



Exceptional Dispatch Report

Table 1: February 2020

TABLE OF CONTENTS

| | |
|--|----|
| Introduction | 3 |
| The Nature of Exceptional Dispatch..... | 3 |
| Appendix A: Explanation by Example | 13 |
| Example 1: Exceptional Dispatch Instructions Prior to DAM | 13 |
| Example 2: Incremental Exceptional Dispatch Instructions in RTM..... | 14 |
| Example 3: Decremental Exceptional Dispatch Instructions in RTM..... | 16 |

LIST OF TABLES AND FIGURES

| | |
|---|----|
| Table 1: Exceptional Dispatches in February 2020..... | 6 |
| Table 2: Instructions Prior to Day-Ahead Market | 13 |
| Table 3: FERC Summary of Instructions Prior to DAM | 14 |
| Table 4: Incremental Exceptional Dispatch Instructions in RTM | 14 |
| Table 5: FERC Summary of ED Instructions in RTM | 15 |
| Table 6: Decremental Exceptional Dispatch Instructions in RTM | 16 |
| Table 7: FERC Summary of Decremental ED Instructions in RTM..... | 16 |

Introduction

This report is filed pursuant to FERC's September 2, 2009, and May 4, 2010, orders in Docket No. ER08-1178. These orders require two monthly Exceptional Dispatch reports—one issued on the 15th of each month and one originally issued on the 30th of each month. Both Table 1 and Table 2 reports will be issued on the 15th of each month due to the availability of necessary data. This report provides data on the frequency and reasons for Exceptional Dispatches issued in February 2020.

The Nature of Exceptional Dispatch

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

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

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

The following reason for exceptional dispatch instructions in February 2020 was not related to generation or transmission operating procedures: Software Limitation, when an exceptional dispatch instruction was used to bridge schedules across days for resources with a minimum down time of 24 hours, as the CAISO software does not handle multi day commitment. For instance, a

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

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

resource has a day-ahead schedule from 0600 till 2300, and then is shut down in 2400. If this resource had a minimum down time of 24 hours and it is required the following day, then the CAISO issues an exceptional dispatch to commit this resource in 2400 so it can be dispatched economically in the following day. Software limitation reason was also used for exceptional dispatches to manually issue shut down instructions to a resource because of a temporary Automatic Dispatch System (“ADS”) failure, or similar issues. Interconnection Reliability Operating Limits (IROL) are system operating limits that are established to prevent instability, uncontrolled separation or cascading as described in operating procedure 3100. System Operating Limit (SOL) are the facility ratings, system voltage limits, transient stability limits, and voltage stability limits that are used in the operating horizon – any of which can be the most restrictive limit at any point in time, pre – or post – contingency. Control Point (CP) are imposed to protect the area transmission network against N – 1 contingencies. There were a few other reasons used to explain exceptional dispatch instructions in February 2020, which are self explanatory.

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

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

Table 1 indicates there were 177 exceptional dispatches in February 2020, as compared to 268 exceptional dispatches in January 2020. Exceptional dispatches issued for the following reasons accounted for approximately 77

³ The data in Table 1 is principally SLIC information supplemented with data from the Market Quality System (MQS). It is the most accurate currently available and it is worth noting that this data has been through the T+38B initial statement process wherein many unresolved issues are fixed. The CAISO believes that this data will correlate well with the settlements data that will be available when the CAISO files the Table 2 report for the reporting period.

percent of the total exceptional dispatches during the reporting period: planned transmission outages, reliability assessment, unit testing, and voltage support. Exceptional dispatches with the reason “Reliability Assessment” were due to Real Time Contingency Analysis, Voltage Stability Analysis, and operating procedure number 7110 (along with 7820). Reliability Assessment is the reason as explained in the operator procedure 2330C⁴ that encompasses Control Point (CP), Interconnection Reliability Operating Limit (IROL), System Operating Limit (SOL) and congestion related EDs. This reason is used to mitigate reliability issues identified through the real – time assessment tools such as Real Time Contingency Analysis (RTCA), Voltage Stability Analysis (VSA), Dynamic Stability Analysis (DSA) and/or Operating Procedure (OP) or offline study.

1) ⁴ The operator procedure 2330C - <http://www.caiso.com/Documents/2330C.pdf>

Table 1: Exceptional Dispatches in February 2020

**California Independent System Operator Corporation
Exceptional Dispatch Report
April 15, 2020**

Chart 1: Table of Exceptional Dispatches for Period 01/February/2020 - 29/February/2020

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|---------------------------------------|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|
| 1 | RT | Fast Start Unit Management | PGAE | Bay Area | 2/19/2020 | 0 | No | INC | 2 | 16:25 | 17:30 |
| 2 | RT | Fast Start Unit Management | SCE | Big Creek-Ventura | 2/20/2020 | 0 | No | INC | 1 | 4:00 | 5:00 |
| 3 | RT | Fast Start Unit Management | SCE | LA Basin | 2/20/2020 | 0 | No | INC | 1 | 4:00 | 5:00 |
| 4 | RT | Incomplete or Inaccurate Transmission | PGAE | Humboldt | 2/4/2020 | 15 - 45 | No | INC | 17 | 6:45 | 23:00 |
| 5 | RT | Incomplete or Inaccurate Transmission | PGAE | Humboldt | 2/8/2020 | 15 | No | INC | 4 | 18:35 | 22:00 |
| 6 | RT | Incomplete or Inaccurate Transmission | PGAE | Humboldt | 2/11/2020 | 14 - 28 | No | INC | 7 | 17:15 | 0:00 |
| 7 | RT | Incomplete or Inaccurate Transmission | PGAE | Sierra | 2/4/2020 | 20 | No | INC | 2 | 10:00 | 11:30 |
| 8 | RT | Incomplete or Inaccurate Transmission | SCE | LA Basin | 2/4/2020 | 0 | No | DEC | 2 | 11:50 | 12:55 |
| 9 | RT | Incomplete or Inaccurate Transmission | SCE | LA Basin | 2/4/2020 | 250 - 400 | No | INC | 4 | 12:00 | 15:45 |
| 10 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/4/2020 | 100 - 200 | No | DEC | 10 | 11:25 | 21:00 |
| 11 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/4/2020 | 100 - 200 | No | INC | 5 | 11:25 | 15:45 |
| 12 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/5/2020 | 35 - 200 | No | DEC | 13 | 8:00 | 21:00 |
| 13 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/5/2020 | 35 - 125 | No | INC | 24 | 0:00 | 0:00 |
| 14 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/6/2020 | 35 - 200 | No | DEC | 13 | 8:00 | 21:00 |
| 15 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/6/2020 | 35 - 100 | No | INC | 24 | 0:00 | 0:00 |
| 16 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/7/2020 | 35 - 200 | No | DEC | 14 | 7:00 | 21:00 |
| 17 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/7/2020 | 35 - 100 | No | INC | 20 | 0:00 | 20:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|---------------------------------------|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|
| 18 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/8/2020 | 100 - 200 | No | DEC | 13 | 8:00 | 21:00 |
| 19 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/8/2020 | 35 - 100 | No | INC | 24 | 0:00 | 0:00 |
| 20 | RT | Incomplete or Inaccurate Transmission | SCE | NA | 2/9/2020 | 200 | No | DEC | 4 | 17:00 | 21:00 |
| 21 | RT | Load Forecast Uncertainty | PGAE | Fresno | 2/2/2020 | 83 - 404 | No | INC | 3 | 20:15 | 23:00 |
| 22 | RT | Load Forecast Uncertainty | SDGE | San Diego-IV | 2/20/2020 | 50 | No | INC | 3 | 17:05 | 20:00 |
| 23 | RT | Market Disruption | PGAE | Fresno | 2/4/2020 | -315 | No | DEC | 2 | 8:55 | 10:00 |
| 24 | RT | Market Disruption | PGAE | Fresno | 2/4/2020 | -315 | No | INC | 1 | 10:00 | 11:00 |
| 25 | RT | Other Reliability Requirement | PGAE | Bay Area | 2/4/2020 | 288 | No | DEC | 1 | 8:50 | 9:30 |
| 26 | RT | Other Reliability Requirement | PGAE | Fresno | 2/3/2020 | 380 | No | INC | 1 | 6:50 | 7:00 |
| 27 | RT | Other Reliability Requirement | PGAE | NA | 2/4/2020 | 0 - 6 | No | DEC | 1 | 8:35 | 9:00 |
| 28 | RT | Other Reliability Requirement | SCE | Big Creek-Ventura | 2/3/2020 | 344 | No | INC | 1 | 7:05 | 7:15 |
| 29 | RT | Other Reliability Requirement | SCE | Big Creek-Ventura | 2/4/2020 | 50 | No | DEC | 2 | 8:35 | 10:00 |
| 30 | RT | Other Reliability Requirement | SCE | LA Basin | 2/4/2020 | 98 - 210 | No | DEC | 1 | 8:50 | 9:30 |
| 31 | RT | Other Reliability Requirement | SCE | LA Basin | 2/4/2020 | 98 | No | INC | 1 | 8:50 | 8:55 |
| 32 | RT | Other Reliability Requirement | SCE | LA Basin | 2/5/2020 | 350 - 450 | No | DEC | 8 | 10:10 | 18:00 |
| 33 | RT | Other Reliability Requirement | SDGE | San Diego-IV | 2/5/2020 | 50 - 300 | No | INC | 9 | 10:15 | 18:45 |
| 34 | RT | Planned Transmission outage | PGAE | Humboldt | 2/1/2020 | 16 | No | DEC | 8 | 0:00 | 8:00 |
| 35 | RT | Planned Transmission outage | PGAE | Humboldt | 2/1/2020 | 16 | No | INC | 8 | 0:00 | 8:00 |
| 36 | RT | Planned Transmission Outage | PGAE | Fresno | 2/14/2020 | 15 | No | INC | 9 | 8:00 | 16:15 |
| 37 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/12/2020 | 28 - 42 | No | INC | 16 | 8:25 | 0:00 |
| 38 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/13/2020 | 15 | No | DEC | 2 | 22:15 | 0:00 |
| 39 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/13/2020 | 15 - 42 | No | INC | 24 | 0:00 | 0:00 |
| 40 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/14/2020 | 15 | No | DEC | 3 | 0:00 | 2:45 |
| 41 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/14/2020 | 15 - 30 | No | INC | 12 | 0:00 | 11:30 |
| 42 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/16/2020 | 16 | No | INC | 7 | 17:25 | 0:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|-----------------------------|----------|------------------------|------------|----------|------------|---------|-------|------------|----------|
| 43 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/18/2020 | 15 - 30 | No | INC | 18 | 6:40 | 0:00 |
| 44 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/19/2020 | 15 | No | DEC | 3 | 5:30 | 7:40 |
| 45 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/19/2020 | 15 - 32 | No | INC | 23 | 0:00 | 23:00 |
| 46 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/20/2020 | 28 | No | INC | 14 | 6:30 | 20:00 |
| 47 | RT | Planned Transmission Outage | PGAE | Humboldt | 2/24/2020 | 14 - 32 | No | INC | 17 | 7:00 | 0:00 |
| 48 | RT | Planned Transmission Outage | PGAE | Sierra | 2/18/2020 | 12 - 42 | No | INC | 16 | 6:00 | 22:00 |
| 49 | RT | Planned Transmission Outage | PGAE | Sierra | 2/19/2020 | 5 - 42 | No | INC | 17 | 6:00 | 23:00 |
| 50 | RT | Planned Transmission Outage | PGAE | Sierra | 2/21/2020 | 42 | No | INC | 5 | 6:00 | 11:00 |
| 51 | RT | Planned Transmission Outage | SCE | LA Basin | 2/1/2020 | 20 - 190 | No | INC | 16 | 8:00 | 0:00 |
| 52 | RT | Planned Transmission Outage | SCE | LA Basin | 2/2/2020 | 98 | No | INC | 13 | 7:00 | 20:00 |
| 53 | RT | Planned Transmission Outage | SCE | LA Basin | 2/3/2020 | 10 - 98 | No | INC | 18 | 6:00 | 0:00 |
| 54 | RT | Planned Transmission Outage | SCE | LA Basin | 2/6/2020 | 169 | No | DEC | 1 | 21:00 | 21:45 |
| 55 | RT | Planned Transmission Outage | SCE | LA Basin | 2/6/2020 | 0 | No | INC | 2 | 21:00 | 22:45 |
| 56 | RT | Planned Transmission Outage | SCE | LA Basin | 2/7/2020 | 160 | No | DEC | 18 | 6:30 | 0:00 |
| 57 | RT | Planned Transmission Outage | SCE | LA Basin | 2/7/2020 | 160 | No | INC | 9 | 8:00 | 17:00 |
| 58 | RT | Planned Transmission Outage | SCE | LA Basin | 2/8/2020 | 160 | No | DEC | 8 | 0:00 | 8:00 |
| 59 | RT | Planned Transmission Outage | SCE | LA Basin | 2/8/2020 | 98 - 160 | No | INC | 14 | 7:00 | 21:00 |
| 60 | RT | Planned Transmission Outage | SCE | LA Basin | 2/9/2020 | 98 | No | INC | 14 | 7:00 | 21:00 |
| 61 | RT | Planned Transmission Outage | SCE | LA Basin | 2/10/2020 | 98 | No | INC | 14 | 7:00 | 21:00 |
| 62 | RT | Planned Transmission Outage | SCE | LA Basin | 2/12/2020 | 255 | No | INC | 1 | 13:30 | 14:00 |
| 63 | RT | Planned Transmission Outage | SCE | LA Basin | 2/14/2020 | 98 - 351 | No | INC | 14 | 10:45 | 0:00 |
| 64 | RT | Planned Transmission Outage | SCE | LA Basin | 2/15/2020 | 98 | No | INC | 24 | 0:00 | 0:00 |
| 65 | RT | Planned Transmission Outage | SCE | LA Basin | 2/16/2020 | 98 | No | INC | 24 | 0:00 | 0:00 |
| 66 | RT | Planned Transmission Outage | SCE | LA Basin | 2/26/2020 | 0 - 147 | No | INC | 4 | 18:30 | 22:00 |
| 67 | RT | Planned Transmission Outage | SCE | NA | 2/7/2020 | 35 - 100 | No | INC | 4 | 20:00 | 0:00 |
| 68 | RT | Planned Transmission Outage | SCE | NA | 2/8/2020 | 35 | No | DEC | 2 | 7:00 | 9:00 |
| 69 | RT | Planned Transmission Outage | SCE | NA | 2/8/2020 | 35 - 100 | No | INC | 24 | 0:00 | 0:00 |
| 70 | RT | Planned Transmission Outage | SCE | NA | 2/9/2020 | 35 - 100 | No | DEC | 8 | 8:00 | 16:00 |
| 71 | RT | Planned Transmission Outage | SCE | NA | 2/9/2020 | 35 - 100 | No | INC | 24 | 0:00 | 0:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|-----------------------------|----------|------------------------|------------|----------|------------|---------|-------|------------|----------|
| 72 | RT | Planned Transmission Outage | SCE | NA | 2/10/2020 | 35 - 200 | No | DEC | 12 | 9:00 | 21:00 |
| 73 | RT | Planned Transmission Outage | SCE | NA | 2/10/2020 | 35 - 100 | No | INC | 24 | 0:00 | 0:00 |
| 74 | RT | Planned Transmission Outage | SCE | NA | 2/11/2020 | 35 - 200 | No | DEC | 16 | 8:00 | 0:00 |
| 75 | RT | Planned Transmission Outage | SCE | NA | 2/11/2020 | 35 - 100 | No | INC | 24 | 0:00 | 0:00 |
| 76 | RT | Planned Transmission Outage | SCE | NA | 2/12/2020 | 35 - 200 | No | DEC | 17 | 7:00 | 0:00 |
| 77 | RT | Planned Transmission Outage | SCE | NA | 2/12/2020 | 35 - 100 | No | INC | 24 | 0:00 | 0:00 |
| 78 | RT | Planned Transmission Outage | SCE | NA | 2/13/2020 | 35 - 200 | No | DEC | 17 | 7:00 | 0:00 |
| 79 | RT | Planned Transmission Outage | SCE | NA | 2/13/2020 | 35 - 100 | No | INC | 24 | 0:00 | 0:00 |
| 80 | RT | Planned Transmission Outage | SCE | NA | 2/14/2020 | 35 - 100 | No | DEC | 10 | 7:00 | 17:00 |
| 81 | RT | Planned Transmission Outage | SCE | NA | 2/14/2020 | 35 - 100 | No | INC | 24 | 0:00 | 0:00 |
| 82 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 2/6/2020 | 40 | No | INC | 3 | 17:10 | 20:00 |
| 83 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 2/7/2020 | 40 | No | INC | 15 | 7:45 | 22:00 |
| 84 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 2/9/2020 | 40 | No | INC | 3 | 19:00 | 21:15 |
| 85 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 2/10/2020 | 40 | No | INC | 5 | 19:00 | 0:00 |
| 86 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 2/11/2020 | 40 | No | INC | 16 | 8:00 | 0:00 |
| 87 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 2/12/2020 | 40 | No | INC | 15 | 8:00 | 23:00 |
| 88 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 2/16/2020 | 50 | No | INC | 1 | 22:05 | 23:00 |
| 89 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 2/25/2020 | 46 | No | DEC | 1 | 4:00 | 4:45 |
| 90 | RT | Planned Transmission Outage | SDGE | San Diego-IV | 2/25/2020 | 46 - 51 | No | INC | 5 | 0:05 | 4:45 |
| 91 | RT | Reliability Assessment | PGAE | Fresno | 2/24/2020 | -316 | No | DEC | 2 | 3:10 | 5:00 |
| 92 | RT | Reliability Assessment | PGAE | Humboldt | 2/2/2020 | 15 | No | INC | 3 | 17:00 | 20:00 |
| 93 | RT | Reliability Assessment | PGAE | Humboldt | 2/3/2020 | 30 - 42 | No | INC | 16 | 7:00 | 23:00 |
| 94 | RT | Reliability Assessment | PGAE | Humboldt | 2/4/2020 | 15 | No | INC | 2 | 6:20 | 7:50 |
| 95 | RT | Reliability Assessment | PGAE | Humboldt | 2/5/2020 | 32 - 48 | No | INC | 17 | 7:05 | 0:00 |
| 96 | RT | Reliability Assessment | PGAE | Humboldt | 2/6/2020 | 15 | No | INC | 6 | 6:25 | 12:00 |
| 97 | RT | Reliability Assessment | PGAE | Humboldt | 2/9/2020 | 32 | No | INC | 6 | 18:05 | 0:00 |
| 98 | RT | Reliability Assessment | PGAE | Humboldt | 2/10/2020 | 16 | No | DEC | 6 | 0:00 | 5:50 |
| 99 | RT | Reliability Assessment | PGAE | Humboldt | 2/10/2020 | 16 - 32 | No | INC | 19 | 5:50 | 0:00 |
| 100 | RT | Reliability Assessment | PGAE | Humboldt | 2/11/2020 | 14 - 42 | No | INC | 24 | 0:00 | 0:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|------------------------|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|
| 101 | RT | Reliability Assessment | PGAE | Humboldt | 2/12/2020 | 14 - 28 | No | INC | 10 | 0:00 | 10:00 |
| 102 | RT | Reliability Assessment | PGAE | Humboldt | 2/15/2020 | 32 | No | INC | 6 | 17:00 | 23:00 |
| 103 | RT | Reliability Assessment | PGAE | Humboldt | 2/17/2020 | 14 | No | INC | 17 | 6:50 | 23:00 |
| 104 | RT | Reliability Assessment | PGAE | Humboldt | 2/22/2020 | 15 | No | INC | 5 | 18:40 | 23:00 |
| 105 | RT | Reliability Assessment | PGAE | Humboldt | 2/23/2020 | 15 | No | INC | 5 | 18:40 | 23:00 |
| 106 | RT | Reliability Assessment | PGAE | Humboldt | 2/24/2020 | 14 | No | INC | 1 | 6:40 | 7:35 |
| 107 | RT | Reliability Assessment | PGAE | Humboldt | 2/25/2020 | 15 - 32 | No | INC | 18 | 5:30 | 23:15 |
| 108 | RT | Reliability Assessment | PGAE | Humboldt | 2/26/2020 | 14 | No | DEC | 5 | 7:15 | 11:30 |
| 109 | RT | Reliability Assessment | PGAE | Humboldt | 2/26/2020 | 15 - 28 | No | INC | 18 | 6:00 | 0:00 |
| 110 | RT | Reliability Assessment | PGAE | Humboldt | 2/27/2020 | 14 - 30 | No | INC | 23 | 0:00 | 23:00 |
| 111 | RT | Reliability Assessment | PGAE | Humboldt | 2/28/2020 | 15 - 30 | No | INC | 18 | 6:00 | 23:45 |
| 112 | RT | Reliability Assessment | PGAE | Humboldt | 2/29/2020 | 14 - 15 | No | DEC | 23 | 1:00 | 0:00 |
| 113 | RT | Reliability Assessment | PGAE | Humboldt | 2/29/2020 | 14 - 32 | No | INC | 14 | 8:45 | 22:45 |
| 114 | RT | Reliability Assessment | PGAE | Sierra | 2/18/2020 | 10 - 35 | No | INC | 7 | 9:50 | 16:00 |
| 115 | RT | Reliability Assessment | SCE | LA Basin | 2/3/2020 | 250 - 255 | No | INC | 6 | 11:25 | 16:30 |
| 116 | RT | Reliability Assessment | SCE | LA Basin | 2/5/2020 | 550 | No | DEC | 4 | 6:55 | 10:30 |
| 117 | RT | Reliability Assessment | SCE | LA Basin | 2/5/2020 | 550 | No | INC | 1 | 8:00 | 9:00 |
| 118 | RT | Reliability Assessment | SCE | NA | 2/5/2020 | 65 | No | DEC | 5 | 10:00 | 15:00 |
| 119 | RT | Reliability Assessment | SCE | NA | 2/5/2020 | 65 | No | INC | 8 | 9:10 | 17:00 |
| 120 | RT | Reliability Assessment | SCE | NA | 2/14/2020 | 55 | No | DEC | 4 | 11:40 | 15:00 |
| 121 | RT | Reliability Assessment | SCE | NA | 2/14/2020 | 55 | No | INC | 3 | 15:00 | 18:00 |
| 122 | RT | Reliability Assessment | SCE | NA | 2/15/2020 | 60 | No | DEC | 6 | 9:05 | 15:00 |
| 123 | RT | Reliability Assessment | SCE | NA | 2/15/2020 | 60 | No | INC | 2 | 15:00 | 17:00 |
| 124 | RT | Reliability Assessment | SCE | NA | 2/16/2020 | 60 | No | DEC | 6 | 9:00 | 15:00 |
| 125 | RT | Reliability Assessment | SCE | NA | 2/16/2020 | 60 | No | INC | 8 | 8:35 | 16:30 |
| 126 | RT | Reliability Assessment | SCE | NA | 2/17/2020 | 60 | No | DEC | 6 | 9:15 | 15:00 |
| 127 | RT | Reliability Assessment | SCE | NA | 2/17/2020 | 60 | No | INC | 1 | 15:00 | 16:00 |
| 128 | RT | Reliability Assessment | SCE | NA | 2/28/2020 | 40 | No | DEC | 5 | 10:40 | 15:00 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|------------------------|----------|------------------------|------------|---------|------------|---------|-------|------------|----------|
| 129 | RT | Reliability Assessment | SCE | NA | 2/28/2020 | 40 | No | INC | 3 | 15:00 | 18:00 |
| 130 | RT | Reliability Assessment | SCE | NA | 2/29/2020 | 60 | No | DEC | 5 | 10:00 | 15:00 |
| 131 | RT | Reliability Assessment | SCE | NA | 2/29/2020 | 60 | No | INC | 9 | 8:30 | 17:00 |
| 132 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/3/2020 | 40 | No | INC | 4 | 7:55 | 11:15 |
| 133 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/5/2020 | 40 | No | DEC | 1 | 6:20 | 7:00 |
| 134 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/5/2020 | 40 | No | INC | 16 | 7:00 | 23:00 |
| 135 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/14/2020 | 40 | No | INC | 1 | 17:15 | 17:30 |
| 136 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/18/2020 | 40 | No | DEC | 2 | 17:05 | 19:00 |
| 137 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/18/2020 | 40 | No | INC | 3 | 19:00 | 22:00 |
| 138 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/19/2020 | 24 | No | INC | 4 | 16:15 | 20:00 |
| 139 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/21/2020 | 24 | No | INC | 6 | 11:15 | 17:00 |
| 140 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/27/2020 | 24 | No | INC | 4 | 14:40 | 18:00 |
| 141 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/28/2020 | 24 | No | DEC | 7 | 13:55 | 20:00 |
| 142 | RT | Reliability Assessment | SDGE | San Diego-IV | 2/28/2020 | 40 | No | INC | 14 | 9:40 | 23:00 |
| 143 | RT | Reliability Assessment | VEA | NA | 2/14/2020 | 8 | No | DEC | 1 | 11:45 | 12:15 |
| 144 | RT | Software Limitation | PGAE | Fresno | 2/20/2020 | 83 | No | INC | 1 | 6:00 | 7:00 |
| 145 | RT | Software Limitation | SCE | Big Creek-Ventura | 2/18/2020 | 15 | No | DEC | 3 | 18:00 | 21:00 |
| 146 | RT | Software Limitation | SCE | Big Creek-Ventura | 2/18/2020 | 15 | No | INC | 1 | 21:00 | 21:45 |
| 147 | RT | Software Limitation | SCE | LA Basin | 2/17/2020 | 0 | No | INC | 1 | 6:55 | 7:55 |
| 148 | RT | Software Limitation | SCE | LA Basin | 2/27/2020 | 0 | No | INC | 4 | 20:40 | 0:00 |
| 149 | RT | Software Limitation | SCE | LA Basin | 2/28/2020 | 0 | No | INC | 1 | 0:00 | 0:40 |
| 150 | RT | Software Limitation | SCE | NA | 2/13/2020 | 0 | No | INC | 8 | 8:00 | 16:00 |
| 151 | RT | Unit Testing | Intertie | NA | 2/21/2020 | 10 - 50 | No | INC | 2 | 9:00 | 11:00 |
| 152 | RT | Unit Testing | PGAE | Bay Area | 2/5/2020 | 50 | No | INC | 12 | 7:10 | 19:00 |
| 153 | RT | Unit Testing | PGAE | Bay Area | 2/6/2020 | 25 | No | INC | 7 | 8:40 | 15:00 |
| 154 | RT | Unit Testing | PGAE | Bay Area | 2/10/2020 | 25 | No | INC | 7 | 7:20 | 13:30 |
| 155 | RT | Unit Testing | PGAE | Bay Area | 2/11/2020 | 0 - 45 | No | INC | 13 | 7:00 | 19:40 |

| Number | Market Type | Reason | Location | Local Reliability Area | Trade Date | MW | Commitment | INC_DEC | Hours | Begin Time | End Time |
|--------|-------------|-----------------|----------|------------------------|------------|-----------|------------|---------|-------|------------|----------|
| 156 | RT | Unit Testing | PGAE | Bay Area | 2/12/2020 | 0 - 45 | No | INC | 15 | 7:20 | 21:30 |
| 157 | RT | Unit Testing | PGAE | Bay Area | 2/13/2020 | 25 - 45 | No | INC | 7 | 7:15 | 13:30 |
| 158 | RT | Unit Testing | PGAE | Bay Area | 2/19/2020 | 195 | No | INC | 4 | 12:00 | 16:00 |
| 159 | RT | Unit Testing | PGAE | Bay Area | 2/25/2020 | 500 | No | DEC | 2 | 6:00 | 8:00 |
| 160 | RT | Unit Testing | PGAE | Sierra | 2/15/2020 | 3 | No | INC | 1 | 2:05 | 2:50 |
| 161 | RT | Unit Testing | PGAE | NA | 2/26/2020 | 100 | No | INC | 8 | 8:00 | 15:30 |
| 162 | RT | Unit Testing | SCE | Big Creek-Ventura | 2/1/2020 | 80 | No | INC | 12 | 11:45 | 23:00 |
| 163 | RT | Unit Testing | SCE | Big Creek-Ventura | 2/25/2020 | 78 | No | DEC | 13 | 10:15 | 22:30 |
| 164 | RT | Unit Testing | SCE | LA Basin | 2/6/2020 | 240 | No | DEC | 5 | 16:30 | 21:00 |
| 165 | RT | Unit Testing | SCE | LA Basin | 2/6/2020 | 147 | No | INC | 6 | 15:00 | 21:00 |
| 166 | RT | Unit Testing | SCE | NA | 2/18/2020 | 125 - 210 | No | INC | 9 | 13:45 | 22:00 |
| 167 | RT | Voltage Support | PGAE | Fresno | 2/1/2020 | -315 | No | DEC | 8 | 1:40 | 9:00 |
| 168 | RT | Voltage Support | PGAE | Fresno | 2/2/2020 | -315 - 83 | No | DEC | 23 | 1:15 | 0:00 |
| 169 | RT | Voltage Support | PGAE | Fresno | 2/2/2020 | 83 | No | INC | 1 | 16:30 | 17:00 |
| 170 | RT | Voltage Support | PGAE | Fresno | 2/3/2020 | -315 | No | DEC | 6 | 0:00 | 5:30 |
| 171 | RT | Voltage Support | PGAE | Fresno | 2/11/2020 | -318 | No | DEC | 2 | 4:05 | 5:30 |
| 172 | RT | Voltage Support | PGAE | Fresno | 2/19/2020 | -317 | No | DEC | 4 | 1:30 | 5:30 |
| 173 | RT | Voltage Support | PGAE | Sierra | 2/15/2020 | 1 - 20 | No | INC | 8 | 12:15 | 20:00 |
| 174 | RT | Voltage Support | PGAE | Sierra | 2/17/2020 | 42 | No | INC | 16 | 6:00 | 22:00 |
| 175 | RT | Voltage Support | PGAE | Sierra | 2/27/2020 | 20 | No | INC | 7 | 10:35 | 17:30 |
| 176 | RT | Voltage Support | PGAE | Sierra | 2/28/2020 | 20 | Yes | INC | 6 | 11:20 | 17:00 |
| 177 | RT | Voltage Support | PGAE | Sierra | 2/29/2020 | 20 | Yes | INC | 5 | 1:00 | 6:00 |

Appendix A: Explanation by Example

All examples listed below are based on fictitious data.

Example 1: Exceptional Dispatch Instructions Prior to DAM

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

Table 2: Instructions Prior to Day-Ahead Market

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

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

Table 3: FERC Summary of Instructions Prior to DAM

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

Example 2: Incremental Exceptional Dispatch Instructions in RTM

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

Table 4: Incremental Exceptional Dispatch Instructions in RTM

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

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

Table 5: FERC Summary of ED Instructions in RTM

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

Example 3: Decremental Exceptional Dispatch Instructions in RTM

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

Table 6: Decremental Exceptional Dispatch Instructions in RTM

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

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

Table 7: FERC Summary of Decremental ED Instructions in RTM

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