2017	4	12	21.61	Yes	35.66	14.05
217	5/4/2017	6	7	28.72	Yes	35.66	6.94
218	5/4/2017	6	8	28.72	Yes	35.66	6.94
219	5/4/2017	6	9	29.86	Yes	35.66	5.80
220	5/4/2017	6	10	30.37	Yes	35.66	5.29
221	5/4/2017	6	11	32.18	Yes	35.66	3.48
222	5/4/2017	6	12	44.59	Yes	35.66	-8.93
223	5/4/2017	7	1	35.58	No	35.66	0.08
224	5/4/2017	7	2	35.58	No	35.66	0.08
225	5/4/2017	7	3	36.23	No	35.66	-0.57
226	5/4/2017	7	4	29.85	Yes	35.66	5.81
227	5/4/2017	7	5	29.85	Yes	35.66	5.81
228	5/4/2017	7	6	29.45	Yes	35.66	6.21
229	5/4/2017	7	7	30.40	Yes	35.66	5.26

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230	5/4/2017	7	8	28.92	Yes	35.66	6.74
231	5/4/2017	7	9	24.80	Yes	35.66	10.86
232	5/4/2017	7	10	25.81	Yes	35.66	9.85
233	5/4/2017	7	11	25.31	Yes	35.66	10.35
234	5/4/2017	7	12	24.88	Yes	35.66	10.78
235	5/4/2017	17	1	-26.61	Yes	35.66	62.27
236	5/4/2017	17	2	-10.67	Yes	35.66	46.33
237	5/4/2017	17	3	-27.33	Yes	35.66	62.99
238	5/4/2017	17	4	-10.09	Yes	35.66	45.75
239	5/4/2017	17	5	-8.79	Yes	35.66	44.45
240	5/4/2017	17	6	-10.34	Yes	35.66	46.00
241	5/4/2017	17	7	25.59	Yes	35.66	10.07
242	5/4/2017	17	8	24.73	Yes	35.66	10.93
243	5/4/2017	17	9	24.35	Yes	35.66	11.31
244	5/4/2017	17	10	13.56	Yes	35.66	22.10
245	5/4/2017	17	11	12.50	Yes	35.66	23.16
246	5/4/2017	17	12	13.23	Yes	35.66	22.43
247	5/4/2017	18	1	12.29	No	35.66	23.37
248	5/4/2017	18	2	12.29	No	35.66	23.37
249	5/4/2017	18	3	12.02	No	35.66	23.64
250	5/4/2017	18	4	11.57	No	35.66	24.09
251	5/4/2017	18	5	11.57	No	35.66	24.09
252	5/4/2017	18	6	11.52	No	35.66	24.14
253	5/4/2017	18	7	17.85	No	35.66	17.81
254	5/4/2017	18	8	19.75	No	35.66	15.91
255	5/4/2017	18	9	24.26	No	35.66	11.40
256	5/4/2017	18	10	23.28	No	35.66	12.38
257	5/4/2017	18	11	23.95	No	35.66	11.71
258	5/4/2017	18	12	27.84	No	35.66	7.82
259	5/4/2017	20	6	28.98	No	35.66	6.68
260	5/4/2017	20	7	24.40	No	35.66	11.26
261	5/4/2017	20	8	23.96	No	35.66	11.70
262	5/4/2017	20	9	26.02	No	35.66	9.64
263	5/4/2017	20	10	27.47	No	35.66	8.19
264	5/4/2017	20	11	28.57	No	35.66	7.09
265	5/4/2017	20	12	29.03	No	35.66	6.63
266	5/5/2017	7	4	25.09	Yes	35.87	10.78
267	5/5/2017	7	5	26.44	Yes	35.87	9.43
268	5/5/2017	7	6	25.69	Yes	35.87	10.18
269	5/5/2017	7	7	29.65	Yes	35.87	6.22
270	5/5/2017	7	8	29.65	Yes	35.87	6.22
271	5/5/2017	7	9	27.29	Yes	35.87	8.58
272	5/5/2017	7	10	27.78	Yes	35.87	8.09
273	5/5/2017	7	11	26.14	Yes	35.87	9.73
274	5/5/2017	7	12	26.76	Yes	35.87	9.11
275	5/6/2017	22	1	16.81	No	35.86	19.05

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276	5/6/2017	22	2	16.81	No	35.86	19.05
277	5/6/2017	22	10	3.91	No	35.86	31.95
278	5/6/2017	22	11	3.97	No	35.86	31.89
279	5/6/2017	22	12	8.61	No	35.86	27.25
280	5/6/2017	23	1	12.60	No	35.86	23.26
281	5/6/2017	23	2	17.60	No	35.86	18.26
282	5/6/2017	23	3	151.19	No	35.86	-115.33
283	5/6/2017	23	4	44.03	Yes	35.86	-8.17
284	5/6/2017	23	5	45.41	Yes	35.86	-9.55
285	5/6/2017	23	6	39.15	Yes	35.86	-3.29
286	5/6/2017	23	7	18.42	Yes	35.86	17.44
287	5/6/2017	23	8	16.09	Yes	35.86	19.77
288	5/6/2017	23	9	14.39	Yes	35.86	21.47
289	5/6/2017	23	10	13.78	Yes	35.86	22.08
290	5/6/2017	23	11	14.99	Yes	35.86	20.87
291	5/6/2017	23	12	23.07	Yes	35.86	12.79
292	5/7/2017	6	9	15.21	Yes	35.88	20.67
293	5/7/2017	6	10	14.33	Yes	35.88	21.55
294	5/7/2017	6	11	14.50	Yes	35.88	21.38
295	5/7/2017	6	12	15.74	Yes	35.88	20.14
296	5/7/2017	8	1	2.23	Yes	35.88	33.65
297	5/7/2017	8	2	1.50	Yes	35.88	34.38
298	5/7/2017	8	3	10.26	Yes	35.88	25.62
299	5/7/2017	8	4	11.38	Yes	35.88	24.50
300	5/7/2017	8	5	8.63	Yes	35.88	27.25
301	5/7/2017	8	6	6.10	Yes	35.88	29.78
302	5/7/2017	8	7	-13.78	Yes	35.88	49.66
303	5/7/2017	8	8	-35.67	Yes	35.88	71.55
304	5/7/2017	8	9	-16.82	Yes	35.88	52.70
305	5/7/2017	8	10	-40.12	Yes	35.88	76.00
306	5/7/2017	8	11	-34.12	Yes	35.88	70.00
307	5/7/2017	8	12	-9.18	Yes	35.88	45.06
308	5/7/2017	19	1	7.32	No	35.88	28.56
309	5/7/2017	19	2	6.96	No	35.88	28.92
310	5/7/2017	19	3	10.18	No	35.88	25.70
311	5/7/2017	19	4	10.13	No	35.88	25.75
312	5/7/2017	19	5	11.48	No	35.88	24.40
313	5/7/2017	19	6	13.74	No	35.88	22.14
314	5/7/2017	19	7	12.40	No	35.88	23.48
315	5/7/2017	19	8	13.39	No	35.88	22.49
316	5/7/2017	19	9	16.27	No	35.88	19.61
317	5/7/2017	19	10	14.71	No	35.88	21.17
318	5/7/2017	19	11	19.35	No	35.88	16.53
319	5/7/2017	19	12	21.53	No	35.88	14.35
320	5/7/2017	20	1	13.82	No	35.88	22.06
321	5/7/2017	20	2	13.39	No	35.88	22.49

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322	5/7/2017	20	3	8.51	No	35.88	27.37
323	5/7/2017	20	4	5.38	No	35.88	30.50
324	5/7/2017	20	5	5.60	No	35.88	30.28
325	5/7/2017	20	6	6.96	No	35.88	28.92
326	5/7/2017	20	7	5.41	No	35.88	30.47
327	5/7/2017	20	8	6.01	No	35.88	29.87
328	5/7/2017	20	9	5.84	No	35.88	30.04
329	5/7/2017	20	10	3.96	No	35.88	31.92
330	5/7/2017	20	11	14.21	No	35.88	21.67
331	5/7/2017	20	12	14.33	No	35.88	21.55
332	5/9/2017	14	1	30.76	Yes	35.62	4.86
333	5/9/2017	14	2	30.42	Yes	35.62	5.20
334	5/9/2017	14	3	15.40	Yes	35.62	20.22
335	5/9/2017	14	4	11.69	Yes	35.62	23.93
336	5/9/2017	14	5	14.12	Yes	35.62	21.50
337	5/9/2017	14	6	13.89	Yes	35.62	21.73
338	5/9/2017	14	7	28.56	Yes	35.62	7.06
339	5/9/2017	14	8	28.53	Yes	35.62	7.09
340	5/9/2017	14	9	29.57	Yes	35.62	6.05
341	5/9/2017	14	10	30.24	Yes	35.62	5.38
342	5/9/2017	14	11	28.54	Yes	35.62	7.08
343	5/9/2017	14	12	28.54	Yes	35.62	7.08
344	5/9/2017	17	1	20.65	Yes	35.62	14.97
345	5/9/2017	17	2	22.34	Yes	35.62	13.28
346	5/9/2017	17	3	22.66	Yes	35.62	12.96
347	5/9/2017	17	4	4.09	Yes	35.62	31.53
348	5/9/2017	17	5	4.33	Yes	35.62	31.29
349	5/9/2017	17	6	6.93	Yes	35.62	28.69
350	5/9/2017	17	7	5.64	Yes	35.62	29.98
351	5/9/2017	17	8	5.64	Yes	35.62	29.98
352	5/9/2017	17	9	6.10	Yes	35.62	29.52
353	5/9/2017	17	10	7.30	Yes	35.62	28.32
354	5/9/2017	17	11	7.30	Yes	35.62	28.32
355	5/9/2017	17	12	7.37	Yes	35.62	28.25
356	5/9/2017	18	1	6.50	Yes	35.62	29.12
357	5/9/2017	18	2	6.50	Yes	35.62	29.12
358	5/9/2017	18	3	7.84	Yes	35.62	27.78
359	5/9/2017	18	4	25.98	Yes	35.62	9.64
360	5/9/2017	18	5	27.71	Yes	35.62	7.91
361	5/9/2017	18	6	27.94	Yes	35.62	7.68
362	5/9/2017	18	7	29.80	Yes	35.62	5.82
363	5/9/2017	18	8	30.73	Yes	35.62	4.89
364	5/9/2017	18	9	31.68	Yes	35.62	3.94
365	5/9/2017	18	10	19.32	Yes	35.62	16.30
366	5/9/2017	18	11	19.32	Yes	35.62	16.30
367	5/9/2017	18	12	23.15	Yes	35.62	12.47

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368	5/9/2017	19	1	28.65	No	35.62	6.97
369	5/9/2017	19	2	15.64	No	35.62	19.98
370	5/9/2017	19	3	14.40	No	35.62	21.22
371	5/9/2017	19	4	15.84	No	35.62	19.78
372	5/9/2017	19	5	15.85	No	35.62	19.77
373	5/9/2017	19	6	16.21	No	35.62	19.41
374	5/9/2017	19	7	16.53	No	35.62	19.09
375	5/9/2017	19	8	16.95	No	35.62	18.67
376	5/9/2017	19	9	16.95	No	35.62	18.67
377	5/9/2017	19	10	35.52	No	35.62	0.10
378	5/9/2017	19	11	1111.10	No	35.62	-1075.48
379	5/9/2017	19	12	25.60	No	35.62	10.02
380	5/11/2017	21	1	7.80	No	36.61	28.81
381	5/11/2017	21	2	7.78	No	36.61	28.83
382	5/11/2017	21	3	8.19	No	36.61	28.42
383	5/11/2017	21	4	8.78	No	36.61	27.83
384	5/11/2017	21	5	9.11	No	36.61	27.50
385	5/11/2017	21	6	9.25	No	36.61	27.36
386	5/11/2017	21	7	11.01	No	36.61	25.60
387	5/11/2017	21	8	10.92	No	36.61	25.69
388	5/11/2017	21	9	10.49	No	36.61	26.12
389	5/11/2017	21	10	12.74	No	36.61	23.87
390	5/11/2017	21	11	13.62	No	36.61	22.99
391	5/11/2017	21	12	13.62	No	36.61	22.99
392	5/15/2017	7	9	29.53	Yes	37.26	7.73
393	5/15/2017	7	10	26.95	Yes	37.26	10.31
394	5/15/2017	7	11	28.62	Yes	37.26	8.64
395	5/15/2017	7	12	35.89	Yes	37.26	1.37
396	5/15/2017	22	1	44.97	No	37.26	-7.71
397	5/15/2017	22	2	39.52	No	37.26	-2.26
398	5/15/2017	22	3	39.40	No	37.26	-2.14
399	5/15/2017	22	4	37.74	No	37.26	-0.48
400	5/15/2017	22	5	35.36	No	37.26	1.90
401	5/15/2017	22	6	37.82	No	37.26	-0.56
402	5/15/2017	22	7	29.10	No	37.26	8.16
403	5/15/2017	22	11	24.13	No	37.26	13.13
404	5/15/2017	22	12	26.46	No	37.26	10.80
405	5/16/2017	7	5	34.07	Yes	37.23	3.16
406	5/16/2017	7	6	34.49	Yes	37.23	2.74
407	5/16/2017	7	7	34.26	Yes	37.23	2.97
408	5/16/2017	7	12	22.18	Yes	37.23	15.05
409	5/16/2017	22	1	34.46	No	37.23	2.77
410	5/16/2017	22	2	34.57	No	37.23	2.66
411	5/16/2017	22	3	34.46	No	37.23	2.77
412	5/16/2017	22	4	28.42	No	37.23	8.81
413	5/16/2017	22	5	28.42	No	37.23	8.81

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414	5/16/2017	22	6	36.92	No	37.23	0.31
415	5/16/2017	22	7	38.02	No	37.23	-0.79
416	5/16/2017	22	8	35.23	No	37.23	2.00
417	5/16/2017	22	9	34.84	No	37.23	2.39
418	5/16/2017	22	10	31.86	No	37.23	5.37
419	5/16/2017	22	11	37.24	No	37.23	-0.01
420	5/16/2017	22	12	42.49	No	37.23	-5.26
421	5/17/2017	7	1	49.85	Yes	36.6	-13.25
422	5/17/2017	7	2	36.54	Yes	36.6	0.06
423	5/17/2017	7	3	36.22	Yes	36.6	0.38
424	5/17/2017	7	4	46.01	Yes	36.6	-9.41
425	5/17/2017	7	5	49.91	Yes	36.6	-13.31
426	5/17/2017	7	6	59.08	Yes	36.6	-22.48
427	5/17/2017	7	7	51.11	Yes	36.6	-14.51
428	5/17/2017	7	8	48.04	Yes	36.6	-11.44
429	5/17/2017	7	9	45.21	Yes	36.6	-8.61
430	5/17/2017	7	10	48.21	Yes	36.6	-11.61
431	5/17/2017	7	11	59.02	Yes	36.6	-22.42
432	5/17/2017	7	12	177.29	Yes	36.6	-140.69
433	5/17/2017	8	3	59.10	Yes	36.6	-22.50
434	5/17/2017	10	9	29.61	Yes	36.6	6.99
435	5/17/2017	10	10	24.72	Yes	36.6	11.88
436	5/17/2017	10	11	25.17	Yes	36.6	11.43
437	5/17/2017	10	12	31.18	Yes	36.6	5.42
438	5/18/2017	8	5	21.58	Yes	36.15	14.57
439	5/18/2017	8	6	21.01	Yes	36.15	15.14
440	5/18/2017	8	9	0.01	Yes	36.15	36.14
441	5/18/2017	22	1	18.82	No	36.15	17.33
442	5/18/2017	22	2	17.94	No	36.15	18.21
443	5/18/2017	22	3	17.78	No	36.15	18.37
444	5/18/2017	22	4	21.92	No	36.15	14.23
445	5/18/2017	22	5	21.40	No	36.15	14.75
446	5/18/2017	22	6	24.03	No	36.15	12.12
447	5/18/2017	22	7	19.95	No	36.15	16.20
448	5/18/2017	22	8	18.47	No	36.15	17.68
449	5/18/2017	22	9	15.13	No	36.15	21.02
450	5/18/2017	22	10	19.12	No	36.15	17.03
451	5/18/2017	22	11	19.13	No	36.15	17.02
452	5/18/2017	22	12	21.92	No	36.15	14.23
453	5/18/2017	24	1	21.36	No	36.15	14.79
454	5/18/2017	24	2	22.24	No	36.15	13.91
455	5/18/2017	24	3	21.36	No	36.15	14.79
456	5/18/2017	24	4	19.53	No	36.15	16.62
457	5/18/2017	24	5	21.04	No	36.15	15.11
458	5/18/2017	24	6	21.07	No	36.15	15.08
459	5/18/2017	24	7	20.14	No	36.15	16.01

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460	5/18/2017	24	8	19.42	No	36.15	16.73
461	5/18/2017	24	9	19.36	No	36.15	16.79
462	5/18/2017	24	10	31.85	No	36.15	4.30
463	5/18/2017	24	11	32.02	No	36.15	4.13
464	5/18/2017	24	12	33.52	No	36.15	2.63
465	5/19/2017	21	1	13.11	Yes	36.05	22.94
466	5/19/2017	21	2	13.05	Yes	36.05	23.00
467	5/19/2017	21	3	12.97	Yes	36.05	23.08
468	5/19/2017	21	4	13.52	Yes	36.05	22.53
469	5/19/2017	21	5	14.94	Yes	36.05	21.11
470	5/19/2017	21	6	16.28	Yes	36.05	19.77
471	5/19/2017	21	7	16.40	Yes	36.05	19.65
472	5/19/2017	21	8	16.82	Yes	36.05	19.23
473	5/19/2017	21	9	16.77	Yes	36.05	19.28
474	5/19/2017	21	10	16.53	Yes	36.05	19.52
475	5/19/2017	21	11	16.08	Yes	36.05	19.97
476	5/19/2017	21	12	16.08	Yes	36.05	19.97
477	5/21/2017	21	11	34.25	No	36.16	1.91
478	5/21/2017	22	1	38.18	Yes	36.16	-2.02
479	5/21/2017	22	2	35.51	Yes	36.16	0.65
480	5/21/2017	22	3	34.24	Yes	36.16	1.92
481	5/21/2017	22	4	31.90	Yes	36.16	4.26
482	5/21/2017	22	5	30.48	Yes	36.16	5.68
483	5/21/2017	22	6	30.23	Yes	36.16	5.93
484	5/21/2017	22	7	30.16	Yes	36.16	6.00
485	5/21/2017	22	8	29.45	Yes	36.16	6.71
486	5/21/2017	22	9	28.84	Yes	36.16	7.32
487	5/21/2017	22	10	28.57	Yes	36.16	7.59
488	5/21/2017	22	11	29.58	Yes	36.16	6.58
489	5/21/2017	22	12	30.30	Yes	36.16	5.86
490	5/22/2017	23	1	32.08	Yes	36.16	4.08
491	5/22/2017	23	2	36.03	Yes	36.16	0.13
492	5/22/2017	23	3	35.85	Yes	36.16	0.31
493	5/22/2017	23	4	33.02	Yes	36.16	3.14
494	5/22/2017	23	5	30.64	Yes	36.16	5.52
495	5/22/2017	23	6	29.15	Yes	36.16	7.01
496	5/22/2017	23	7	27.79	Yes	36.16	8.37
497	5/22/2017	23	8	27.87	Yes	36.16	8.29
498	5/22/2017	23	9	27.37	Yes	36.16	8.79
499	5/22/2017	23	10	27.26	Yes	36.16	8.90
500	5/22/2017	23	11	25.49	Yes	36.16	10.67
501	5/22/2017	23	12	24.82	Yes	36.16	11.34
502	5/23/2017	7	1	31.86	Yes	36.88	5.02
503	5/23/2017	7	2	24.11	Yes	36.88	12.77
504	5/23/2017	7	3	30.86	Yes	36.88	6.02
505	5/23/2017	7	4	30.91	Yes	36.88	5.97

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506	5/23/2017	7	5	29.92	Yes	36.88	6.96
507	5/23/2017	7	6	30.62	Yes	36.88	6.26
508	5/23/2017	7	7	27.02	Yes	36.88	9.86
509	5/23/2017	7	8	27.13	Yes	36.88	9.75
510	5/23/2017	7	9	24.87	Yes	36.88	12.01
511	5/23/2017	7	10	24.98	Yes	36.88	11.90
512	5/23/2017	7	11	25.31	Yes	36.88	11.57
513	5/23/2017	7	12	27.16	Yes	36.88	9.72
514	5/23/2017	22	10	22.98	Yes	36.88	13.90
515	5/23/2017	22	11	23.31	Yes	36.88	13.57
516	5/23/2017	22	12	22.94	Yes	36.88	13.94
517	5/23/2017	24	4	14.64	Yes	36.88	22.24
518	5/23/2017	24	5	14.94	Yes	36.88	21.94
519	5/23/2017	24	6	14.99	Yes	36.88	21.89
520	5/23/2017	24	7	8.36	Yes	36.88	28.52
521	5/23/2017	24	8	12.49	Yes	36.88	24.39
522	5/23/2017	24	9	10.41	Yes	36.88	26.47
523	5/23/2017	24	10	6.53	Yes	36.88	30.35
524	5/23/2017	24	11	5.83	Yes	36.88	31.05
525	5/23/2017	24	12	4.48	Yes	36.88	32.40
526	5/24/2017	2	1	5.36	Yes	37.1	31.74
527	5/24/2017	2	2	5.47	Yes	37.1	31.63
528	5/24/2017	2	3	-14.78	Yes	37.1	51.88
529	5/24/2017	2	4	4.22	Yes	37.1	32.88
530	5/24/2017	2	5	6.00	Yes	37.1	31.10
531	5/24/2017	2	6	11.25	Yes	37.1	25.85
532	5/24/2017	2	7	-2.47	Yes	37.1	39.57
533	5/24/2017	2	8	5.94	Yes	37.1	31.16
534	5/24/2017	2	9	5.07	Yes	37.1	32.03
535	5/24/2017	2	10	6.89	Yes	37.1	30.21
536	5/24/2017	2	11	4.39	Yes	37.1	32.71
537	5/24/2017	2	12	8.04	Yes	37.1	29.06
538	5/24/2017	3	1	10.08	Yes	37.1	27.02
539	5/24/2017	3	2	8.57	Yes	37.1	28.53
540	5/24/2017	3	3	8.17	Yes	37.1	28.93
541	5/24/2017	3	4	6.93	Yes	37.1	30.17
542	5/24/2017	3	5	8.17	Yes	37.1	28.93
543	5/24/2017	3	6	10.07	Yes	37.1	27.03
544	5/24/2017	3	7	6.89	Yes	37.1	30.21
545	5/24/2017	3	8	9.90	Yes	37.1	27.20
546	5/24/2017	3	9	9.66	Yes	37.1	27.44
547	5/24/2017	3	10	9.09	Yes	37.1	28.01
548	5/24/2017	3	11	-22.82	Yes	37.1	59.92
549	5/24/2017	3	12	-28.37	Yes	37.1	65.47
550	5/24/2017	8	8	-7.49	Yes	37.1	44.59
551	5/24/2017	8	9	-23.88	Yes	37.1	60.98

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552	5/24/2017	20	1	37.24	Yes	37.1	-0.14
553	5/24/2017	20	2	37.20	Yes	37.1	-0.10
554	5/24/2017	20	3	37.20	Yes	37.1	-0.10
555	5/24/2017	20	4	37.21	Yes	37.1	-0.11
556	5/24/2017	20	5	37.42	Yes	37.1	-0.32
557	5/24/2017	20	6	26.54	Yes	37.1	10.56
558	5/24/2017	20	7	25.62	Yes	37.1	11.48
559	5/24/2017	20	8	26.05	Yes	37.1	11.05
560	5/24/2017	20	9	26.21	Yes	37.1	10.89
561	5/24/2017	20	10	59.51	Yes	37.1	-22.41
562	5/24/2017	20	11	60.58	Yes	37.1	-23.48
563	5/24/2017	20	12	61.32	Yes	37.1	-24.22
564	5/24/2017	22	1	37.64	No	37.1	-0.54
565	5/24/2017	22	11	28.56	No	37.1	8.54
566	5/24/2017	22	12	31.33	No	37.1	5.77
567	5/24/2017	24	11	22.94	Yes	37.1	14.16
568	5/24/2017	24	12	22.27	Yes	37.1	14.83
569	5/25/2017	2	1	16.01	Yes	36.39	20.38
570	5/25/2017	2	2	15.98	Yes	36.39	20.41
571	5/25/2017	2	3	17.77	Yes	36.39	18.62
572	5/25/2017	2	4	15.04	Yes	36.39	21.35
573	5/25/2017	2	5	15.01	Yes	36.39	21.38
574	5/25/2017	2	6	14.30	Yes	36.39	22.09
575	5/25/2017	2	7	14.60	Yes	36.39	21.79
576	5/25/2017	2	8	14.21	Yes	36.39	22.18
577	5/25/2017	2	9	14.82	Yes	36.39	21.57
578	5/25/2017	2	10	14.52	Yes	36.39	21.87
579	5/25/2017	2	11	13.86	Yes	36.39	22.53
580	5/25/2017	2	12	5.92	Yes	36.39	30.47
581	5/25/2017	18	7	9.80	Yes	36.39	26.59
582	5/25/2017	18	8	10.53	Yes	36.39	25.86
583	5/25/2017	18	9	25.06	Yes	36.39	11.33
584	5/25/2017	18	10	27.97	Yes	36.39	8.42
585	5/25/2017	18	11	29.92	Yes	36.39	6.47
586	5/25/2017	18	12	28.69	Yes	36.39	7.70
587	5/25/2017	22	1	32.98	No	36.39	3.41
588	5/25/2017	22	2	32.98	No	36.39	3.41
589	5/25/2017	22	3	25.55	No	36.39	10.84
590	5/25/2017	22	4	27.03	No	36.39	9.36
591	5/25/2017	22	5	27.03	No	36.39	9.36
592	5/25/2017	22	6	27.52	No	36.39	8.87
593	5/25/2017	22	7	13.41	No	36.39	22.98
594	5/25/2017	22	8	7.07	No	36.39	29.32
595	5/25/2017	22	9	4.50	No	36.39	31.89
596	5/25/2017	22	10	6.16	No	36.39	30.23
597	5/25/2017	22	11	4.39	No	36.39	32.00

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598	5/25/2017	22	12	23.32	No	36.39	13.07
599	5/25/2017	23	1	30.05	No	36.39	6.34
600	5/25/2017	23	2	21.97	No	36.39	14.42
601	5/25/2017	23	3	25.60	No	36.39	10.79
602	5/25/2017	23	4	10.96	No	36.39	25.43
603	5/25/2017	23	5	12.39	No	36.39	24.00
604	5/25/2017	23	6	12.02	No	36.39	24.37
605	5/25/2017	23	7	5.32	No	36.39	31.07
606	5/25/2017	23	8	2.63	No	36.39	33.76
607	5/25/2017	23	9	5.52	No	36.39	30.87
608	5/26/2017	22	1	28.59	No	36.66	8.07
609	5/26/2017	22	2	28.59	No	36.66	8.07
610	5/26/2017	22	3	28.15	No	36.66	8.51
611	5/26/2017	22	4	27.39	No	36.66	9.27
612	5/26/2017	22	5	28.49	No	36.66	8.17
613	5/26/2017	22	6	30.49	No	36.66	6.17
614	5/26/2017	22	7	30.76	No	36.66	5.90
615	5/26/2017	22	8	30.67	No	36.66	5.99
616	5/26/2017	22	9	30.61	No	36.66	6.05
617	5/26/2017	22	10	29.32	Yes	36.66	7.34
618	5/26/2017	22	11	29.90	Yes	36.66	6.76
619	5/26/2017	22	12	28.63	Yes	36.66	8.03
620	5/28/2017	22	5	24.28	Yes	36.32	12.04
621	5/28/2017	22	6	23.14	Yes	36.32	13.18
622	5/28/2017	22	7	20.95	Yes	36.32	15.37
623	5/28/2017	22	8	20.95	Yes	36.32	15.37
624	5/28/2017	22	9	19.31	No	36.32	17.01
625	5/28/2017	22	10	17.93	Yes	36.32	18.39
626	5/28/2017	22	11	15.73	Yes	36.32	20.59
627	5/28/2017	22	12	18.96	Yes	36.32	17.36
628	5/28/2017	23	1	27.51	No	36.32	8.81
629	5/28/2017	23	2	29.87	No	36.32	6.45
630	5/28/2017	23	3	26.04	No	36.32	10.28
631	5/28/2017	23	4	25.36	No	36.32	10.96
632	5/28/2017	23	5	24.04	No	36.32	12.28
633	5/28/2017	23	6	21.69	No	36.32	14.63
634	5/28/2017	23	7	18.72	No	36.32	17.60
635	5/28/2017	23	8	17.28	No	36.32	19.04
636	5/28/2017	23	9	16.63	No	36.32	19.69
637	5/28/2017	23	10	15.86	No	36.32	20.46
638	5/28/2017	23	11	14.29	No	36.32	22.03
639	5/28/2017	23	12	11.93	No	36.32	24.39
640	5/31/2017	21	1	14.37	No	35.87	21.50
641	5/31/2017	21	2	14.37	No	35.87	21.50
642	5/31/2017	21	3	14.37	No	35.87	21.50
643	5/31/2017	21	4	11.80	No	35.87	24.07

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644	5/31/2017	21	5	11.80	No	35.87	24.07
645	5/31/2017	21	6	13.35	No	35.87	22.52
646	5/31/2017	21	7	13.85	No	35.87	22.02
647	5/31/2017	21	8	13.85	No	35.87	22.02
648	5/31/2017	21	9	13.34	No	35.87	22.53
649	5/31/2017	21	10	13.39	No	35.87	22.48
650	5/31/2017	21	11	11.55	No	35.87	24.32
651	5/31/2017	21	12	10.08	No	35.87	25.79
652	5/31/2017	24	7	19.67	Yes	35.87	16.20
653	5/31/2017	24	8	19.99	Yes	35.87	15.88
654	5/31/2017	24	9	18.80	Yes	35.87	17.07
655	5/31/2017	24	10	17.62	Yes	35.87	18.25
656	5/31/2017	24	11	17.62	Yes	35.87	18.25
657	5/31/2017	24	12	17.93	Yes	35.87	17.94

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	5/21/2017	14	1	20.87	Yes	38.93	18.06
2	5/21/2017	14	2	19.90	Yes	38.93	19.03
3	5/21/2017	14	3	19.90	Yes	38.93	19.03
4	5/21/2017	14	4	20.42	Yes	38.93	18.51
5	5/21/2017	14	5	19.12	Yes	38.93	19.81
6	5/21/2017	14	6	19.38	Yes	38.93	19.55
7	5/21/2017	14	7	20.02	Yes	38.93	18.91
8	5/21/2017	14	8	20.48	Yes	38.93	18.45
9	5/21/2017	14	9	21.90	Yes	38.93	17.03
10	5/21/2017	14	10	20.14	Yes	38.93	18.79
11	5/21/2017	14	11	22.80	Yes	38.93	16.13
12	5/21/2017	14	12	23.06	Yes	38.93	15.87
13	5/21/2017	22	4	28.72	Yes	53.04	24.32
14	5/21/2017	22	5	27.44	Yes	53.04	25.60
15	5/21/2017	22	6	27.39	Yes	53.04	25.65
16	5/21/2017	22	10	26.10	Yes	47.75	21.65
17	5/22/2017	1	1	17.68	Yes	47.75	30.07
18	5/22/2017	1	2	17.62	Yes	47.75	30.13
19	5/22/2017	1	3	17.68	Yes	47.75	30.07
20	5/22/2017	2	8	0.01	Yes	62.73	62.72
21	5/22/2017	2	9	0.01	Yes	62.73	62.72
22	5/22/2017	2	10	0.01	Yes	62.73	62.72
23	5/22/2017	2	11	0.01	Yes	62.73	62.72
24	5/22/2017	2	12	0.00	Yes	62.73	62.73
25	5/22/2017	3	1	0.00	No	45.62	45.62
26	5/22/2017	3	2	0.01	No	45.62	45.61
27	5/22/2017	3	3	0.04	No	45.62	45.58
28	5/22/2017	3	4	0.01	No	45.62	45.61
29	5/22/2017	3	5	0.01	No	45.62	45.61
30	5/22/2017	3	6	0.01	No	45.62	45.61
31	5/22/2017	3	7	0.01	No	45.62	45.61
32	5/22/2017	3	8	0.01	No	45.62	45.61
33	5/22/2017	3	9	0.01	No	45.62	45.61
34	5/22/2017	3	10	0.01	No	57.00	56.99

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
35	5/22/2017	3	11	0.01	No	57.00	56.99
36	5/22/2017	3	12	0.01	No	57.00	56.99
37	5/22/2017	14	1	20.32	Yes	42.17	21.85
38	5/22/2017	14	2	20.18	Yes	42.17	21.99
39	5/22/2017	14	3	20.32	Yes	42.17	21.85
40	5/22/2017	14	4	20.92	Yes	42.17	21.25
41	5/22/2017	14	5	21.27	Yes	42.17	20.90
42	5/22/2017	14	6	21.32	Yes	42.17	20.85
43	5/22/2017	14	7	21.42	Yes	42.17	20.75
44	5/22/2017	14	8	22.63	Yes	42.17	19.54
45	5/22/2017	14	9	24.11	Yes	42.17	18.06
46	5/22/2017	14	10	25.36	Yes	42.17	16.81
47	5/22/2017	14	11	24.41	Yes	42.17	17.76
48	5/22/2017	14	12	25.40	Yes	42.17	16.77
49	5/22/2017	16	1	26.61	Yes	40.16	13.55
50	5/22/2017	16	2	26.76	Yes	40.16	13.40
51	5/22/2017	16	3	27.04	Yes	40.16	13.12
52	5/22/2017	16	4	27.42	Yes	40.16	12.74
53	5/22/2017	16	5	28.39	Yes	40.16	11.77
54	5/22/2017	16	6	28.48	Yes	40.16	11.68
55	5/22/2017	16	7	36.14	Yes	40.16	4.02
56	5/22/2017	16	8	36.14	Yes	40.16	4.02
57	5/22/2017	16	9	38.19	Yes	40.16	1.97
58	5/22/2017	16	10	45.96	Yes	40.16	-5.80
59	5/22/2017	16	11	56.21	Yes	40.16	-16.05
60	5/22/2017	16	12	186.47	Yes	40.16	-146.31

Appendix C: Exceptional Dispatch Bid Mitigation Analysis

In May 2017, the ISO applied the exceptional dispatch bid mitigation to the exceptional dispatches. Table 10 shows the costs by instruction type in May. With exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches were \$ 808. Without the exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches would be \$ 3,255. The cost saving from the exceptional dispatch bid mitigation was \$ 2,446.

Table 10: Bid Mitigation Analysis for May 2017

Type	Number of Resources	Costs without Bid Mitigation	Costs with Bid Mitigation	Cost Saving
NONTMOD	8	\$3,255	\$808	\$2,446
Total	8	\$3,255	\$808	\$2,446