

November 27, 2013

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

**Re: California Independent System Operator Corporation
Docket Nos. ER08-1178-____, and EL08-88-____
August 2013 Exceptional Dispatch Report (Chart 2 data)**

Dear Secretary Bose:

Pursuant to the September 2, 2009 and May 4, 2010 orders in the above referenced docket, the California Independent System Operator Corporation submits the attached report. The attached report provides Exceptional Dispatch information that the Commission directed be included in "Chart 2", which was set forth in Appendix A to the September 2 Order, as modified the Commission's May 4 Order.

The attached report provides Chart 2 data for the month of August 2013. The attached Chart 2 report also includes the price impact analysis for the month of August 2013 required by Paragraph 44 of the September 2 Order as well as the degree of mitigation analysis required by ISO tariff section 34.9.4 for the month of August 2013.

Respectfully submitted,

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Exceptional Dispatch Report

Table 2: August 2013

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Introduction

This report is filed pursuant to FERC's September 2, 2009, and May 4, 2010, orders in ER08-1178. These orders require two monthly Exceptional Dispatch reports—one issued on the 15th of each month and one issued on the 30th of each month. This report provides data on the frequency, reasons and costs for Exceptional Dispatches issued in August 2013.

In addition, this report contains a price impact analysis as prescribed by FERC in its September 2 order. The price impact analysis for the month of August is presented in Appendix B. This report also includes the degree of mitigation analysis for August 2013 required by section 34.9.4 of the ISO tariff. As it has previously explained, the ISO indicated that it would start including the degree of mitigation analysis beginning with the month of August 2009 when the more limited Exceptional Dispatch bid mitigation took effect. This analysis will compare those Exceptional Dispatches subject to bid mitigation (i.e. Exceptional Dispatches to address noncompetitive constraints and Delta Dispatch), and determine the cost difference between the Exceptional Dispatch bid mitigation settlement rules and what the settlement amount would have been had the Exceptional Dispatches not been subject to bid mitigation. The Exceptional Dispatch bid mitigation analysis for August is presented in Appendix C.

The Nature of Exceptional Dispatch

The ISO 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. For the purposes of this report, a real-time exceptional dispatch above the resource's day-ahead award is considered an incremental exceptional dispatch instruction and a real-time exceptional dispatch below the day-ahead award is considered a decremental dispatch instruction. The ISO issues exceptional dispatch instructions primarily to manage transmission constraints that are not modeled in the market software. In addition to constraints, the ISO also issues exceptional dispatch instructions relating to reliability requirements and, on occasion, software failures. 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 ISO issues an exceptional dispatch instruction, these instructions are logged by the operators into the scheduling and logging system (SLIC), including an associated reason for each exceptional dispatch instruction.

In August 2013, the ISO issued exceptional dispatches for the following generation and transmission operating requirements:

- (1) 6510, SCIT Operating procedure,
- (2) 7110, Humboldt Area
- (3) 7230, transmission facilities in Palermo – Rio Oso area
- (4) 7320, Bay Area Transmission Management
- (5) 7430, transmission facilities in Fresno area

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

The following additional reason for exceptional dispatch instructions in August 2013 was not related to specific generation or transmission operating procedures: Software Limitation, when an exceptional dispatch instruction was used to bridge schedules across days for resources with a minimum down time of 24 hours, as the ISO 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 ISO issues an exceptional dispatch to commit this resource in 2400 so that 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 August, which are self explanatory.

As mentioned earlier, the data shown in Table 1 is based on a template specified in the September 2009 order.² This table contains all the information published in Table 1 of the first report for August. 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)

¹ A list of all of the ISO’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.

CC6470 DEC; (14) CC6482; (15) CC6488; and (16) CC6620. Each column is defined as follows:

- The MW column shows the range of exceptional dispatch instruction in MW for the classification.
- The Commitment column specifies if there was a unit commitment for the classification.
- The INC/DEC/NA column specifies if there was an incremental dispatch (INC), a decremental dispatch (DEC), or only a unit commitment (NA). The Begin Time and End Time columns show the start and end time of exceptional dispatch for the classification respectively.
- The Hours column is the time difference between begin time and end time rounded up to the next hour.
- The total volume column shows the total MWh dispatch quantity dispatched for that classification. This quantity includes the minimum load quantity, the imbalance energy quantity, and the exceptional dispatch quantity.
- The Min-Load Cost column shows eligible minimum load cost for the classification.
- The Start-Up Cost column shows the eligible start up cost for the classification. Please note that the ISO 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 process.³
- The CC6470 column shows the total imbalance energy costs for the classification. This cost contains the portion of exceptional dispatch instruction that was settled as optimal energy by virtue of its bid price being less than the LMP in that specific 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 which is settled at the resource specific LMP.
- The CC6470-DEC column shows that portion of decremental exceptional dispatch instruction which is settled at the resource specific LMP. Both these charge codes are portion of the real-time instructed imbalance energy charge code (6470).⁴
- The CC6482 column shows the real-time excess cost for the classification.⁵

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

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

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

- 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 by way of example in Attachment A. There was no designation of Exceptional Dispatch under Capacity Procurement Mechanism (CPM) in August 2013.

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

Table 1: Exceptional Dispatches in August 2013

**California Independent System Operator Corporation
Exceptional Dispatch Report
November 26, 2013**

Chart 2: Table of Exceptional Dispatches for Period 01/August/2013 - 31/August/2013

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time	Total MWH	Min Load cost	Startup Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
1	DA	Reliability need cannot be met by other resources	PG&E	Kern	17-Aug-13	141	Yes	N/A	12	10:00	21:00	0.00	\$93,804	\$15,180	\$0	0	\$0	\$0	\$0	\$0	\$39,901
2	DA	Reliability need cannot be met by other resources	PG&E	Kern	18-Aug-13	141	Yes	N/A	12	10:00	21:00	0.00	\$94,102	\$15,180	\$0	0	\$0	\$0	\$0	\$0	\$33,327
3	DA	Reliability need cannot be met by other resources	PG&E	Kern	24-Aug-13	141	Yes	N/A	12	10:00	21:00	0.00	\$96,243	\$15,180	\$0	0	\$0	\$0	\$0	\$0	\$39,552
4	DA	Reliability need cannot be met by other resources	PG&E	Kern	25-Aug-13	141	Yes	N/A	12	10:00	21:00	0.00	\$95,735	\$15,180	\$0	0	\$0	\$0	\$0	\$0	\$36,463
5	DA	Reliability need cannot be met by other resources	PG&E	Sierra	17-Aug-13	42	Yes	N/A	17	7:00	23:00	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
6	DA	Reliability need cannot be met by other resources	PG&E	Sierra	18-Aug-13	42	Yes	N/A	24	0:00	23:00	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
7	RT	6510	SCE	Big Creek-Ventura	6-Aug-13	50	No	INC	7	15:00	21:14	285.60	\$0	\$0	(\$12,647)	165	(\$8,450)	\$0	\$0	\$0	\$0
8	RT	6510	SCE	LA Basin	6-Aug-13	241-312	No	INC	11	11:00	21:59	2627.33	\$0	\$0	(\$129,942)	2154	(\$112,789)	\$0	\$0	\$0	\$0
9	RT	6510	SCE	LA Basin	16-Aug-13	0-146	Yes	DEC	7	11:00	17:59	39.02	\$0	\$0	(\$13,998)	0	\$0	\$0	\$0	\$0	\$0
10	RT	6510	SCE	LA Basin	16-Aug-13	162-243	Yes	INC	7	11:00	17:59	2032.00	\$17,147	\$0	(\$223,916)	280	(\$14,355)	\$0	\$0	\$0	\$0
11	RT	6510	SCE	LA Basin	17-Aug-13	52-303	Yes	DEC	9	11:50	19:59	-527.74	\$0	\$0	\$23,008	0	\$0	\$0	\$0	\$0	\$0
12	RT	6510	SCE	LA Basin	17-Aug-13	0-128	Yes	INC	10	11:50	20:59	239.79	\$0	\$0	(\$11,812)	208	(\$10,390)	\$0	\$0	\$0	\$0
13	RT	6510	SDG&E	San Diego-IV	30-Aug-13	15	Yes	INC	6	11:40	16:59	220.21	\$11,362	\$526	(\$165,716)	0	\$0	\$0	\$0	\$0	\$0
14	RT	7110	PG&E	Bay Area	1-Aug-13	180	Yes	INC	6	0:00	5:54	1867.86	\$0	\$0	(\$20,924)	0	(\$2)	\$0	\$0	\$0	\$0
15	RT	7110	PG&E	Humboldt	1-Aug-13	15-30	No	INC	8	10:00	17:59	172.14	\$0	\$0	(\$4,554)	6	(\$161)	\$0	(\$13)	\$0	\$0
16	RT	7110	PG&E	Humboldt	26-Aug-13	15-111	No	INC	18	6:52	23:59	232.34	\$359	\$0	(\$11,451)	(68)	(\$3,396)	\$7,007	\$0	(\$2,237)	\$0
17	RT	7110	PG&E	Humboldt	27-Aug-13	30-	No	INC	3	0:00	2:59	62.69	\$0	\$0	(\$2,057)	3	(\$113)	\$0	\$0	(\$22)	\$0

Department of Market Quality and Renewable Integration – California ISO

Num ber	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitm ent	INC_ DEC	Hours	Begin Time	End Time	Total MWH	Min Load cost	Startup Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
						45															
18	RT	7110	PG&E	Humboldt	28-Aug-13	48	No	INC	3	20:00	22:59	71.25	\$0	\$0	(\$2,730)	18	(\$766)	\$0	\$0	\$0	\$0
19	RT	7230	PG&E	Sierra	3-Aug-13	20	Yes	INC	4	18:39	21:59	115.83	\$4,570	\$397	(\$4,766)	0	\$0	\$0	\$0	\$0	\$0
20	RT	7230	PG&E	Sierra	27-Aug-13	20	Yes	INC	1	14:16	14:59	8.00	\$803	\$87	(\$1,665)	0	\$0	\$0	\$0	\$0	\$0
21	RT	7230	PG&E	Sierra	31-Aug-13	20	Yes	INC	5	18:27	22:59	149.64	\$8,303	\$585	(\$8,609)	0	\$0	\$0	\$0	\$0	\$0
22	RT	7320	PG&E	Fresno	2-Aug-13	50	No	INC	1	19:05	19:59	91.51	\$3,851	\$33	(\$4,718)	0	(\$8)	\$0	\$0	\$0	\$0
23	RT	7320	PG&E	Fresno	3-Aug-13	50	No	INC	3	19:04	21:24	142.91	\$2,419	\$0	(\$6,178)	8	(\$328)	\$0	\$0	\$0	\$0
24	RT	7430	PG&E	Fresno	2-Aug-13	20	No	INC	1	17:27	17:59	8.33	\$350	\$33	(\$364)	0	\$0	\$0	\$0	\$0	\$0
25	RT	7430	PG&E	Fresno	3-Aug-13	50	No	INC	3	19:25	21:59	149.74	\$1,843	\$0	(\$6,278)	8	(\$340)	\$0	\$0	\$0	\$0
26	RT	7430	PG&E	Fresno	4-Aug-13	20	No	INC	2	19:38	20:17	13.99	\$806	\$175	(\$573)	0	\$0	\$0	\$0	\$0	\$0
27	RT	7430	PG&E	Fresno	5-Aug-13	20	No	INC	2	8:37	9:10	13.63	\$921	\$52	(\$395)	0	\$0	\$0	\$0	\$0	\$0
28	RT	7430	PG&E	Fresno	12-Aug-13	83	Yes	INC	1	21:45	21:54	30.93	\$1,314	\$333	(\$2,331)	0	\$0	\$0	\$0	\$0	\$0
29	RT	7430	PG&E	Fresno	16-Aug-13	40	No	INC	2	21:21	22:41	5.64	\$569	\$0	\$292	3	\$0	\$0	\$0	\$0	\$0
30	RT	7430	PG&E	Fresno	20-Aug-13	3	Yes	INC	1	14:05	14:27	-10.02	\$0	\$0	\$445	1	(\$45)	\$0	\$0	\$0	\$0
31	RT	7430	PG&E	Fresno	25-Aug-13	20	No	INC	4	19:14	22:59	-97.05	\$1,394	\$0	\$4,555	0	\$0	\$0	\$0	\$0	\$0
32	RT	Communication Failure	Intertie	N/A	23-Aug-13	0	No	INC	1	2:00	2:59	-2.29	\$0	\$0	\$68	0	\$0	\$0	\$0	\$0	\$0
33	RT	Contingency	Intertie	N/A	23-Aug-13	200	No	DEC	3	16:17	18:59	-799.41	\$0	\$0	\$21,321	(517)	\$0	\$11,047	\$0	\$0	\$0
34	RT	Contingency	PG&E	Fresno	18-Aug-13	83-404	Yes	INC	2	16:14	17:03	289.57	\$8,316	\$947	(\$284,648)	1	(\$41)	\$0	\$0	\$0	\$0
35	RT	Contingency	PG&E	Fresno	23-Aug-13	244	Yes	INC	1	16:16	16:20	-1.22	\$0	\$0	\$54	6	(\$278)	\$0	\$0	(\$24)	\$0
36	RT	Contingency	SCE	LA Basin	18-Aug-13	195-578	Yes	INC	5	16:20	20:57	1374.28	\$94,493	\$9,694	(\$523,236)	344	(\$65,306)	\$0	\$0	\$0	\$0
37	RT	Contingency	SCE	LA Basin	23-Aug-13	46	Yes	INC	1	16:20	16:54	29.46	\$1,794	\$66	(\$1,517)	0	\$0	\$0	\$0	\$0	\$0
38	RT	Fire	SCE	LA Basin	26-Aug-13	25	Yes	INC	9	15:00	23:59	1407.17	\$29,805	\$17,486	(\$122,853)	0	\$0	\$0	\$0	\$0	\$0
39	RT	Fire	SDG&E	San Diego-IV	26-Aug-13	40	No	INC	12	12:00	23:59	2132.69	\$86,941	\$19,363	(\$287,098)	0	\$0	\$0	\$0	\$0	\$0
40	RT	Fire	SDG&E	San Diego-IV	27-Aug-13	40	No	INC	24	0:00	23:59	3380.38	\$214,393	\$10,790	(\$207,639)	0	\$0	\$0	\$0	\$0	\$0
41	RT	Gas/Fuel Supply Limitations	SCE	LA Basin	29-Aug-13	74	No	DEC	4	12:30	15:59	-228.26	\$0	\$0	\$1,020	(227)	\$0	\$997	\$0	\$0	\$0
42	RT	Gas/Fuel Supply Limitations	SCE	LA Basin	29-Aug-13	0	No	INC	2	14:15	15:59	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
43	RT	Gas/Fuel Supply Limitations	SDG&E	San Diego-IV	29-Aug-13	44-78	Yes	DEC	4	12:30	15:59	-213.83	\$0	\$0	\$2,290	(207)	\$0	\$1,869	\$0	\$0	\$0
44	RT	Gas/Fuel Supply Limitations	SDG&E	San Diego-IV	29-Aug-13	0	Yes	INC	4	12:35	15:59	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0

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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	Startup Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
45	RT	Intertie Emergency Assistance	Intertie	N/A	21-Aug-13	60-80	No	INC	2	11:40	12:59	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
46	RT	Intertie Emergency Assistance	Intertie	N/A	26-Aug-13	50	No	INC	1	8:03	8:59	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
47	RT	Intertie Emergency Assistance	Intertie	N/A	29-Aug-13	160-330	No	INC	5	10:39	14:59	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
48	RT	Load Forecast Uncertainty	PG&E	Bay Area	14-Aug-13	45	Yes	INC	15	9:00	23:59	1344.49	\$46,692	\$0	(\$59,285)	0	\$0	\$0	\$0	\$0	\$0
49	RT	Load Forecast Uncertainty	PG&E	N/A	8-Aug-13	142-303	Yes	INC	11	13:15	23:59	3621.91	\$132,241	\$17,979	(\$149,750)	7	(\$286)	\$0	(\$51)	\$0	\$0
50	RT	Load Forecast Uncertainty	PG&E	N/A	9-Aug-13	142	Yes	INC	2	0:00	1:14	177.48	\$8,496	\$0	(\$5,167)	1	(\$35)	\$0	(\$35)	\$0	\$0
51	RT	Load Forecast Uncertainty	PG&E	N/A	19-Aug-13	180	Yes	INC	11	13:00	23:59	1957.94	\$135,465	\$30,253	(\$262,010)	0	\$0	\$0	\$0	\$0	\$0
52	RT	Load Forecast Uncertainty	PG&E	N/A	20-Aug-13	50	Yes	INC	2	22:00	23:59	97.92	\$7,567	\$0	(\$3,576)	0	\$0	\$0	\$0	\$0	\$0
53	RT	Load Forecast Uncertainty	PG&E	N/A	21-Aug-13	50	Yes	INC	24	0:00	23:59	1220.60	\$90,805	\$0	(\$47,543)	0	\$0	\$0	\$0	\$0	\$0
54	RT	Load Forecast Uncertainty	PG&E	N/A	27-Aug-13	180	Yes	INC	10	12:00	21:59	1804.39	\$145,317	\$30,253	(\$115,062)	0	(\$6)	\$0	(\$34)	\$0	\$0
55	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	9-Aug-13	0	Yes	INC	1	0:00	0:34	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
56	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	21-Aug-13	20-40	Yes	INC	19	5:00	23:59	1365.27	\$92,622	\$8,104	(\$66,312)	0	\$0	\$0	\$0	\$0	\$0
57	RT	Load Forecast Uncertainty	SCE	LA Basin	9-Aug-13	0	No	INC	1	0:00	0:04	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
58	RT	Load Forecast Uncertainty	SCE	LA Basin	20-Aug-13	0	Yes	INC	1	0:00	0:14	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
59	RT	Load Forecast Uncertainty	SCE	LA Basin	21-Aug-13	10-65	Yes	INC	19	5:00	23:59	4050.72	\$165,430	\$56,419	(\$199,327)	0	\$0	\$0	\$0	\$0	\$0
60	RT	Load Forecast Uncertainty	SCE	LA Basin	31-Aug-13	20	Yes	INC	24	0:00	23:59	923.56	\$68,586	\$0	(\$50,507)	0	(\$8)	\$0	(\$0)	\$0	\$0
61	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	31-Aug-13	20-40	No	INC	22	2:00	23:59	2141.81	\$161,924	\$10,790	(\$114,904)	0	(\$7)	\$0	(\$2)	\$0	\$0
62	RT	Market Disruption	SCE	LA Basin	25-Aug-13	215	No	INC	2	12:26	13:59	275.66	\$0	\$0	(\$34,614)	24	(\$1,326)	\$0	\$0	\$0	\$0
63	RT	Operating Reserve Deficiency	PG&E	Bay Area	28-Aug-13	120-350	Yes	INC	6	14:45	19:59	1020.97	\$81,262	\$6,183	(\$62,341)	87	(\$3,611)	\$0	(\$256)	\$0	\$0
64	RT	Over Generation	SCE	LA Basin	23-Aug-13	137	Yes	INC	1	16:20	16:54	156.86	\$2,791	\$101	(\$7,969)	0	\$0	\$0	\$0	\$0	\$0
65	RT	Over Generation	SCE	N/A	23-Aug-13	466	No	DEC	1	16:40	16:46	-62.11	\$0	\$0	\$2,435	(1)	\$0	\$0	\$0	\$0	\$0
66	RT	Path 26	SCE	Big Creek-Ventura	28-Aug-13	50	Yes	INC	12	12:00	23:59	6676.06	\$70,284	\$72,131	(\$430,364)	0	(\$0)	\$0	\$0	(\$0)	\$0
67	RT	SCE SOB 204	SCE	Big Creek-Ventura	14-Aug-13	44-75	No	INC	2	18:25	19:25	69.86	\$0	\$0	(\$10,978)	0	\$0	\$0	\$0	\$0	\$0

Department of Market Quality and Renewable Integration – California ISO

Num ber	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitm ent	INC_ DEC	Hours	Begin Time	End Time	Total MWH	Min Load cost	Startup Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
68	RT	SCE SOB 204	SCE	Big Creek-Ventura	20-Aug-13	78-99	No	DEC	2	0:45	1:59	71.96	\$0	\$0	(\$3,095)	0	\$0	\$0	\$0	\$0	\$0
69	RT	SCE SOB 204	SCE	Big Creek-Ventura	30-Aug-13	4-188	No	INC	4	19:55	22:59	276.15	\$0	\$0	(\$15,854)	229	(\$11,605)	\$0	\$0	(\$5,045)	\$0
70	RT	SCE SOB 204	SCE	Big Creek-Ventura	31-Aug-13	27-147	No	DEC	9	15:20	23:59	-61.89	\$0	\$0	\$827	0	\$0	\$0	\$0	\$0	\$0
71	RT	SCE SOB 204	SCE	Big Creek-Ventura	31-Aug-13	12-185	No	INC	8	16:50	23:59	357.08	\$0	\$0	(\$15,783)	286	(\$11,243)	\$0	\$0	(\$4,902)	\$0
72	RT	SP26 Capacity	SCE	LA Basin	23-Aug-13	302-348	Yes	INC	5	16:15	20:59	2173.94	\$3,708	\$0	\$83,393	(812)	\$0	\$25,042	\$0	\$0	\$0
73	RT	Software Limitation	PG&E	Bay Area	1-Aug-13	700	No	INC	3	1:52	3:59	-68.39	\$971	\$0	(\$1,110)	(14)	\$0	\$99	\$0	\$0	\$0
74	RT	Software Limitation	PG&E	Bay Area	5-Aug-13	0	No	INC	8	12:45	19:59	-0.01	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
75	RT	Software Limitation	PG&E	Fresno	1-Aug-13	310	No	DEC	1	4:15	4:59	-258.33	\$0	\$0	\$7,759	0	\$0	\$0	\$0	\$0	\$0
76	RT	Software Limitation	PG&E	Fresno	26-Aug-13	0	Yes	INC	2	0:45	1:44	2.92	\$0	\$0	(\$127)	0	\$0	\$0	\$0	\$0	\$0
77	RT	Software Limitation	PG&E	Fresno	28-Aug-13	0	Yes	INC	2	1:15	2:14	1.17	\$220	\$0	(\$69)	0	\$0	\$0	\$0	\$0	\$0
78	RT	Software Limitation	PG&E	Humboldt	6-Aug-13	15	No	INC	11	7:40	17:29	256.36	\$0	\$0	(\$8,942)	1	(\$36)	\$0	\$0	\$0	\$0
79	RT	Software Limitation	SCE	Big Creek-Ventura	8-Aug-13	0	Yes	INC	1	23:35	23:59	2.50	\$204	\$38	(\$87)	0	\$0	\$0	\$0	\$0	\$0
80	RT	Software Limitation	SCE	Big Creek-Ventura	13-Aug-13	0	Yes	INC	2	4:25	5:24	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
81	RT	Software Limitation	SCE	Big Creek-Ventura	21-Aug-13	0	Yes	INC	1	1:30	1:59	0.00	\$0	\$0	(\$0)	0	\$0	\$0	\$0	\$0	\$0
82	RT	Software Limitation	SCE	Big Creek-Ventura	22-Aug-13	0	Yes	INC	1	0:00	0:59	0.00	\$0	\$0	(\$0)	0	\$0	\$0	\$0	\$0	\$0
83	RT	Software Limitation	SCE	Big Creek-Ventura	23-Aug-13	54	Yes	INC	1	16:20	16:54	34.59	\$666	\$0	(\$1,802)	0	\$0	\$0	\$0	\$0	\$0
84	RT	Software Limitation	SCE	Big Creek-Ventura	31-Aug-13	0	Yes	INC	2	1:45	2:14	0.85	\$0	\$0	(\$31)	0	\$0	\$0	\$0	\$0	\$0
85	RT	Software Limitation	SCE	LA Basin	1-Aug-13	96	Yes	DEC	2	16:55	17:24	-8.05	\$0	\$0	\$139	(5)	\$0	\$32	\$0	\$0	\$0
86	RT	Software Limitation	SCE	LA Basin	1-Aug-13	0	Yes	INC	2	16:55	17:24	-4.02	\$0	\$0	\$143	0	\$0	\$0	\$0	\$0	\$0
87	RT	Software Limitation	SCE	LA Basin	8-Aug-13	0	Yes	INC	21	3:35	23:59	9.86	\$562	\$113	(\$335)	0	\$0	\$0	\$0	\$0	\$0
88	RT	Software Limitation	SCE	LA Basin	17-Aug-13	0	Yes	INC	1	20:20	20:49	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
89	RT	Software Limitation	SCE	LA Basin	19-Aug-13	0	Yes	INC	1	23:15	23:59	3.85	\$0	\$0	(\$191)	0	\$0	\$0	\$0	\$0	\$0
90	RT	Software Limitation	SCE	LA Basin	22-Aug-13	0	Yes	INC	3	10:15	12:39	3.91	\$0	\$0	(\$192)	0	\$0	\$0	\$0	\$0	\$0
91	RT	Software Limitation	SCE	LA Basin	23-Aug-13	94	Yes	INC	6	16:20	21:49	68.01	\$3,514	\$250	(\$3,498)	0	\$0	\$0	\$0	\$0	\$0
92	RT	Software Limitation	SCE	LA Basin	25-Aug-13	0	Yes	INC	1	18:00	18:59	-3.83	\$0	\$0	\$158	0	\$0	\$0	\$0	\$0	\$0
93	RT	Software Limitation	SCE	LA Basin	28-Aug-13	105	Yes	INC	9	14:45	22:39	66.34	\$2,470	\$117	(\$3,655)	0	\$0	\$0	\$0	\$0	\$0
94	RT	Software Limitation	SCE	LA Basin	31-Aug-13	0	Yes	INC	5	1:45	5:14	7.58	\$0	\$40	(\$257)	0	\$0	\$0	\$0	\$0	\$0

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Num ber	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Com mitm ent	INC_ DEC	Hours	Begin Time	End Time	Total MWH	Min Load cost	Startup Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
95	RT	Software Limitation	SDG&E	San Diego-IV	21-Aug-13	522	No	INC	2	9:50	10:09	-1.87	\$0	\$0	\$73	0	\$0	\$0	\$0	\$0	\$0
96	RT	Software Limitation	SDG&E	San Diego-IV	28-Aug-13	33	Yes	INC	7	14:45	20:44	23.53	\$1,709	\$0	(\$1,282)	0	\$0	\$0	\$0	\$0	\$0
97	RT	System Energy	Intertie	N/A	6-Aug-13	75	No	INC	1	2:00	2:59	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
98	RT	System Energy	Intertie	N/A	9-Aug-13	500	No	INC	1	7:00	7:59	150.00	\$0	\$0	(\$5,042)	150	(\$5,042)	\$0	(\$858)	\$0	\$0
99	RT	System Energy	Intertie	N/A	19-Aug-13	686	No	INC	1	0:00	0:59	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
100	RT	System Energy	Intertie	N/A	29-Aug-13	80	No	INC	1	16:00	16:59	0.00	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0
101	RT	Transmission Outage PG&E	PG&E	Bay Area	24-Aug-13	19	No	INC	3	12:27	14:59	37.27	\$2,522	\$491	(\$1,438)	0	\$0	\$0	\$0	\$0	\$0
102	RT	Transmission Outage PG&E	PG&E	Fresno	14-Aug-13	92	No	INC	9	9:50	17:59	241.19	\$12,564	\$0	(\$9,032)	0	\$0	\$0	\$0	\$0	\$0
103	RT	Transmission Outage PG&E	PG&E	Fresno	15-Aug-13	77	Yes	DEC	2	14:55	15:59	11.54	\$0	\$0	(\$719)	0	\$0	\$0	\$0	\$0	\$0
104	RT	Transmission Outage PG&E	PG&E	Fresno	15-Aug-13	83- 180	Yes	INC	5	11:04	15:59	1128.9 6	\$56,246	\$4,957	(\$68,78 1)	193	(\$15,84 0)	\$0	\$0	\$0	\$0
105	RT	Transmission Outage PG&E	PG&E	Humboldt	6-Aug-13	16- 46	No	INC	4	20:48	23:14	59.27	\$0	\$0	(\$1,923)	6	(\$202)	\$0	\$0	(\$3)	\$0
106	RT	Transmission Outage PG&E	PG&E	Humboldt	7-Aug-13	15- 30	No	INC	24	0:00	23:59	463.09	\$1,046	\$197	(\$15,83 2)	11	(\$383)	\$0	\$0	(\$25)	\$0
107	RT	Transmission Outage PG&E	PG&E	Humboldt	8-Aug-13	15- 30	No	INC	16	0:00	15:59	180.33	\$1,100	\$96	(\$7,255)	8	(\$377)	\$0	\$0	(\$0)	\$0
108	RT	Transmission Outage PG&E	PG&E	Sierra	18-Aug-13	63	Yes	INC	2	22:51	23:39	45.33	\$1,195	\$0	(\$1,861)	13	(\$463)	\$0	\$0	(\$34)	\$0
109	RT	Transmission Outage PG&E	PG&E	Stockton	16-Aug-13	10- 25	Yes	INC	4	18:55	21:59	54.07	\$0	\$0	(\$2,619)	46	(\$2,229)	\$0	\$0	(\$986)	\$0
110	RT	Transmission Outage SCE	SCE	Big Creek- Ventura	20-Aug-13	50- 75	Yes	INC	6	9:47	14:59	383.46	\$23,415	\$291	(\$42,38 0)	268	(\$13,85 7)	\$0	\$0	(\$3,475)	\$0
111	RT	Transmission Outage SCE	SCE	LA Basin	10-Aug-13	20	Yes	INC	12	0:00	11:59	240.12	\$34,293	\$0	(\$6,731)	0	(\$7)	\$0	\$0	\$0	\$0
112	RT	Transmission Outage SCE	SCE	LA Basin	28-Aug-13	46	Yes	INC	2	14:45	15:19	28.92	\$1,028	\$0	(\$1,560)	0	\$0	\$0	\$0	\$0	\$0
113	RT	Transmission Outage SCE	SDG&E	San Diego-IV	28-Aug-13	131	No	INC	8	11:05	18:59	-128.60	\$454	\$0	\$5,757	0	(\$0)	\$0	\$0	\$0	\$0
114	RT	Transmission Outage SDG&E	SCE	LA Basin	16-Aug-13	0	Yes	INC	1	13:30	13:59	0.00	\$559	\$82	(\$0)	0	\$0	\$0	\$0	\$0	\$0
115	RT	Transmission Outage SDG&E	SDG&E	San Diego-IV	15-Aug-13	4	Yes	DEC	7	11:29	17:50	2.00	\$0	\$0	(\$156)	0	\$0	\$0	\$0	\$0	\$0
116	RT	Transmission Outage SDG&E	SDG&E	San Diego-IV	15-Aug-13	44	Yes	INC	7	11:29	17:50	198.02	\$9,093	\$0	(\$25,70 6)	0	\$0	\$0	\$0	\$0	\$0
117	RT	Transmission Outage SDG&E	SDG&E	San Diego-IV	16-Aug-13	350	No	INC	4	11:31	14:59	-390.63	\$0	\$0	\$45,932	(289)	\$0	\$50,17 0	\$0	(\$47,85 8)	\$0
118	RT	Transmission Outage SDG&E	SDG&E	San Diego-IV	28-Aug-13	80- 82	No	INC	4	11:55	14:59	299.79	\$0	\$0	(\$17,68 8)	0	\$0	\$0	\$0	\$0	\$0

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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	Startup Cost	CC6470	ED MWH (INC/DEC)	CC6470 INC	CC6470 DEC	CC6482	CC6488	CC6620
119	RT	Unit Testing	PG&E	Bay Area	1-Aug-13	180-600	Yes	INC	19	5:55	23:59	6596.05	\$0	\$0	(\$203,774)	4098	(\$143,092)	\$0	\$0	\$0	\$0
120	RT	Unit Testing	PG&E	Bay Area	2-Aug-13	180-600	No	INC	16	0:00	15:59	5195.91	\$0	\$0	(\$233,116)	2053	(\$106,436)	\$0	\$0	\$0	\$0
121	RT	Unit Testing	PG&E	Bay Area	3-Aug-13	190-600	No	INC	21	3:20	23:59	10584.37	\$0	\$0	(\$401,664)	6918	(\$266,722)	\$0	\$0	\$0	\$0
122	RT	Unit Testing	PG&E	Bay Area	4-Aug-13	500-600	No	INC	24	0:00	23:59	13039.37	\$0	\$0	(\$484,649)	8714	(\$327,934)	\$0	\$0	\$0	\$0
123	RT	Unit Testing	PG&E	Bay Area	5-Aug-13	600	No	INC	12	0:00	11:49	7493.75	\$0	\$0	(\$250,665)	5209	(\$180,207)	\$0	\$0	\$0	\$0
124	RT	Unit Testing	PG&E	Bay Area	7-Aug-13	181	Yes	INC	6	18:30	23:59	1057.89	\$0	\$0	(\$36,902)	5	(\$203)	\$0	\$0	\$0	\$0
125	RT	Unit Testing	PG&E	Bay Area	8-Aug-13	183-231	No	INC	2	21:50	22:59	290.96	\$0	\$0	(\$10,960)	48	(\$1,886)	\$0	\$0	\$0	\$0
126	RT	Unit Testing	PG&E	Humboldt	14-Aug-13	30	No	INC	6	11:56	16:59	77.60	\$0	\$0	(\$3,798)	5	(\$245)	\$0	\$0	\$0	\$0
127	RT	Unit Testing	SCE	LA Basin	1-Aug-13	150	No	INC	1	9:00	9:39	77.47	\$2,537	\$0	(\$1,534)	2	(\$69)	\$0	\$0	\$0	\$0
128	RT	Unit Testing	SCE	LA Basin	28-Aug-13	16-24	No	INC	2	8:08	9:54	34.66	\$0	\$0	(\$1,407)	3	(\$179)	\$0	\$0	\$0	\$0
129	RT	Unit Testing	SDG&E	San Diego-IV	14-Aug-13	35	Yes	INC	2	9:09	10:09	30.33	\$10,252	\$0	(\$1,023)	2	(\$58)	\$0	\$0	\$0	\$0
130	RT	Weather	PG&E	N/A	19-Aug-13	52	No	INC	12	12:00	23:59	1657.78	\$53,169	\$116,623	(\$219,537)	0	(\$1)	\$0	\$0	\$0	\$0
131	RT	Weather	SCE	Big Creek-Ventura	19-Aug-13	20	Yes	INC	4	11:00	14:59	323.99	\$10,013	\$0	(\$83,666)	0	(\$1)	\$0	(\$0)	\$0	\$0
132	RT	Weather	SCE	LA Basin	19-Aug-13	50	Yes	INC	15	9:00	23:59	2808.05	\$183,498	\$73,811	(\$465,053)	1	(\$25)	\$0	(\$41)	\$0	\$0
133	RT	Weather	SCE	LA Basin	22-Aug-13	20	Yes	INC	21	0:00	20:59	927.99	\$61,227	\$0	(\$42,787)	0	(\$7)	\$0	(\$2)	\$0	\$0
134	RT	Weather	SDG&E	San Diego-IV	19-Aug-13	20	No	INC	15	9:00	23:59	252.02	\$34,891	\$19,363	(\$29,649)	0	(\$4)	\$0	(\$1)	\$0	\$0

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 ISO 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 ISO issued additional instructions to resources B and C for the same reason as shown in Table 2. Generally, exceptional dispatches prior to the day-ahead market are commitments to minimum load. In this case, 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 which are different from the bid-in minimum load and start up costs⁷. Only those quantities which are relevant 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. Thus, the MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. Commitments are broken out separately from energy dispatches. In the day-ahead, however the exceptional dispatches are nearly always just commitments, as in this example. The Begin Time column shows hour ending 5 as this was the hour ending for first dispatch of the day, and the End Time column shows hour ending 23, as this was the hour with last dispatch. It is also possible that there might be some hours between the begin time and the end time where there might not be exceptional dispatch instructions for the given reason, meaning that the range between the begin time and end time can include null hours with no dispatch. The total volume (MWh) is the sum of MWh quantity for each resource, which adds up to 990 MWh. Similarly, all cost information is sum of individual resource costs. It is possible that 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 ISO 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. In this case, it is the sum of 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

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

Example 2: Incremental Exceptional Dispatch Instructions in RTM

In this fictitious example, the ISO 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 did not have a day-ahead award in those hours. The ISO issued another exceptional dispatch instruction to resource B, to be dispatched at 40 MW from hours 7:00 through 9:00 in real-time for the transmission procedure 7110. This resource had a day-ahead schedule of 20 MW from the day-ahead market, which implies that this exceptional dispatch instruction was an incremental instruction and the exceptional dispatch MW was 20 MW. Similarly, the details of exceptional dispatch (ED) instruction for resource C is 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 the sum of 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 for hours, so the charge code CC6470 is calculated at (180 MWh * \$10/MWh) and is equal to 1800. Since this resource is not dispatched above its Pmin, it has a zero volume (MWh) of exceptional dispatch. As a result, 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 which is 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 * (\$100/MWh-\$10/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. Thus the MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. This column shows a commitment if there was a single commitment in the entire interval of exceptional dispatch. The Begin Time column shows the time of the first dispatch of the day. This is a time not a range. Similarly, the End Time column shows a time and not a range. Exceptional dispatches occurred between these two times. Since there was a commitment between the begin time and end time, then the Commitment column displays yes for the summary. Similarly, the INC/DEC column shows an INC as there was an incremental dispatch between the begin time and end time. As mentioned in the previous example, it is possible that there might be some hours between the begin time and end time where there were no exceptional dispatch instructions for the given reason. Both volume and cost information columns are simply 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 on the previous page.

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

Please note that it is possible that the ISO 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 ISO 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 ISO 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 ISO 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 as shown in Table 7. This summary classifies the data by reason, resource location, local reliability area, and trade date. Please note that 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. Thus 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 ISO to perform price impact analysis on two distinct pricing nodes for the entire reporting period. The order also mentioned that the ISO must pick two pricing nodes for the entire reporting period that are most impacted by the exceptional dispatch instructions, and the two pricing nodes must belong to two different load aggregation points (LAPs).

Based on this requirement the ISO implemented a methodology to perform price impact analysis. First, the ISO identified a heavily impacted 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 ISO 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 necessary information to perform price impact analysis.

An exceptional dispatch instruction can be generally 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. In general, 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 is allowed to 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, in other words, the resource was exceptionally dispatched to its Pmax and forced to generate at that level, the resource was considered 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 located 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 8640 five-minute intervals in August, this resource was issued exceptional dispatch instructions in 84 five-minute intervals. This resource was eligible to set the LMP in 75 intervals. Resource calculated LMP was larger than the market LMP in 41 of the 75 intervals. In the 41 intervals, the average increase in five minute LMP was \$9.67/MWh. Resource calculated LMP was less than the market LMP in 35 of the 75 intervals. In the 35 intervals, the average decrease in five minute LMP was \$12.79/MWh. This implies that if the ISO was able to 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 \$3.62/MWh.

Table 9 shows the price impact analysis information for node B, which is located 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 8640 five minute intervals, this resource was issued an exceptional dispatch instruction in 789 five minute intervals. This resource was eligible to set the LMP in 777 intervals. Out of the 777 intervals, resource calculated LMP was larger than the market LMP in 647 intervals. In the 647 intervals, the average increase in five minute LMP was \$16.82/MWh. Out of the 777 intervals, resource calculated LMP was less than the market LMP in 130 intervals. In the 130 intervals, the average decrease in five minute LMP was \$102.34/MWh. This implies that if the ISO was able to model the constraint for this exceptional dispatch, then this resource and all other pricing nodes associated with that constraint would observe an average decrease of \$6.49/MWh.

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

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1	1-Aug-13	5	4	\$39.65	No	\$67.08	\$27.43
2	1-Aug-13	5	5	\$39.81	No	\$67.08	\$27.27
3	1-Aug-13	5	6	\$39.96	No	\$67.08	\$27.12
4	1-Aug-13	5	7	(\$9.59)	No	\$67.08	\$76.67
5	1-Aug-13	5	8	\$16.19	No	\$67.08	\$50.89
6	1-Aug-13	5	9	\$39.58	No	\$67.08	\$27.50
7	1-Aug-13	5	10	\$39.59	No	\$67.08	\$27.49
8	1-Aug-13	5	11	\$39.54	No	\$67.08	\$27.54
9	1-Aug-13	5	12	\$16.19	No	\$67.08	\$50.89
10	15-Aug-13	12	2	\$45.33	Yes	\$53.67	\$8.34
11	15-Aug-13	12	3	\$45.32	Yes	\$53.67	\$8.35
12	15-Aug-13	12	4	\$46.54	Yes	\$53.67	\$7.13
13	15-Aug-13	12	5	\$48.59	Yes	\$53.67	\$5.08
14	15-Aug-13	12	6	\$44.93	Yes	\$53.67	\$8.74
15	15-Aug-13	12	7	\$44.33	Yes	\$53.67	\$9.34
16	15-Aug-13	12	8	\$46.57	Yes	\$53.67	\$7.10
17	15-Aug-13	12	9	\$46.57	Yes	\$53.67	\$7.10
18	15-Aug-13	12	10	\$44.39	Yes	\$53.67	\$9.28
19	15-Aug-13	12	11	\$48.83	Yes	\$53.67	\$4.84
20	15-Aug-13	12	12	\$58.01	Yes	\$53.67	(\$4.34)
21	15-Aug-13	13	1	\$43.12	Yes	\$53.67	\$10.55
22	15-Aug-13	13	2	\$43.42	Yes	\$53.67	\$10.25
23	15-Aug-13	13	3	\$43.40	Yes	\$53.67	\$10.27
24	15-Aug-13	13	4	\$40.53	Yes	\$53.67	\$13.14
25	15-Aug-13	13	5	\$42.51	Yes	\$53.67	\$11.16
26	15-Aug-13	13	6	\$42.51	Yes	\$53.67	\$11.16
27	15-Aug-13	13	7	\$42.13	Yes	\$53.67	\$11.54
28	15-Aug-13	13	8	\$42.13	Yes	\$53.67	\$11.54
29	15-Aug-13	13	9	\$42.13	Yes	\$53.67	\$11.54
30	15-Aug-13	13	10	\$41.91	Yes	\$53.67	\$11.76
31	15-Aug-13	13	11	\$46.03	Yes	\$53.67	\$7.64
32	15-Aug-13	13	12	\$46.03	Yes	\$53.67	\$7.64
33	15-Aug-13	14	1	\$59.41	Yes	\$53.67	(\$5.74)
34	15-Aug-13	14	2	\$57.64	Yes	\$53.67	(\$3.97)
35	15-Aug-13	14	3	\$60.12	Yes	\$53.67	(\$6.45)
36	15-Aug-13	14	4	\$44.83	Yes	\$53.67	\$8.84

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
37	15-Aug-13	14	5	\$44.83	Yes	\$53.67	\$8.84
38	15-Aug-13	14	6	\$44.83	Yes	\$53.67	\$8.84
39	15-Aug-13	14	7	\$45.28	Yes	\$53.67	\$8.39
40	15-Aug-13	14	8	\$43.85	Yes	\$53.67	\$9.82
41	15-Aug-13	14	9	\$43.88	Yes	\$53.67	\$9.79
42	15-Aug-13	14	10	\$46.40	Yes	\$53.67	\$7.27
43	15-Aug-13	14	11	\$47.69	Yes	\$53.67	\$5.98
44	15-Aug-13	14	12	\$51.21	Yes	\$53.67	\$2.46
45	15-Aug-13	15	1	\$48.53	Yes	\$53.67	\$5.14
46	15-Aug-13	15	2	\$48.90	Yes	\$53.67	\$4.77
47	15-Aug-13	15	3	\$48.90	Yes	\$53.67	\$4.77
48	15-Aug-13	15	4	\$56.11	Yes	\$53.67	(\$2.44)
49	15-Aug-13	15	4	\$56.11	Yes	\$57.62	\$1.51
50	15-Aug-13	15	5	\$62.63	Yes	\$53.67	(\$8.96)
51	15-Aug-13	15	5	\$62.63	Yes	\$57.62	(\$5.01)
52	15-Aug-13	15	6	\$64.25	Yes	\$53.67	(\$10.58)
53	15-Aug-13	15	6	\$64.25	Yes	\$57.62	(\$6.63)
54	15-Aug-13	15	7	\$66.85	Yes	\$53.67	(\$13.18)
55	15-Aug-13	15	7	\$66.85	Yes	\$57.62	(\$9.23)
56	15-Aug-13	15	8	\$64.89	Yes	\$53.67	(\$11.22)
57	15-Aug-13	15	8	\$64.89	Yes	\$57.62	(\$7.27)
58	15-Aug-13	15	9	\$66.79	Yes	\$53.67	(\$13.12)
59	15-Aug-13	15	9	\$66.79	Yes	\$57.62	(\$9.17)
60	15-Aug-13	15	10	\$67.74	Yes	\$53.67	(\$14.07)
61	15-Aug-13	15	10	\$67.74	Yes	\$57.62	(\$10.12)
62	15-Aug-13	15	11	\$68.08	Yes	\$53.67	(\$14.41)
63	15-Aug-13	15	11	\$68.08	Yes	\$57.62	(\$10.46)
64	15-Aug-13	15	12	\$69.34	Yes	\$49.83	(\$19.51)
65	15-Aug-13	15	12	\$69.34	Yes	\$53.67	(\$15.67)
66	15-Aug-13	15	12	\$69.34	Yes	\$57.62	(\$11.72)
67	15-Aug-13	16	1	\$62.40	Yes	\$49.83	(\$12.57)
68	15-Aug-13	16	2	\$65.88	Yes	\$49.83	(\$16.05)
69	15-Aug-13	16	3	\$66.26	Yes	\$49.83	(\$16.43)
70	15-Aug-13	16	4	\$65.25	Yes	\$49.83	(\$15.42)
71	15-Aug-13	16	5	\$65.57	Yes	\$49.83	(\$15.74)
72	15-Aug-13	16	6	\$68.28	Yes	\$49.83	(\$18.45)
73	15-Aug-13	16	7	\$69.51	Yes	\$49.83	(\$19.68)
74	15-Aug-13	16	8	\$69.51	Yes	\$49.83	(\$19.68)

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Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
75	15-Aug-13	16	9	\$69.10	Yes	\$49.83	(\$19.27)
76	15-Aug-13	16	10	\$74.33	Yes	\$49.83	(\$24.50)
77	15-Aug-13	16	11	\$71.62	Yes	\$49.83	(\$21.79)
78	15-Aug-13	16	12	\$71.85	Yes	\$49.83	(\$22.02)
79	20-Aug-13	15	2	\$43.75	Yes	\$57.93	\$14.18
80	20-Aug-13	15	3	\$43.75	Yes	\$57.93	\$14.18
81	20-Aug-13	15	4	\$43.75	Yes	\$57.93	\$14.18
82	20-Aug-13	15	5	\$47.06	Yes	\$57.93	\$10.87
83	20-Aug-13	15	6	\$46.91	Yes	\$57.93	\$11.02
84	23-Aug-13	17	4	\$44.32	Yes	\$86.48	\$42.16

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

Number	Trade Date	Trade Hour	Interval	Market LMP	Eligible Flag	Calculated LMP	Change in LMP
1	6-Aug-13	12	1	\$33.77	Yes	\$46.25	\$12.48
2	6-Aug-13	12	2	\$33.77	Yes	\$46.25	\$12.48
3	6-Aug-13	12	3	\$35.35	Yes	\$46.25	\$10.90
4	6-Aug-13	12	4	\$36.24	Yes	\$46.25	\$10.01
5	6-Aug-13	12	5	\$36.26	Yes	\$46.25	\$9.99
6	6-Aug-13	12	6	\$36.26	Yes	\$46.25	\$9.99
7	6-Aug-13	12	7	\$35.50	Yes	\$46.25	\$10.75
8	6-Aug-13	12	8	\$36.38	Yes	\$46.25	\$9.87
9	6-Aug-13	12	9	\$36.38	Yes	\$46.25	\$9.87
10	6-Aug-13	12	10	\$37.58	Yes	\$46.25	\$8.67
11	6-Aug-13	12	11	\$37.86	Yes	\$46.25	\$8.39
12	6-Aug-13	12	12	\$44.63	Yes	\$46.25	\$1.62
13	6-Aug-13	13	1	\$36.74	Yes	\$46.25	\$9.51
14	6-Aug-13	13	2	\$35.73	Yes	\$46.25	\$10.52
15	6-Aug-13	13	3	\$35.73	Yes	\$46.25	\$10.52
16	6-Aug-13	13	4	\$35.89	Yes	\$46.25	\$10.36
17	6-Aug-13	13	5	\$35.37	Yes	\$46.25	\$10.88
18	6-Aug-13	13	6	\$35.96	Yes	\$46.25	\$10.29
19	6-Aug-13	13	7	\$34.97	Yes	\$46.25	\$11.28
20	6-Aug-13	13	8	\$35.60	Yes	\$46.25	\$10.65
21	6-Aug-13	13	9	\$36.39	Yes	\$46.25	\$9.86
22	6-Aug-13	13	10	\$36.38	Yes	\$46.25	\$9.87
23	6-Aug-13	13	11	\$36.64	Yes	\$46.25	\$9.61
24	6-Aug-13	13	12	\$36.64	Yes	\$46.25	\$9.61
25	6-Aug-13	14	1	\$35.12	Yes	\$46.25	\$11.13
26	6-Aug-13	14	2	\$35.85	Yes	\$46.25	\$10.40
27	6-Aug-13	14	3	\$35.85	Yes	\$46.25	\$10.40
28	6-Aug-13	14	4	\$36.43	Yes	\$46.25	\$9.82
29	6-Aug-13	14	5	\$35.93	Yes	\$46.25	\$10.32
30	6-Aug-13	14	6	\$35.93	Yes	\$46.25	\$10.32
31	6-Aug-13	14	7	\$36.07	Yes	\$46.25	\$10.18
32	6-Aug-13	14	8	\$36.60	Yes	\$46.25	\$9.65
33	6-Aug-13	14	9	\$36.86	Yes	\$46.25	\$9.39
34	6-Aug-13	14	10	\$37.86	Yes	\$46.25	\$8.39
35	6-Aug-13	14	11	\$35.46	Yes	\$46.25	\$10.79
36	6-Aug-13	14	12	\$36.25	Yes	\$46.25	\$10.00
37	6-Aug-13	15	1	\$35.09	Yes	\$55.00	\$19.91
38	6-Aug-13	15	2	\$35.68	Yes	\$55.00	\$19.32
39	6-Aug-13	15	3	\$35.68	Yes	\$55.00	\$19.32
40	6-Aug-13	15	4	\$35.68	Yes	\$55.00	\$19.32

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41	6-Aug-13	15	5	\$36.34	Yes	\$55.00	\$18.66
42	6-Aug-13	15	6	\$36.34	Yes	\$55.00	\$18.66
43	6-Aug-13	15	7	\$35.86	Yes	\$55.00	\$19.14
44	6-Aug-13	15	8	\$36.12	Yes	\$55.00	\$18.88
45	6-Aug-13	15	9	\$35.60	Yes	\$55.00	\$19.40
46	6-Aug-13	15	10	\$35.23	Yes	\$55.00	\$19.77
47	6-Aug-13	15	11	\$35.50	Yes	\$55.00	\$19.50
48	6-Aug-13	15	12	\$35.76	Yes	\$55.00	\$19.24
49	6-Aug-13	16	1	\$32.29	Yes	\$55.00	\$22.71
50	6-Aug-13	16	2	\$33.81	Yes	\$55.00	\$21.19
51	6-Aug-13	16	3	\$34.62	Yes	\$55.00	\$20.38
52	6-Aug-13	16	4	\$34.39	Yes	\$55.00	\$20.61
53	6-Aug-13	16	5	\$33.84	Yes	\$55.00	\$21.16
54	6-Aug-13	16	6	\$33.94	Yes	\$55.00	\$21.06
55	6-Aug-13	16	7	\$32.41	Yes	\$55.00	\$22.59
56	6-Aug-13	16	8	\$32.49	Yes	\$55.00	\$22.51
57	6-Aug-13	16	9	\$34.77	Yes	\$55.00	\$20.23
58	6-Aug-13	16	10	\$34.50	Yes	\$55.00	\$20.50
59	6-Aug-13	16	11	\$34.69	Yes	\$55.00	\$20.31
60	6-Aug-13	16	12	\$35.14	Yes	\$55.00	\$19.86
61	6-Aug-13	17	1	\$34.14	Yes	\$55.00	\$20.86
62	6-Aug-13	17	2	\$34.14	Yes	\$55.00	\$20.86
63	6-Aug-13	17	3	\$34.14	Yes	\$55.00	\$20.86
64	6-Aug-13	17	4	\$34.17	Yes	\$55.00	\$20.83
65	6-Aug-13	17	5	\$35.26	Yes	\$55.00	\$19.74
66	6-Aug-13	17	6	\$35.29	Yes	\$55.00	\$19.71
67	6-Aug-13	17	7	\$34.59	Yes	\$55.00	\$20.41
68	6-Aug-13	17	8	\$36.91	Yes	\$55.00	\$18.09
69	6-Aug-13	17	9	\$36.14	Yes	\$55.00	\$18.86
70	6-Aug-13	17	10	\$36.22	Yes	\$55.00	\$18.78
71	6-Aug-13	17	11	\$36.74	Yes	\$55.00	\$18.26
72	6-Aug-13	17	12	\$36.82	Yes	\$55.00	\$18.18
73	6-Aug-13	18	1	\$36.92	Yes	\$55.00	\$18.08
74	6-Aug-13	18	2	\$36.66	Yes	\$55.00	\$18.34
75	6-Aug-13	18	3	\$36.39	Yes	\$55.00	\$18.61
76	6-Aug-13	18	4	\$32.60	Yes	\$55.00	\$22.40
77	6-Aug-13	18	5	\$35.17	Yes	\$55.00	\$19.83
78	6-Aug-13	18	6	\$34.18	Yes	\$55.00	\$20.82
79	6-Aug-13	18	7	\$51.39	Yes	\$55.00	\$3.61
80	6-Aug-13	18	8	\$51.86	Yes	\$55.00	\$3.14
81	6-Aug-13	18	9	\$35.76	Yes	\$55.00	\$19.24
82	6-Aug-13	18	10	\$37.86	Yes	\$55.00	\$17.14
83	6-Aug-13	18	11	\$37.93	Yes	\$55.00	\$17.07

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84	6-Aug-13	18	12	\$35.66	Yes	\$55.00	\$19.34
85	6-Aug-13	19	1	\$32.43	Yes	\$55.00	\$22.57
86	6-Aug-13	19	2	\$33.21	Yes	\$55.00	\$21.79
87	6-Aug-13	19	3	\$33.21	Yes	\$55.00	\$21.79
88	6-Aug-13	19	4	\$36.71	Yes	\$55.00	\$18.29
89	6-Aug-13	19	5	\$35.37	Yes	\$55.00	\$19.63
90	6-Aug-13	19	6	\$36.30	Yes	\$55.00	\$18.70
91	6-Aug-13	19	7	\$35.41	Yes	\$55.00	\$19.59
92	6-Aug-13	19	8	\$34.11	Yes	\$55.00	\$20.89
93	6-Aug-13	19	9	\$32.68	Yes	\$55.00	\$22.32
94	6-Aug-13	19	10	\$32.57	Yes	\$55.00	\$22.43
95	6-Aug-13	19	11	\$34.03	Yes	\$55.00	\$20.97
96	6-Aug-13	19	12	\$35.35	Yes	\$55.00	\$19.65
97	6-Aug-13	21	4	\$36.94	Yes	\$55.00	\$18.06
98	6-Aug-13	21	5	\$39.20	Yes	\$55.00	\$15.80
99	6-Aug-13	21	6	\$39.20	Yes	\$55.00	\$15.80
100	6-Aug-13	21	7	\$36.80	Yes	\$55.00	\$18.20
101	6-Aug-13	21	8	\$36.80	Yes	\$55.00	\$18.20
102	6-Aug-13	21	9	\$36.00	Yes	\$55.00	\$19.00
103	6-Aug-13	21	10	\$34.88	Yes	\$55.00	\$20.12
104	6-Aug-13	21	11	\$34.86	Yes	\$55.00	\$20.14
105	6-Aug-13	21	12	\$34.05	Yes	\$55.00	\$20.95
106	6-Aug-13	22	1	\$32.52	Yes	\$55.00	\$22.48
107	6-Aug-13	22	2	\$32.52	Yes	\$55.00	\$22.48
108	6-Aug-13	22	3	\$32.93	Yes	\$55.00	\$22.07
109	6-Aug-13	22	4	\$33.25	Yes	\$55.00	\$21.75
110	6-Aug-13	22	5	\$32.56	Yes	\$55.00	\$22.44
111	6-Aug-13	22	6	\$32.13	Yes	\$55.00	\$22.87
112	6-Aug-13	22	7	\$31.14	Yes	\$55.00	\$23.86
113	6-Aug-13	22	8	\$31.23	Yes	\$55.00	\$23.77
114	6-Aug-13	22	9	\$31.13	Yes	\$55.00	\$23.87
115	6-Aug-13	22	10	\$30.98	Yes	\$55.00	\$24.02
116	6-Aug-13	22	11	\$30.98	Yes	\$55.00	\$24.02
117	6-Aug-13	22	12	\$28.58	Yes	\$55.00	\$26.42
118	10-Aug-13	1	1	\$27.23	Yes	\$55.10	\$27.87
119	10-Aug-13	1	2	\$27.19	Yes	\$55.10	\$27.91
120	10-Aug-13	1	3	\$29.15	Yes	\$55.10	\$25.95
121	10-Aug-13	1	4	\$27.17	Yes	\$55.10	\$27.93
122	10-Aug-13	1	5	\$28.18	Yes	\$55.10	\$26.92
123	10-Aug-13	1	6	\$28.18	Yes	\$55.10	\$26.92
124	10-Aug-13	1	7	\$27.14	Yes	\$55.10	\$27.96
125	10-Aug-13	1	8	\$27.36	Yes	\$55.10	\$27.74
126	10-Aug-13	1	9	\$27.48	Yes	\$55.10	\$27.62

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127	10-Aug-13	1	10	\$27.30	Yes	\$55.10	\$27.80
128	10-Aug-13	1	11	\$28.14	Yes	\$55.10	\$26.96
129	10-Aug-13	1	12	\$21.46	Yes	\$55.10	\$33.64
130	10-Aug-13	2	1	\$28.76	Yes	\$55.10	\$26.34
131	10-Aug-13	2	2	\$29.74	Yes	\$55.10	\$25.36
132	10-Aug-13	2	3	\$29.78	Yes	\$55.10	\$25.32
133	10-Aug-13	2	4	\$29.65	Yes	\$55.10	\$25.45
134	10-Aug-13	2	5	\$29.27	Yes	\$55.10	\$25.83
135	10-Aug-13	2	6	\$28.80	Yes	\$55.10	\$26.30
136	10-Aug-13	2	7	\$28.99	Yes	\$55.10	\$26.11
137	10-Aug-13	2	8	\$28.07	Yes	\$55.10	\$27.03
138	10-Aug-13	2	9	\$28.72	Yes	\$55.10	\$26.38
139	10-Aug-13	2	10	\$28.76	Yes	\$55.10	\$26.34
140	10-Aug-13	2	11	\$28.91	Yes	\$55.10	\$26.19
141	10-Aug-13	2	12	\$28.47	Yes	\$55.10	\$26.63
142	10-Aug-13	3	1	\$29.49	Yes	\$55.10	\$25.61
143	10-Aug-13	3	2	\$29.55	Yes	\$55.10	\$25.55
144	10-Aug-13	3	3	\$29.66	Yes	\$55.10	\$25.44
145	10-Aug-13	3	4	\$29.65	Yes	\$55.10	\$25.45
146	10-Aug-13	3	5	\$29.57	Yes	\$55.10	\$25.53
147	10-Aug-13	3	6	\$29.54	Yes	\$55.10	\$25.56
148	10-Aug-13	3	7	\$29.59	Yes	\$55.10	\$25.51
149	10-Aug-13	3	8	\$29.56	Yes	\$55.10	\$25.54
150	10-Aug-13	3	9	\$29.34	Yes	\$55.10	\$25.76
151	10-Aug-13	3	10	\$29.04	Yes	\$55.10	\$26.06
152	10-Aug-13	3	11	\$29.04	Yes	\$55.10	\$26.06
153	10-Aug-13	3	12	\$28.85	Yes	\$55.10	\$26.25
154	10-Aug-13	4	1	\$29.03	Yes	\$55.10	\$26.07
155	10-Aug-13	4	2	\$29.03	Yes	\$55.10	\$26.07
156	10-Aug-13	4	3	\$29.24	Yes	\$55.10	\$25.86
157	10-Aug-13	4	4	\$28.84	Yes	\$55.10	\$26.26
158	10-Aug-13	4	5	\$28.84	Yes	\$55.10	\$26.26
159	10-Aug-13	4	6	\$28.84	Yes	\$55.10	\$26.26
160	10-Aug-13	4	7	\$29.01	Yes	\$55.10	\$26.09
161	10-Aug-13	4	8	\$29.01	Yes	\$55.10	\$26.09
162	10-Aug-13	4	9	\$27.07	Yes	\$55.10	\$28.03
163	10-Aug-13	4	10	\$26.86	Yes	\$55.10	\$28.24
164	10-Aug-13	4	11	\$27.08	Yes	\$55.10	\$28.02
165	10-Aug-13	4	12	\$27.08	Yes	\$55.10	\$28.02
166	10-Aug-13	5	1	\$21.43	Yes	\$55.10	\$33.67
167	10-Aug-13	5	2	\$19.76	Yes	\$55.10	\$35.34
168	10-Aug-13	5	3	\$10.57	Yes	\$55.10	\$44.53
169	10-Aug-13	5	4	(\$30.06)	Yes	\$55.10	\$85.16

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170	10-Aug-13	5	5	\$0.01	Yes	\$55.10	\$55.09
171	10-Aug-13	5	6	\$10.57	Yes	\$55.10	\$44.53
172	10-Aug-13	5	7	\$26.73	Yes	\$55.10	\$28.37
173	10-Aug-13	5	8	\$21.35	Yes	\$55.10	\$33.75
174	10-Aug-13	5	9	\$21.35	Yes	\$55.10	\$33.75
175	10-Aug-13	5	10	\$29.42	Yes	\$55.10	\$25.68
176	10-Aug-13	5	11	\$26.84	Yes	\$55.10	\$28.26
177	10-Aug-13	5	12	\$26.43	Yes	\$55.10	\$28.67
178	10-Aug-13	6	1	\$26.92	Yes	\$55.10	\$28.18
179	10-Aug-13	6	2	\$26.74	Yes	\$55.10	\$28.36
180	10-Aug-13	6	3	\$26.92	Yes	\$55.10	\$28.18
181	10-Aug-13	6	4	\$28.86	Yes	\$55.10	\$26.24
182	10-Aug-13	6	5	\$29.01	Yes	\$55.10	\$26.09
183	10-Aug-13	6	6	\$29.13	Yes	\$55.10	\$25.97
184	10-Aug-13	6	7	\$29.10	Yes	\$55.10	\$26.00
185	10-Aug-13	6	8	\$29.35	Yes	\$55.10	\$25.75
186	10-Aug-13	6	9	\$29.35	Yes	\$55.10	\$25.75
187	10-Aug-13	6	10	\$29.73	Yes	\$55.10	\$25.37
188	10-Aug-13	6	11	\$29.52	Yes	\$55.10	\$25.58
189	10-Aug-13	6	12	\$29.50	Yes	\$55.10	\$25.60
190	10-Aug-13	7	1	\$29.43	Yes	\$55.10	\$25.67
191	10-Aug-13	7	2	\$30.40	Yes	\$55.10	\$24.70
192	10-Aug-13	7	3	\$30.69	Yes	\$55.10	\$24.41
193	10-Aug-13	7	4	\$30.37	Yes	\$55.10	\$24.73
194	10-Aug-13	7	5	\$30.66	Yes	\$55.10	\$24.44
195	10-Aug-13	7	6	\$30.66	Yes	\$55.10	\$24.44
196	10-Aug-13	7	7	\$31.50	Yes	\$55.10	\$23.60
197	10-Aug-13	7	8	\$31.50	Yes	\$55.10	\$23.60
198	10-Aug-13	7	9	\$31.70	Yes	\$55.10	\$23.40
199	10-Aug-13	7	10	\$31.93	Yes	\$55.10	\$23.17
200	10-Aug-13	7	11	\$31.51	Yes	\$55.10	\$23.59
201	10-Aug-13	7	12	\$31.51	Yes	\$55.10	\$23.59
202	10-Aug-13	8	1	\$30.39	Yes	\$55.10	\$24.71
203	10-Aug-13	8	2	\$30.39	Yes	\$55.10	\$24.71
204	10-Aug-13	8	3	\$32.38	Yes	\$55.10	\$22.72
205	10-Aug-13	8	4	\$30.49	Yes	\$55.10	\$24.61
206	10-Aug-13	8	5	\$30.67	Yes	\$55.10	\$24.43
207	10-Aug-13	8	6	\$30.67	Yes	\$55.10	\$24.43
208	10-Aug-13	8	7	\$30.92	Yes	\$55.10	\$24.18
209	10-Aug-13	8	8	\$31.60	Yes	\$55.10	\$23.50
210	10-Aug-13	8	9	\$32.06	Yes	\$55.10	\$23.04
211	10-Aug-13	8	10	\$33.82	Yes	\$55.10	\$21.28
212	10-Aug-13	8	11	\$31.68	Yes	\$55.10	\$23.42

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213	10-Aug-13	8	12	\$30.79	Yes	\$55.10	\$24.31
214	10-Aug-13	9	1	\$30.04	Yes	\$55.10	\$25.06
215	10-Aug-13	9	2	\$29.75	Yes	\$55.10	\$25.35
216	10-Aug-13	9	3	\$28.86	Yes	\$55.10	\$26.24
217	10-Aug-13	9	4	\$29.42	Yes	\$55.10	\$25.68
218	10-Aug-13	9	5	\$29.03	Yes	\$55.10	\$26.07
219	10-Aug-13	9	6	\$29.03	Yes	\$55.10	\$26.07
220	10-Aug-13	9	7	\$28.17	Yes	\$55.10	\$26.93
221	10-Aug-13	9	8	\$28.99	Yes	\$55.10	\$26.11
222	10-Aug-13	9	9	\$29.65	Yes	\$55.10	\$25.45
223	10-Aug-13	9	10	\$30.40	Yes	\$55.10	\$24.70
224	10-Aug-13	9	11	\$30.22	Yes	\$55.10	\$24.88
225	10-Aug-13	9	12	\$30.40	Yes	\$55.10	\$24.70
226	10-Aug-13	10	1	\$26.22	Yes	\$55.10	\$28.88
227	10-Aug-13	10	2	\$26.44	Yes	\$55.10	\$28.66
228	10-Aug-13	10	3	\$26.02	Yes	\$55.10	\$29.08
229	10-Aug-13	10	4	\$27.20	Yes	\$55.10	\$27.90
230	10-Aug-13	10	5	\$28.61	Yes	\$55.10	\$26.49
231	10-Aug-13	10	6	\$28.31	Yes	\$55.10	\$26.79
232	10-Aug-13	10	7	\$29.07	Yes	\$55.10	\$26.03
233	10-Aug-13	10	8	\$28.90	Yes	\$55.10	\$26.20
234	10-Aug-13	10	9	\$29.07	Yes	\$55.10	\$26.03
235	10-Aug-13	10	10	\$29.76	Yes	\$55.10	\$25.34
236	10-Aug-13	10	11	\$29.11	Yes	\$55.10	\$25.99
237	10-Aug-13	10	12	\$30.48	Yes	\$55.10	\$24.62
238	10-Aug-13	11	1	\$27.48	Yes	\$55.10	\$27.62
239	10-Aug-13	11	2	\$28.40	Yes	\$55.10	\$26.70
240	10-Aug-13	11	3	\$28.29	Yes	\$55.10	\$26.81
241	10-Aug-13	11	4	\$28.23	Yes	\$55.10	\$26.87
242	10-Aug-13	11	5	\$28.99	Yes	\$55.10	\$26.11
243	10-Aug-13	11	6	\$29.76	Yes	\$55.10	\$25.34
244	10-Aug-13	11	7	\$29.77	Yes	\$55.10	\$25.33
245	10-Aug-13	11	8	\$28.96	Yes	\$55.10	\$26.14
246	10-Aug-13	11	9	\$30.26	Yes	\$55.10	\$24.84
247	10-Aug-13	11	10	\$30.27	Yes	\$55.10	\$24.83
248	10-Aug-13	11	11	\$30.27	Yes	\$55.10	\$24.83
249	10-Aug-13	11	12	\$30.61	Yes	\$55.10	\$24.49
250	10-Aug-13	12	1	\$28.74	Yes	\$55.10	\$26.36
251	10-Aug-13	12	2	\$28.74	Yes	\$55.10	\$26.36
252	10-Aug-13	12	3	\$28.59	Yes	\$55.10	\$26.51
253	10-Aug-13	12	4	\$26.03	Yes	\$55.10	\$29.07
254	10-Aug-13	12	5	\$28.35	Yes	\$55.10	\$26.75
255	10-Aug-13	12	6	\$28.43	Yes	\$55.10	\$26.67

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256	10-Aug-13	12	7	\$28.71	Yes	\$55.10	\$26.39
257	10-Aug-13	12	8	\$29.59	Yes	\$55.10	\$25.51
258	10-Aug-13	12	9	\$29.59	Yes	\$55.10	\$25.51
259	10-Aug-13	12	10	\$30.05	Yes	\$55.10	\$25.05
260	10-Aug-13	12	11	\$30.28	Yes	\$55.10	\$24.82
261	10-Aug-13	12	12	\$30.33	Yes	\$55.10	\$24.77
262	16-Aug-13	12	1	\$51.69	Yes	\$52.00	\$0.31
263	16-Aug-13	12	2	\$57.69	Yes	\$52.00	(\$5.69)
264	16-Aug-13	12	3	\$51.69	Yes	\$52.00	\$0.31
265	16-Aug-13	12	4	\$52.40	Yes	\$52.00	(\$0.40)
266	16-Aug-13	12	5	\$52.40	Yes	\$52.00	(\$0.40)
267	16-Aug-13	12	6	\$54.46	Yes	\$52.00	(\$2.46)
268	16-Aug-13	12	7	\$57.89	Yes	\$52.00	(\$5.89)
269	16-Aug-13	12	8	\$55.13	Yes	\$52.00	(\$3.13)
270	16-Aug-13	12	9	\$59.32	Yes	\$52.00	(\$7.32)
271	16-Aug-13	12	10	\$47.57	Yes	\$52.00	\$4.43
272	16-Aug-13	12	11	\$47.57	Yes	\$52.00	\$4.43
273	16-Aug-13	12	12	\$56.54	Yes	\$52.00	(\$4.54)
274	16-Aug-13	13	1	\$47.51	Yes	\$52.00	\$4.49
275	16-Aug-13	13	2	\$47.64	Yes	\$52.00	\$4.36
276	16-Aug-13	13	3	\$51.15	Yes	\$52.00	\$0.85
277	16-Aug-13	13	4	\$49.48	Yes	\$52.00	\$2.52
278	16-Aug-13	13	5	\$49.48	Yes	\$52.00	\$2.52
279	16-Aug-13	13	6	\$55.29	Yes	\$52.00	(\$3.29)
280	16-Aug-13	13	7	\$49.38	Yes	\$52.00	\$2.62
281	16-Aug-13	13	8	\$51.30	Yes	\$52.00	\$0.70
282	16-Aug-13	13	9	\$52.84	Yes	\$52.00	(\$0.84)
283	16-Aug-13	13	10	\$50.90	Yes	\$52.00	\$1.10
284	16-Aug-13	13	11	\$54.52	Yes	\$52.00	(\$2.52)
285	16-Aug-13	13	12	\$63.85	Yes	\$52.00	(\$11.85)
286	16-Aug-13	14	1	\$53.72	Yes	\$52.00	(\$1.72)
287	16-Aug-13	14	2	\$51.27	Yes	\$52.00	\$0.73
288	16-Aug-13	14	3	\$70.73	Yes	\$52.00	(\$18.73)
289	16-Aug-13	14	4	\$58.21	Yes	\$52.00	(\$6.21)
290	16-Aug-13	14	5	\$67.78	Yes	\$52.00	(\$15.78)
291	16-Aug-13	14	6	\$79.97	Yes	\$52.00	(\$27.97)
292	16-Aug-13	14	7	\$125.92	Yes	\$52.00	(\$73.92)
293	16-Aug-13	14	8	\$862.07	Yes	\$52.00	(\$810.07)
294	16-Aug-13	14	9	\$510.99	Yes	\$52.00	(\$458.99)
295	16-Aug-13	14	10	\$73.03	Yes	\$52.00	(\$21.03)
296	16-Aug-13	14	11	\$75.04	Yes	\$52.00	(\$23.04)
297	16-Aug-13	14	12	\$78.79	Yes	\$52.00	(\$26.79)
298	16-Aug-13	15	1	\$76.60	No	\$52.00	(\$24.60)

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299	16-Aug-13	15	2	\$78.72	No	\$52.00	(\$26.72)
300	16-Aug-13	15	3	\$79.50	No	\$52.00	(\$27.50)
301	16-Aug-13	15	4	\$80.21	No	\$52.00	(\$28.21)
302	16-Aug-13	15	5	\$92.50	No	\$52.00	(\$40.50)
303	16-Aug-13	15	6	\$860.91	No	\$52.00	(\$808.91)
304	16-Aug-13	15	7	\$859.68	No	\$52.00	(\$807.68)
305	16-Aug-13	15	8	\$859.68	No	\$52.00	(\$807.68)
306	16-Aug-13	15	9	\$106.08	No	\$52.00	(\$54.08)
307	16-Aug-13	15	10	\$79.48	No	\$52.00	(\$27.48)
308	16-Aug-13	15	11	\$78.73	No	\$52.00	(\$26.73)
309	16-Aug-13	15	12	\$76.42	No	\$52.00	(\$24.42)
310	16-Aug-13	18	1	\$58.24	Yes	\$52.00	(\$6.24)
311	16-Aug-13	18	2	\$50.10	Yes	\$52.00	\$1.90
312	16-Aug-13	18	3	\$49.33	Yes	\$52.00	\$2.67
313	16-Aug-13	18	4	\$48.63	Yes	\$52.00	\$3.37
314	16-Aug-13	18	5	\$48.63	Yes	\$52.00	\$3.37
315	16-Aug-13	18	6	\$48.63	Yes	\$52.00	\$3.37
316	16-Aug-13	18	7	\$49.43	Yes	\$52.00	\$2.57
317	16-Aug-13	18	8	\$50.76	Yes	\$52.00	\$1.24
318	16-Aug-13	18	9	\$50.96	Yes	\$52.00	\$1.04
319	16-Aug-13	18	10	\$48.53	Yes	\$52.00	\$3.47
320	16-Aug-13	18	11	\$47.73	Yes	\$52.00	\$4.27
321	16-Aug-13	18	12	\$47.93	Yes	\$52.00	\$4.07
322	19-Aug-13	10	1	\$42.95	Yes	\$55.10	\$12.15
323	19-Aug-13	10	2	\$66.35	Yes	\$55.10	(\$11.25)
324	19-Aug-13	10	3	\$49.72	Yes	\$55.10	\$5.38
325	19-Aug-13	10	4	\$46.18	Yes	\$55.10	\$8.92
326	19-Aug-13	10	5	\$44.43	Yes	\$55.10	\$10.67
327	19-Aug-13	10	6	\$39.16	Yes	\$55.10	\$15.94
328	19-Aug-13	10	7	\$34.49	Yes	\$55.10	\$20.61
329	19-Aug-13	10	8	\$31.44	Yes	\$55.10	\$23.66
330	19-Aug-13	10	9	\$36.86	Yes	\$55.10	\$18.24
331	19-Aug-13	10	10	\$32.67	Yes	\$55.10	\$22.43
332	19-Aug-13	10	11	\$33.26	Yes	\$55.10	\$21.84
333	19-Aug-13	10	12	\$34.69	Yes	\$55.10	\$20.41
334	19-Aug-13	11	1	\$35.70	Yes	\$55.10	\$19.40
335	19-Aug-13	11	2	\$36.78	Yes	\$55.10	\$18.32
336	19-Aug-13	11	3	\$39.09	Yes	\$55.10	\$16.01
337	19-Aug-13	11	4	\$39.06	Yes	\$55.10	\$16.04
338	19-Aug-13	11	5	\$39.11	Yes	\$55.10	\$15.99
339	19-Aug-13	11	6	\$39.11	Yes	\$55.10	\$15.99
340	19-Aug-13	11	7	\$39.26	Yes	\$55.10	\$15.84
341	19-Aug-13	11	8	\$45.22	Yes	\$55.10	\$9.88

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342	19-Aug-13	11	9	\$43.35	Yes	\$55.10	\$11.75
343	19-Aug-13	11	10	\$41.08	Yes	\$55.10	\$14.02
344	19-Aug-13	11	11	\$42.24	Yes	\$55.10	\$12.86
345	19-Aug-13	11	12	\$44.63	Yes	\$55.10	\$10.47
346	19-Aug-13	12	1	\$38.00	Yes	\$55.10	\$17.10
347	19-Aug-13	12	2	\$38.00	Yes	\$55.10	\$17.10
348	19-Aug-13	12	3	\$38.01	Yes	\$55.10	\$17.09
349	19-Aug-13	12	4	\$39.10	Yes	\$55.10	\$16.00
350	19-Aug-13	12	5	\$38.11	Yes	\$55.10	\$16.99
351	19-Aug-13	12	6	\$38.14	Yes	\$55.10	\$16.96
352	19-Aug-13	12	7	\$38.21	Yes	\$55.10	\$16.89
353	19-Aug-13	12	8	\$39.15	Yes	\$55.10	\$15.95
354	19-Aug-13	12	9	\$41.45	Yes	\$55.10	\$13.65
355	19-Aug-13	12	10	\$41.52	Yes	\$55.10	\$13.58
356	19-Aug-13	12	11	\$43.74	Yes	\$55.10	\$11.36
357	19-Aug-13	12	12	\$48.16	Yes	\$55.10	\$6.94
358	19-Aug-13	13	1	\$40.25	Yes	\$55.10	\$14.85
359	19-Aug-13	13	2	\$43.75	Yes	\$55.10	\$11.35
360	19-Aug-13	13	3	\$43.76	Yes	\$55.10	\$11.34
361	19-Aug-13	13	4	\$41.13	Yes	\$55.10	\$13.97
362	19-Aug-13	13	5	\$41.90	Yes	\$55.10	\$13.20
363	19-Aug-13	13	6	\$42.74	Yes	\$55.10	\$12.36
364	19-Aug-13	13	7	\$45.88	Yes	\$55.10	\$9.22
365	19-Aug-13	13	8	\$46.00	Yes	\$55.10	\$9.10
366	19-Aug-13	13	9	\$46.85	Yes	\$55.10	\$8.25
367	19-Aug-13	13	10	\$51.45	Yes	\$55.10	\$3.65
368	19-Aug-13	13	11	\$51.46	Yes	\$55.10	\$3.64
369	19-Aug-13	13	12	\$57.41	Yes	\$55.10	(\$2.31)
370	19-Aug-13	14	1	\$41.27	Yes	\$55.10	\$13.83
371	19-Aug-13	14	2	\$68.28	Yes	\$55.10	(\$13.18)
372	19-Aug-13	14	3	\$68.28	Yes	\$55.10	(\$13.18)
373	19-Aug-13	14	4	\$68.28	Yes	\$55.10	(\$13.18)
374	19-Aug-13	14	5	\$1,087.86	Yes	\$55.10	(\$1,032.76)
375	19-Aug-13	14	6	\$1,042.66	Yes	\$55.10	(\$987.56)
376	19-Aug-13	14	7	\$1,097.17	Yes	\$55.10	(\$1,042.07)
377	19-Aug-13	14	8	\$1,097.17	Yes	\$55.10	(\$1,042.07)
378	19-Aug-13	14	9	\$1,057.85	Yes	\$55.10	(\$1,002.75)
379	19-Aug-13	14	10	\$861.50	Yes	\$55.10	(\$806.40)
380	19-Aug-13	14	11	\$332.87	Yes	\$55.10	(\$277.77)
381	19-Aug-13	14	12	\$51.73	Yes	\$55.10	\$3.37
382	19-Aug-13	15	1	\$68.83	Yes	\$55.10	(\$13.73)
383	19-Aug-13	15	2	\$51.11	Yes	\$55.10	\$3.99
384	19-Aug-13	15	3	\$60.52	Yes	\$55.10	(\$5.42)

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385	19-Aug-13	15	4	\$46.40	Yes	\$55.10	\$8.70
386	19-Aug-13	15	5	\$47.91	Yes	\$55.10	\$7.19
387	19-Aug-13	15	6	\$48.09	Yes	\$55.10	\$7.01
388	19-Aug-13	15	7	\$44.99	Yes	\$55.10	\$10.11
389	19-Aug-13	15	8	\$44.99	Yes	\$55.10	\$10.11
390	19-Aug-13	15	9	\$45.69	Yes	\$55.10	\$9.41
391	19-Aug-13	15	10	\$58.36	Yes	\$55.10	(\$3.26)
392	19-Aug-13	15	11	\$63.66	Yes	\$55.10	(\$8.56)
393	19-Aug-13	15	12	\$61.69	Yes	\$55.10	(\$6.59)
394	19-Aug-13	16	1	\$66.80	Yes	\$55.10	(\$11.70)
395	19-Aug-13	16	2	\$77.53	Yes	\$55.10	(\$22.43)
396	19-Aug-13	16	3	\$77.53	Yes	\$55.10	(\$22.43)
397	19-Aug-13	16	4	\$188.10	Yes	\$55.10	(\$133.00)
398	19-Aug-13	16	5	\$195.88	Yes	\$55.10	(\$140.78)
399	19-Aug-13	16	6	\$884.51	Yes	\$55.10	(\$829.41)
400	19-Aug-13	16	7	\$999.90	Yes	\$55.10	(\$944.80)
401	19-Aug-13	16	8	\$999.90	Yes	\$55.10	(\$944.80)
402	19-Aug-13	16	9	\$898.21	Yes	\$55.10	(\$843.11)
403	19-Aug-13	16	10	\$65.52	Yes	\$55.10	(\$10.42)
404	19-Aug-13	16	11	\$77.58	Yes	\$55.10	(\$22.48)
405	19-Aug-13	16	12	\$86.70	Yes	\$55.10	(\$31.60)
406	19-Aug-13	17	1	\$55.18	Yes	\$55.10	(\$0.08)
407	19-Aug-13	17	2	\$51.82	Yes	\$55.10	\$3.28
408	19-Aug-13	17	3	\$45.04	Yes	\$55.10	\$10.06
409	19-Aug-13	17	4	\$44.75	Yes	\$55.10	\$10.35
410	19-Aug-13	17	5	\$45.12	Yes	\$55.10	\$9.98
411	19-Aug-13	17	6	\$45.41	Yes	\$55.10	\$9.69
412	19-Aug-13	17	7	\$52.64	Yes	\$55.10	\$2.46
413	19-Aug-13	17	8	\$55.27	Yes	\$55.10	(\$0.17)
414	19-Aug-13	17	9	\$61.97	Yes	\$55.10	(\$6.87)
415	19-Aug-13	17	10	\$90.99	Yes	\$55.10	(\$35.89)
416	19-Aug-13	17	11	\$67.62	Yes	\$55.10	(\$12.52)
417	19-Aug-13	17	12	\$59.38	Yes	\$55.10	(\$4.28)
418	19-Aug-13	18	1	\$49.53	Yes	\$55.10	\$5.57
419	19-Aug-13	18	2	\$50.59	Yes	\$55.10	\$4.51
420	19-Aug-13	18	3	\$48.10	Yes	\$55.10	\$7.00
421	19-Aug-13	18	4	\$45.83	Yes	\$55.10	\$9.27
422	19-Aug-13	18	5	\$67.60	Yes	\$55.10	(\$12.50)
423	19-Aug-13	18	6	\$61.91	Yes	\$55.10	(\$6.81)
424	19-Aug-13	18	7	\$61.91	Yes	\$55.10	(\$6.81)
425	19-Aug-13	18	8	\$172.98	Yes	\$55.10	(\$117.88)
426	19-Aug-13	18	9	\$129.39	Yes	\$55.10	(\$74.29)
427	19-Aug-13	18	10	\$114.54	Yes	\$55.10	(\$59.44)

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428	19-Aug-13	18	11	\$128.53	Yes	\$55.10	(\$73.43)
429	19-Aug-13	18	12	\$68.84	Yes	\$55.10	(\$13.74)
430	19-Aug-13	19	1	\$101.87	Yes	\$55.10	(\$46.77)
431	19-Aug-13	19	2	\$67.66	Yes	\$55.10	(\$12.56)
432	19-Aug-13	19	3	\$61.93	Yes	\$55.10	(\$6.83)
433	19-Aug-13	19	4	\$52.45	Yes	\$55.10	\$2.65
434	19-Aug-13	19	5	\$63.24	Yes	\$55.10	(\$8.14)
435	19-Aug-13	19	6	\$68.78	Yes	\$55.10	(\$13.68)
436	19-Aug-13	19	7	\$67.81	Yes	\$55.10	(\$12.71)
437	19-Aug-13	19	8	\$53.09	Yes	\$55.10	\$2.01
438	19-Aug-13	19	9	\$52.63	Yes	\$55.10	\$2.47
439	19-Aug-13	19	10	\$54.61	Yes	\$55.10	\$0.49
440	19-Aug-13	19	11	\$46.33	Yes	\$55.10	\$8.77
441	19-Aug-13	19	12	\$49.36	Yes	\$55.10	\$5.74
442	19-Aug-13	20	1	\$37.27	Yes	\$55.10	\$17.83
443	19-Aug-13	20	2	\$38.60	Yes	\$55.10	\$16.50
444	19-Aug-13	20	3	\$38.60	Yes	\$55.10	\$16.50
445	19-Aug-13	20	4	\$34.31	Yes	\$55.10	\$20.79
446	19-Aug-13	20	5	\$32.22	Yes	\$55.10	\$22.88
447	19-Aug-13	20	6	\$31.08	Yes	\$55.10	\$24.02
448	19-Aug-13	20	7	\$30.59	Yes	\$55.10	\$24.51
449	19-Aug-13	20	8	\$31.73	Yes	\$55.10	\$23.37
450	19-Aug-13	20	9	\$37.18	Yes	\$55.10	\$17.92
451	19-Aug-13	20	10	\$37.79	Yes	\$55.10	\$17.31
452	19-Aug-13	20	11	\$36.91	Yes	\$55.10	\$18.19
453	19-Aug-13	20	12	\$34.02	Yes	\$55.10	\$21.08
454	19-Aug-13	21	1	\$50.17	Yes	\$55.10	\$4.93
455	19-Aug-13	21	2	\$50.11	Yes	\$55.10	\$4.99
456	19-Aug-13	21	3	\$45.47	Yes	\$55.10	\$9.63
457	19-Aug-13	21	4	\$38.65	Yes	\$55.10	\$16.45
458	19-Aug-13	21	5	\$39.75	Yes	\$55.10	\$15.35
459	19-Aug-13	21	6	\$40.82	Yes	\$55.10	\$14.28
460	19-Aug-13	21	7	\$40.51	Yes	\$55.10	\$14.59
461	19-Aug-13	21	8	\$37.25	Yes	\$55.10	\$17.85
462	19-Aug-13	21	9	\$39.11	Yes	\$55.10	\$15.99
463	19-Aug-13	21	10	\$44.03	Yes	\$55.10	\$11.07
464	19-Aug-13	21	11	\$41.96	Yes	\$55.10	\$13.14
465	19-Aug-13	21	12	\$41.00	Yes	\$55.10	\$14.10
466	19-Aug-13	22	1	\$45.97	Yes	\$55.10	\$9.13
467	19-Aug-13	22	2	\$37.20	Yes	\$55.10	\$17.90
468	19-Aug-13	22	3	\$37.02	Yes	\$55.10	\$18.08
469	19-Aug-13	22	4	\$37.27	Yes	\$55.10	\$17.83
470	19-Aug-13	22	5	\$32.83	Yes	\$55.10	\$22.27

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471	19-Aug-13	22	6	\$34.90	Yes	\$55.10	\$20.20
472	19-Aug-13	22	7	\$36.27	Yes	\$55.10	\$18.83
473	19-Aug-13	22	8	\$35.35	Yes	\$55.10	\$19.75
474	19-Aug-13	22	9	\$35.66	Yes	\$55.10	\$19.44
475	19-Aug-13	22	10	\$36.22	Yes	\$55.10	\$18.88
476	19-Aug-13	22	11	\$36.22	Yes	\$55.10	\$18.88
477	19-Aug-13	22	12	\$36.20	Yes	\$55.10	\$18.90
478	19-Aug-13	23	1	\$37.23	Yes	\$55.10	\$17.87
479	19-Aug-13	23	2	\$37.16	Yes	\$55.10	\$17.94
480	19-Aug-13	23	3	\$36.74	Yes	\$55.10	\$18.36
481	19-Aug-13	23	4	\$33.41	Yes	\$55.10	\$21.69
482	19-Aug-13	23	5	\$36.25	Yes	\$55.10	\$18.85
483	19-Aug-13	23	6	\$37.46	Yes	\$55.10	\$17.64
484	19-Aug-13	23	7	\$37.98	Yes	\$55.10	\$17.12
485	19-Aug-13	23	8	\$37.61	Yes	\$55.10	\$17.49
486	19-Aug-13	23	9	\$34.53	Yes	\$55.10	\$20.57
487	19-Aug-13	23	10	\$32.44	Yes	\$55.10	\$22.66
488	19-Aug-13	23	11	\$32.78	Yes	\$55.10	\$22.32
489	19-Aug-13	23	12	\$30.79	Yes	\$55.10	\$24.31
490	19-Aug-13	24	1	\$44.98	Yes	\$55.10	\$10.12
491	19-Aug-13	24	2	\$44.98	Yes	\$55.10	\$10.12
492	19-Aug-13	24	3	\$51.71	Yes	\$55.10	\$3.39
493	19-Aug-13	24	4	\$44.28	Yes	\$55.10	\$10.82
494	19-Aug-13	24	5	\$50.55	Yes	\$55.10	\$4.55
495	19-Aug-13	24	6	\$47.33	Yes	\$55.10	\$7.77
496	19-Aug-13	24	7	\$42.76	Yes	\$55.10	\$12.34
497	19-Aug-13	24	8	\$42.76	Yes	\$55.10	\$12.34
498	19-Aug-13	24	9	\$37.85	Yes	\$55.10	\$17.25
499	19-Aug-13	24	10	\$40.58	Yes	\$55.10	\$14.52
500	19-Aug-13	24	11	\$35.19	Yes	\$55.10	\$19.91
501	19-Aug-13	24	12	\$34.08	Yes	\$55.10	\$21.02
502	31-Aug-13	1	1	\$37.66	Yes	\$55.10	\$17.44
503	31-Aug-13	1	2	\$40.54	Yes	\$55.10	\$14.56
504	31-Aug-13	1	3	\$50.71	Yes	\$55.10	\$4.39
505	31-Aug-13	1	4	\$44.89	Yes	\$55.10	\$10.21
506	31-Aug-13	1	5	\$44.26	Yes	\$55.10	\$10.84
507	31-Aug-13	1	6	\$43.86	Yes	\$55.10	\$11.24
508	31-Aug-13	1	7	\$44.05	Yes	\$55.10	\$11.05
509	31-Aug-13	1	8	\$45.59	Yes	\$55.10	\$9.51
510	31-Aug-13	1	9	\$46.97	Yes	\$55.10	\$8.13
511	31-Aug-13	1	10	\$46.06	Yes	\$55.10	\$9.04
512	31-Aug-13	1	11	\$43.92	Yes	\$55.10	\$11.18
513	31-Aug-13	1	12	\$37.82	Yes	\$55.10	\$17.28

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514	31-Aug-13	2	1	\$45.54	Yes	\$55.10	\$9.56
515	31-Aug-13	2	2	\$44.91	Yes	\$55.10	\$10.19
516	31-Aug-13	2	3	\$46.88	Yes	\$55.10	\$8.22
517	31-Aug-13	2	4	\$46.76	Yes	\$55.10	\$8.34
518	31-Aug-13	2	5	\$45.14	Yes	\$55.10	\$9.96
519	31-Aug-13	2	6	\$43.88	Yes	\$55.10	\$11.22
520	31-Aug-13	2	7	\$42.23	Yes	\$55.10	\$12.87
521	31-Aug-13	2	8	\$39.41	Yes	\$55.10	\$15.69
522	31-Aug-13	2	9	\$37.42	Yes	\$55.10	\$17.68
523	31-Aug-13	2	10	\$37.41	Yes	\$55.10	\$17.69
524	31-Aug-13	2	11	\$37.39	Yes	\$55.10	\$17.71
525	31-Aug-13	2	12	\$37.41	Yes	\$55.10	\$17.69
526	31-Aug-13	3	1	\$37.44	Yes	\$55.10	\$17.66
527	31-Aug-13	3	2	\$41.84	Yes	\$55.10	\$13.26
528	31-Aug-13	3	3	\$37.44	Yes	\$55.10	\$17.66
529	31-Aug-13	3	4	\$36.50	Yes	\$55.10	\$18.60
530	31-Aug-13	3	5	\$34.04	Yes	\$55.10	\$21.06
531	31-Aug-13	3	6	\$33.39	Yes	\$55.10	\$21.71
532	31-Aug-13	3	7	\$33.21	Yes	\$55.10	\$21.89
533	31-Aug-13	3	8	\$32.84	Yes	\$55.10	\$22.26
534	31-Aug-13	3	9	\$32.84	Yes	\$55.10	\$22.26
535	31-Aug-13	3	10	\$32.75	Yes	\$55.10	\$22.35
536	31-Aug-13	3	11	\$32.84	Yes	\$55.10	\$22.26
537	31-Aug-13	3	12	\$32.84	Yes	\$55.10	\$22.26
538	31-Aug-13	4	1	\$32.83	Yes	\$55.10	\$22.27
539	31-Aug-13	4	2	\$32.87	Yes	\$55.10	\$22.23
540	31-Aug-13	4	3	\$33.12	Yes	\$55.10	\$21.98
541	31-Aug-13	4	4	\$32.87	Yes	\$55.10	\$22.23
542	31-Aug-13	4	5	\$32.87	Yes	\$55.10	\$22.23
543	31-Aug-13	4	6	\$32.87	Yes	\$55.10	\$22.23
544	31-Aug-13	4	7	\$32.78	Yes	\$55.10	\$22.32
545	31-Aug-13	4	8	\$32.78	Yes	\$55.10	\$22.32
546	31-Aug-13	4	9	\$32.75	Yes	\$55.10	\$22.35
547	31-Aug-13	4	10	\$32.82	Yes	\$55.10	\$22.28
548	31-Aug-13	4	11	\$32.79	Yes	\$55.10	\$22.31
549	31-Aug-13	4	12	\$32.82	Yes	\$55.10	\$22.28
550	31-Aug-13	5	1	\$33.17	Yes	\$55.10	\$21.93
551	31-Aug-13	5	2	\$32.92	Yes	\$55.10	\$22.18
552	31-Aug-13	5	3	\$32.92	Yes	\$55.10	\$22.18
553	31-Aug-13	5	4	\$33.28	Yes	\$55.10	\$21.82
554	31-Aug-13	5	5	\$33.36	Yes	\$55.10	\$21.74
555	31-Aug-13	5	6	\$34.40	Yes	\$55.10	\$20.70
556	31-Aug-13	5	7	\$34.56	Yes	\$55.10	\$20.54

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557	31-Aug-13	5	8	\$34.56	Yes	\$55.10	\$20.54
558	31-Aug-13	5	9	\$34.56	Yes	\$55.10	\$20.54
559	31-Aug-13	5	10	\$34.41	Yes	\$55.10	\$20.69
560	31-Aug-13	5	11	\$33.81	Yes	\$55.10	\$21.29
561	31-Aug-13	5	12	\$33.32	Yes	\$55.10	\$21.78
562	31-Aug-13	6	1	\$32.94	Yes	\$55.10	\$22.16
563	31-Aug-13	6	2	\$32.74	Yes	\$55.10	\$22.36
564	31-Aug-13	6	3	\$32.74	Yes	\$55.10	\$22.36
565	31-Aug-13	6	4	\$31.22	Yes	\$55.10	\$23.88
566	31-Aug-13	6	5	\$31.02	Yes	\$55.10	\$24.08
567	31-Aug-13	6	6	\$31.02	Yes	\$55.10	\$24.08
568	31-Aug-13	6	7	\$31.22	Yes	\$55.10	\$23.88
569	31-Aug-13	6	8	\$31.71	Yes	\$55.10	\$23.39
570	31-Aug-13	6	9	\$31.84	Yes	\$55.10	\$23.26
571	31-Aug-13	6	10	\$31.95	Yes	\$55.10	\$23.15
572	31-Aug-13	6	11	\$31.95	Yes	\$55.10	\$23.15
573	31-Aug-13	6	12	\$31.25	Yes	\$55.10	\$23.85
574	31-Aug-13	7	1	\$30.22	Yes	\$55.10	\$24.88
575	31-Aug-13	7	2	\$31.20	Yes	\$55.10	\$23.90
576	31-Aug-13	7	3	\$27.15	Yes	\$55.10	\$27.95
577	31-Aug-13	7	4	\$31.12	Yes	\$55.10	\$23.98
578	31-Aug-13	7	5	\$32.53	Yes	\$55.10	\$22.57
579	31-Aug-13	7	6	\$32.72	Yes	\$55.10	\$22.38
580	31-Aug-13	7	7	\$28.30	Yes	\$55.10	\$26.80
581	31-Aug-13	7	8	\$30.11	Yes	\$55.10	\$24.99
582	31-Aug-13	7	9	\$30.13	Yes	\$55.10	\$24.97
583	31-Aug-13	7	10	\$30.20	Yes	\$55.10	\$24.90
584	31-Aug-13	7	11	\$32.75	Yes	\$55.10	\$22.35
585	31-Aug-13	7	12	\$32.76	Yes	\$55.10	\$22.34
586	31-Aug-13	8	1	\$32.76	Yes	\$55.10	\$22.34
587	31-Aug-13	8	2	\$32.77	Yes	\$55.10	\$22.33
588	31-Aug-13	8	3	\$32.77	Yes	\$55.10	\$22.33
589	31-Aug-13	8	4	\$33.93	Yes	\$55.10	\$21.17
590	31-Aug-13	8	5	\$33.77	Yes	\$55.10	\$21.33
591	31-Aug-13	8	6	\$34.15	Yes	\$55.10	\$20.95
592	31-Aug-13	8	7	\$34.01	Yes	\$55.10	\$21.09
593	31-Aug-13	8	8	\$32.93	Yes	\$55.10	\$22.17
594	31-Aug-13	8	9	\$33.02	Yes	\$55.10	\$22.08
595	31-Aug-13	8	10	\$33.87	Yes	\$55.10	\$21.23
596	31-Aug-13	8	11	\$33.87	Yes	\$55.10	\$21.23
597	31-Aug-13	8	12	\$33.12	Yes	\$55.10	\$21.98
598	31-Aug-13	9	1	\$32.96	Yes	\$55.10	\$22.14
599	31-Aug-13	9	2	\$32.96	Yes	\$55.10	\$22.14

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600	31-Aug-13	9	3	\$32.96	Yes	\$55.10	\$22.14
601	31-Aug-13	9	4	\$33.45	Yes	\$55.10	\$21.65
602	31-Aug-13	9	5	\$37.44	Yes	\$55.10	\$17.66
603	31-Aug-13	9	6	\$37.44	Yes	\$55.10	\$17.66
604	31-Aug-13	9	7	\$37.66	Yes	\$55.10	\$17.44
605	31-Aug-13	9	8	\$37.66	Yes	\$55.10	\$17.44
606	31-Aug-13	9	9	\$43.55	Yes	\$55.10	\$11.55
607	31-Aug-13	9	10	\$37.48	Yes	\$55.10	\$17.62
608	31-Aug-13	9	11	\$44.21	Yes	\$55.10	\$10.89
609	31-Aug-13	9	12	\$37.48	Yes	\$55.10	\$17.62
610	31-Aug-13	10	1	\$37.30	Yes	\$55.10	\$17.80
611	31-Aug-13	10	2	\$34.69	Yes	\$55.10	\$20.41
612	31-Aug-13	10	3	\$37.30	Yes	\$55.10	\$17.80
613	31-Aug-13	10	4	\$37.40	Yes	\$55.10	\$17.70
614	31-Aug-13	10	5	\$51.59	Yes	\$55.10	\$3.51
615	31-Aug-13	10	6	\$50.74	Yes	\$55.10	\$4.36
616	31-Aug-13	10	7	\$49.33	Yes	\$55.10	\$5.77
617	31-Aug-13	10	8	\$57.26	Yes	\$55.10	(\$2.16)
618	31-Aug-13	10	9	\$52.50	Yes	\$55.10	\$2.60
619	31-Aug-13	10	10	\$53.51	Yes	\$55.10	\$1.59
620	31-Aug-13	10	11	\$53.27	Yes	\$55.10	\$1.83
621	31-Aug-13	10	12	\$58.32	Yes	\$55.10	(\$3.22)
622	31-Aug-13	11	1	\$39.32	Yes	\$55.10	\$15.78
623	31-Aug-13	11	2	\$38.22	Yes	\$55.10	\$16.88
624	31-Aug-13	11	3	\$42.22	Yes	\$55.10	\$12.88
625	31-Aug-13	11	4	\$46.14	Yes	\$55.10	\$8.96
626	31-Aug-13	11	5	\$50.13	Yes	\$55.10	\$4.97
627	31-Aug-13	11	6	\$59.71	Yes	\$55.10	(\$4.61)
628	31-Aug-13	11	7	\$53.04	Yes	\$55.10	\$2.06
629	31-Aug-13	11	8	\$55.00	Yes	\$55.10	\$0.10
630	31-Aug-13	11	9	\$59.06	Yes	\$55.10	(\$3.96)
631	31-Aug-13	11	10	\$60.16	Yes	\$55.10	(\$5.06)
632	31-Aug-13	11	11	\$67.49	Yes	\$55.10	(\$12.39)
633	31-Aug-13	11	12	\$67.49	Yes	\$55.10	(\$12.39)
634	31-Aug-13	12	1	\$59.31	Yes	\$55.10	(\$4.21)
635	31-Aug-13	12	2	\$59.12	Yes	\$55.10	(\$4.02)
636	31-Aug-13	12	3	\$52.19	Yes	\$55.10	\$2.91
637	31-Aug-13	12	4	\$56.17	Yes	\$55.10	(\$1.07)
638	31-Aug-13	12	5	\$47.27	Yes	\$55.10	\$7.83
639	31-Aug-13	12	6	\$50.92	Yes	\$55.10	\$4.18
640	31-Aug-13	12	7	\$51.36	Yes	\$55.10	\$3.74
641	31-Aug-13	12	8	\$53.24	Yes	\$55.10	\$1.86
642	31-Aug-13	12	9	\$53.24	Yes	\$55.10	\$1.86

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643	31-Aug-13	12	10	\$59.59	Yes	\$55.10	(\$4.49)
644	31-Aug-13	12	11	\$59.66	Yes	\$55.10	(\$4.56)
645	31-Aug-13	12	12	\$61.50	Yes	\$55.10	(\$6.40)
646	31-Aug-13	13	1	\$44.96	Yes	\$55.10	\$10.14
647	31-Aug-13	13	2	\$44.96	Yes	\$55.10	\$10.14
648	31-Aug-13	13	3	\$47.17	Yes	\$55.10	\$7.93
649	31-Aug-13	13	4	\$50.31	Yes	\$55.10	\$4.79
650	31-Aug-13	13	5	\$56.01	Yes	\$55.10	(\$0.91)
651	31-Aug-13	13	6	\$56.01	Yes	\$55.10	(\$0.91)
652	31-Aug-13	13	7	\$52.01	Yes	\$55.10	\$3.09
653	31-Aug-13	13	8	\$56.06	Yes	\$55.10	(\$0.96)
654	31-Aug-13	13	9	\$57.08	Yes	\$55.10	(\$1.98)
655	31-Aug-13	13	10	\$55.26	Yes	\$55.10	(\$0.16)
656	31-Aug-13	13	11	\$48.50	Yes	\$55.10	\$6.60
657	31-Aug-13	13	12	\$52.48	Yes	\$55.10	\$2.62
658	31-Aug-13	14	1	\$44.95	Yes	\$55.10	\$10.15
659	31-Aug-13	14	2	\$38.99	Yes	\$55.10	\$16.11
660	31-Aug-13	14	3	\$39.39	Yes	\$55.10	\$15.71
661	31-Aug-13	14	4	\$40.60	Yes	\$55.10	\$14.50
662	31-Aug-13	14	5	\$41.97	Yes	\$55.10	\$13.13
663	31-Aug-13	14	6	\$42.32	Yes	\$55.10	\$12.78
664	31-Aug-13	14	7	\$40.50	Yes	\$55.10	\$14.60
665	31-Aug-13	14	8	\$44.78	Yes	\$55.10	\$10.32
666	31-Aug-13	14	9	\$45.92	Yes	\$55.10	\$9.18
667	31-Aug-13	14	10	\$45.21	Yes	\$55.10	\$9.89
668	31-Aug-13	14	11	\$45.21	Yes	\$55.10	\$9.89
669	31-Aug-13	14	12	\$45.21	Yes	\$55.10	\$9.89
670	31-Aug-13	15	1	\$40.65	Yes	\$55.10	\$14.45
671	31-Aug-13	15	2	\$41.10	Yes	\$55.10	\$14.00
672	31-Aug-13	15	3	\$43.36	Yes	\$55.10	\$11.74
673	31-Aug-13	15	4	\$45.21	Yes	\$55.10	\$9.89
674	31-Aug-13	15	5	\$45.21	Yes	\$55.10	\$9.89
675	31-Aug-13	15	6	\$45.47	Yes	\$55.10	\$9.63
676	31-Aug-13	15	7	\$45.27	Yes	\$55.10	\$9.83
677	31-Aug-13	15	8	\$47.50	Yes	\$55.10	\$7.60
678	31-Aug-13	15	9	\$47.50	Yes	\$55.10	\$7.60
679	31-Aug-13	15	10	\$47.53	Yes	\$55.10	\$7.57
680	31-Aug-13	15	11	\$47.53	Yes	\$55.10	\$7.57
681	31-Aug-13	15	12	\$43.92	Yes	\$55.10	\$11.18
682	31-Aug-13	16	1	\$46.56	Yes	\$55.10	\$8.54
683	31-Aug-13	16	2	\$44.05	Yes	\$55.10	\$11.05
684	31-Aug-13	16	3	\$45.33	Yes	\$55.10	\$9.77
685	31-Aug-13	16	4	\$47.57	Yes	\$55.10	\$7.53

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686	31-Aug-13	16	5	\$45.33	Yes	\$55.10	\$9.77
687	31-Aug-13	16	6	\$47.88	Yes	\$55.10	\$7.22
688	31-Aug-13	16	7	\$45.31	Yes	\$55.10	\$9.79
689	31-Aug-13	16	8	\$43.62	Yes	\$55.10	\$11.48
690	31-Aug-13	16	9	\$43.62	Yes	\$55.10	\$11.48
691	31-Aug-13	16	10	\$47.85	Yes	\$55.10	\$7.25
692	31-Aug-13	16	11	\$49.83	Yes	\$55.10	\$5.27
693	31-Aug-13	16	12	\$47.48	Yes	\$55.10	\$7.62
694	31-Aug-13	17	1	\$47.66	Yes	\$55.10	\$7.44
695	31-Aug-13	17	2	\$45.42	Yes	\$55.10	\$9.68
696	31-Aug-13	17	3	\$47.66	Yes	\$55.10	\$7.44
697	31-Aug-13	17	4	\$49.96	Yes	\$55.10	\$5.14
698	31-Aug-13	17	5	\$52.12	Yes	\$55.10	\$2.98
699	31-Aug-13	17	6	\$55.00	Yes	\$55.10	\$0.10
700	31-Aug-13	17	7	\$52.28	Yes	\$55.10	\$2.82
701	31-Aug-13	17	8	\$47.85	Yes	\$55.10	\$7.25
702	31-Aug-13	17	9	\$47.47	Yes	\$55.10	\$7.63
703	31-Aug-13	17	10	\$41.76	Yes	\$55.10	\$13.34
704	31-Aug-13	17	11	\$44.48	Yes	\$55.10	\$10.62
705	31-Aug-13	17	12	\$47.22	Yes	\$55.10	\$7.88
706	31-Aug-13	18	1	\$62.88	Yes	\$55.10	(\$7.78)
707	31-Aug-13	18	2	\$432.62	Yes	\$55.10	(\$377.52)
708	31-Aug-13	18	3	\$143.54	Yes	\$55.10	(\$88.44)
709	31-Aug-13	18	4	\$62.88	Yes	\$55.10	(\$7.78)
710	31-Aug-13	18	5	\$62.41	Yes	\$55.10	(\$7.31)
711	31-Aug-13	18	6	\$60.01	Yes	\$55.10	(\$4.91)
712	31-Aug-13	18	7	\$59.62	Yes	\$55.10	(\$4.52)
713	31-Aug-13	18	8	\$74.25	Yes	\$55.10	(\$19.15)
714	31-Aug-13	18	9	\$76.90	Yes	\$55.10	(\$21.80)
715	31-Aug-13	18	10	\$75.96	Yes	\$55.10	(\$20.86)
716	31-Aug-13	18	11	\$75.96	Yes	\$55.10	(\$20.86)
717	31-Aug-13	18	12	\$75.96	Yes	\$55.10	(\$20.86)
718	31-Aug-13	19	1	\$74.79	Yes	\$55.10	(\$19.69)
719	31-Aug-13	19	2	\$74.79	Yes	\$55.10	(\$19.69)
720	31-Aug-13	19	3	\$74.79	Yes	\$55.10	(\$19.69)
721	31-Aug-13	19	4	\$58.64	Yes	\$55.10	(\$3.54)
722	31-Aug-13	19	5	\$56.96	Yes	\$55.10	(\$1.86)
723	31-Aug-13	19	6	\$56.96	Yes	\$55.10	(\$1.86)
724	31-Aug-13	19	7	\$65.94	Yes	\$55.10	(\$10.84)
725	31-Aug-13	19	8	\$58.58	Yes	\$55.10	(\$3.48)
726	31-Aug-13	19	9	\$62.11	Yes	\$55.10	(\$7.01)
727	31-Aug-13	19	10	\$52.71	Yes	\$55.10	\$2.39
728	31-Aug-13	19	11	\$51.05	Yes	\$55.10	\$4.05

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729	31-Aug-13	19	12	\$48.33	Yes	\$55.10	\$6.77
730	31-Aug-13	20	1	\$55.37	Yes	\$55.10	(\$0.27)
731	31-Aug-13	20	2	\$53.27	Yes	\$55.10	\$1.83
732	31-Aug-13	20	3	\$54.48	Yes	\$55.10	\$0.62
733	31-Aug-13	20	4	\$56.75	Yes	\$55.10	(\$1.65)
734	31-Aug-13	20	5	\$53.51	Yes	\$55.10	\$1.59
735	31-Aug-13	20	6	\$56.75	Yes	\$55.10	(\$1.65)
736	31-Aug-13	20	7	\$53.15	Yes	\$55.10	\$1.95
737	31-Aug-13	20	8	\$47.22	Yes	\$55.10	\$7.88
738	31-Aug-13	20	9	\$49.64	Yes	\$55.10	\$5.46
739	31-Aug-13	20	10	\$53.10	Yes	\$55.10	\$2.00
740	31-Aug-13	20	11	\$59.22	Yes	\$55.10	(\$4.12)
741	31-Aug-13	20	12	\$50.01	Yes	\$55.10	\$5.09
742	31-Aug-13	21	1	\$55.58	Yes	\$55.10	(\$0.48)
743	31-Aug-13	21	2	\$60.40	Yes	\$55.10	(\$5.30)
744	31-Aug-13	21	3	\$76.68	Yes	\$55.10	(\$21.58)
745	31-Aug-13	21	4	\$76.75	Yes	\$55.10	(\$21.65)
746	31-Aug-13	21	5	\$76.75	Yes	\$55.10	(\$21.65)
747	31-Aug-13	21	6	\$76.75	Yes	\$55.10	(\$21.65)
748	31-Aug-13	21	7	\$56.62	Yes	\$55.10	(\$1.52)
749	31-Aug-13	21	8	\$50.93	Yes	\$55.10	\$4.17
750	31-Aug-13	21	9	\$53.07	Yes	\$55.10	\$2.03
751	31-Aug-13	21	10	\$54.00	Yes	\$55.10	\$1.10
752	31-Aug-13	21	11	\$54.36	Yes	\$55.10	\$0.74
753	31-Aug-13	21	12	\$48.13	Yes	\$55.10	\$6.97
754	31-Aug-13	22	1	\$60.03	Yes	\$55.10	(\$4.93)
755	31-Aug-13	22	2	\$67.53	Yes	\$55.10	(\$12.43)
756	31-Aug-13	22	3	\$117.69	Yes	\$55.10	(\$62.59)
757	31-Aug-13	22	4	\$99.47	Yes	\$55.10	(\$44.37)
758	31-Aug-13	22	5	\$61.11	Yes	\$55.10	(\$6.01)
759	31-Aug-13	22	6	\$60.01	Yes	\$55.10	(\$4.91)
760	31-Aug-13	22	7	\$46.67	Yes	\$55.10	\$8.43
761	31-Aug-13	22	8	\$51.42	Yes	\$55.10	\$3.68
762	31-Aug-13	22	9	\$47.67	Yes	\$55.10	\$7.43
763	31-Aug-13	22	10	\$52.23	Yes	\$55.10	\$2.87
764	31-Aug-13	22	11	\$47.51	Yes	\$55.10	\$7.59
765	31-Aug-13	22	12	\$41.80	Yes	\$55.10	\$13.30
766	31-Aug-13	23	1	\$49.85	Yes	\$55.10	\$5.25
767	31-Aug-13	23	2	\$56.67	Yes	\$55.10	(\$1.57)
768	31-Aug-13	23	3	\$53.90	Yes	\$55.10	\$1.20
769	31-Aug-13	23	4	\$52.81	Yes	\$55.10	\$2.29
770	31-Aug-13	23	5	\$49.74	Yes	\$55.10	\$5.36
771	31-Aug-13	23	6	\$48.04	Yes	\$55.10	\$7.06

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772	31-Aug-13	23	7	\$44.80	Yes	\$55.10	\$10.30
773	31-Aug-13	23	8	\$42.78	Yes	\$55.10	\$12.32
774	31-Aug-13	23	9	\$42.78	Yes	\$55.10	\$12.32
775	31-Aug-13	23	10	\$40.08	Yes	\$55.10	\$15.02
776	31-Aug-13	23	11	\$40.77	Yes	\$55.10	\$14.33
777	31-Aug-13	23	12	\$40.23	Yes	\$55.10	\$14.87
778	31-Aug-13	24	1	\$46.89	Yes	\$55.10	\$8.21
779	31-Aug-13	24	2	\$45.86	Yes	\$55.10	\$9.24
780	31-Aug-13	24	3	\$44.68	Yes	\$55.10	\$10.42
781	31-Aug-13	24	4	\$44.10	Yes	\$55.10	\$11.00
782	31-Aug-13	24	5	\$44.10	Yes	\$55.10	\$11.00
783	31-Aug-13	24	6	\$43.92	Yes	\$55.10	\$11.18
784	31-Aug-13	24	7	\$46.52	Yes	\$55.10	\$8.58
785	31-Aug-13	24	8	\$41.61	Yes	\$55.10	\$13.49
786	31-Aug-13	24	9	\$39.07	Yes	\$55.10	\$16.03
787	31-Aug-13	24	10	\$33.90	Yes	\$55.10	\$21.20
788	31-Aug-13	24	11	\$33.90	Yes	\$55.10	\$21.20
789	31-Aug-13	24	12	\$34.23	Yes	\$55.10	\$20.87

Appendix C: Exceptional Dispatch Bid Mitigation Analysis

In August 2013, the ISO applied the exceptional dispatch bid mitigation to the exceptional dispatches due to noncompetitive constraints. Table 10 shows the costs by instruction type in August. With exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches were \$19,846.74. Without the exceptional dispatch bid mitigation, the costs for these types of exceptional dispatches would be \$21,158.68. The cost saving from the exceptional dispatch bid mitigation was \$1,311.94.

Table 10: Bid Mitigation Analysis for August

Type	Number of Resources	Costs without Bid Mitigation	Costs with Bid Mitigation	Cost Saving
NONTMOD	9	\$18,090.64	\$17,873.95	\$216.69
TMODEL5	5	\$3,068.04	\$1,972.79	\$1,095.25
Total	14	\$21,158.68	\$19,846.74	\$1,311.94

CERTIFICATE OF SERVICE

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

Dated at Folsom, California this 27th day of November 2013.

Is/ Anna Pascuzzo

Anna Pascuzzo