

July 16, 2019

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

**Re: California Independent System Operator Corporation
Docket Nos. ER08-1178-000 and EL08-88-000**

**Exceptional Dispatch Informational Report Covering
March 1 through June 30, 2019**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) submits the attached informational report to include Exceptional Dispatch data from the period from March 1, 2019 through June 30, 2019. The informational report also provides the status of the CAISO's development of operational and product enhancements that would reduce reliance on Exceptional Dispatch.

In its September 2009 Order, the Commission directed the CAISO to file reports every 120 days that describe the status of the CAISO's efforts to reduce the frequency of Exceptional Dispatch and the status of the CAISO's development of operational and product enhancements that would reduce reliance on Exceptional Dispatch.¹ The 120-day informational report is in addition to the two monthly Exceptional Dispatch reports (Chart 1 and Chart 2 data) the CAISO files in the above-referenced dockets.²

¹ *Cal. Indep. Sys. Operator Corp.*, 128 FERC ¶ 61,218, at PP 50-51 (September 2009 Order). The Commission explained that it “does not intend to notice these future status reports or to issue orders on these in the future, as these reports are for informational purposes only.” *Id.* at P 51 n.66.

² *Id.*, and *Cal. Indep. Sys. Operator Corp.*, 131 FERC ¶ 61,100 (2010).

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Please contact the undersigned with any questions regarding this filing.

Respectfully submitted,

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California ISO

**120-day
Exceptional Dispatch Report**

**Prepared by
California Independent System Operator**

July 16, 2019

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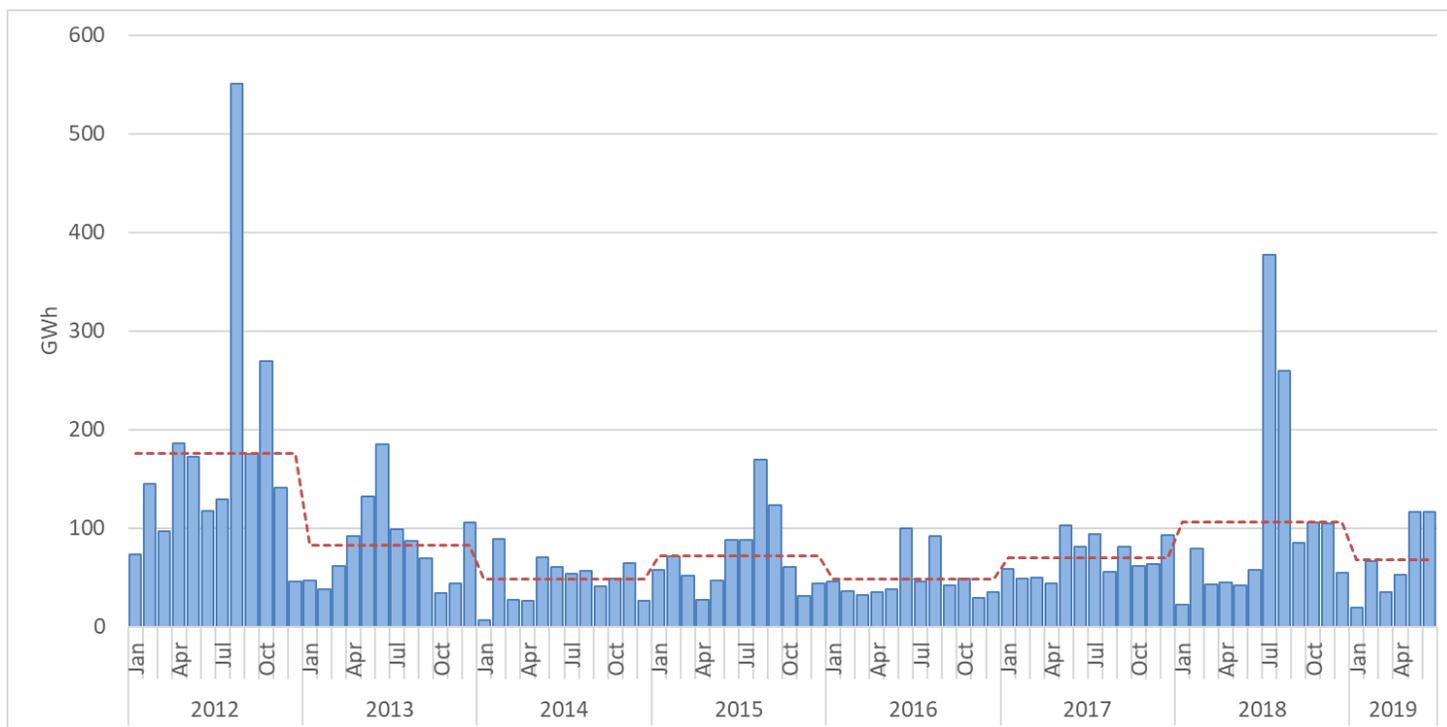
1. Introduction

This informational report by the California ISO (CAISO) provides an update to the Commission and market participants on the exceptional dispatch metrics and the measures the CAISO took to reduce reliance on exceptional dispatch for the period from January 2012 through June 2019. As explained in the transmittal letter for the filing of this report, the CAISO consistently issued informational reports providing updates regarding those same exceptional dispatch matters on a 120-day basis through February 25, 2014; more recently, the CAISO resumed issuing a 120-day report.¹ This report covers the period of March 1, 2019 through June 30, 2019.

2. Exceptional Dispatch Data and Reports

As shown in Figure 1 below, the average volume of exceptional dispatch for 2019 is lower than 2018. The yearly average volume has remained relatively stable at low levels for recent years with the exception of peak summer conditions when exceptional dispatches are necessary to manage contingencies as evident from the July – August 2018 volume.

Figure 1: Exceptional Dispatch Volume from January 2012 to June 2019



Specifically, the exceptional dispatch volume increased during the 2018 July – August time-frame due to high temperatures and increased load across the system, along with fires and ramping conditions in the CAISO system. The volume of exceptional dispatches has reduced since the 2018 July – August time-frame. The exceptional dispatch volume increased slightly for May – June 2019, which in comparison to earlier months, primarily due to high

¹ The CAISO's 120-day reports are available on the CAISO website at: <http://www.caiso.com/informed/Pages/RegulatoryFilingsAndOrders.aspx>.

temperatures and increased load during the June 10 – 12, 2019 heat wave. The increase in exceptional dispatch volume for May 2019 was due to a planned transmission outage and scheduled unit testing as shown in Figure 3, below.

The majority of the volume of exceptional dispatches from May to June, 2019 were driven by planned transmission outages, which was followed by load forecast uncertainty and unit testing as shown in the Figure 4.

Figure 2: Daily Exceptional Dispatch Volume from March 2019 to June 2019

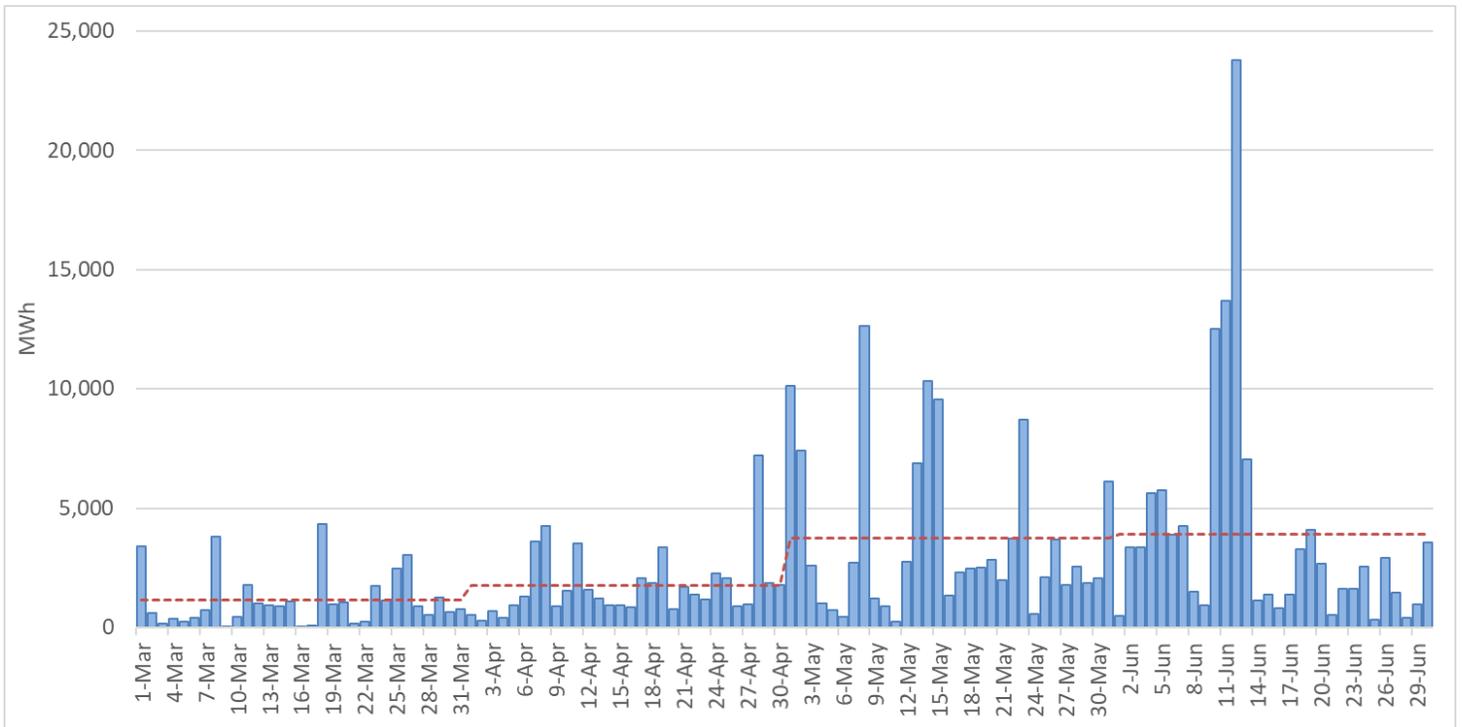


Figure 4, below, shows the hourly pattern of exceptional dispatch volume for May 2019 to June 2019. It also shows that the load forecast uncertainty occurred primarily during the evening peak hours from hours ending 15 to 22.

Figure 3: Daily Exceptional Dispatch Volume for March 2019 to June 2019 by Reason

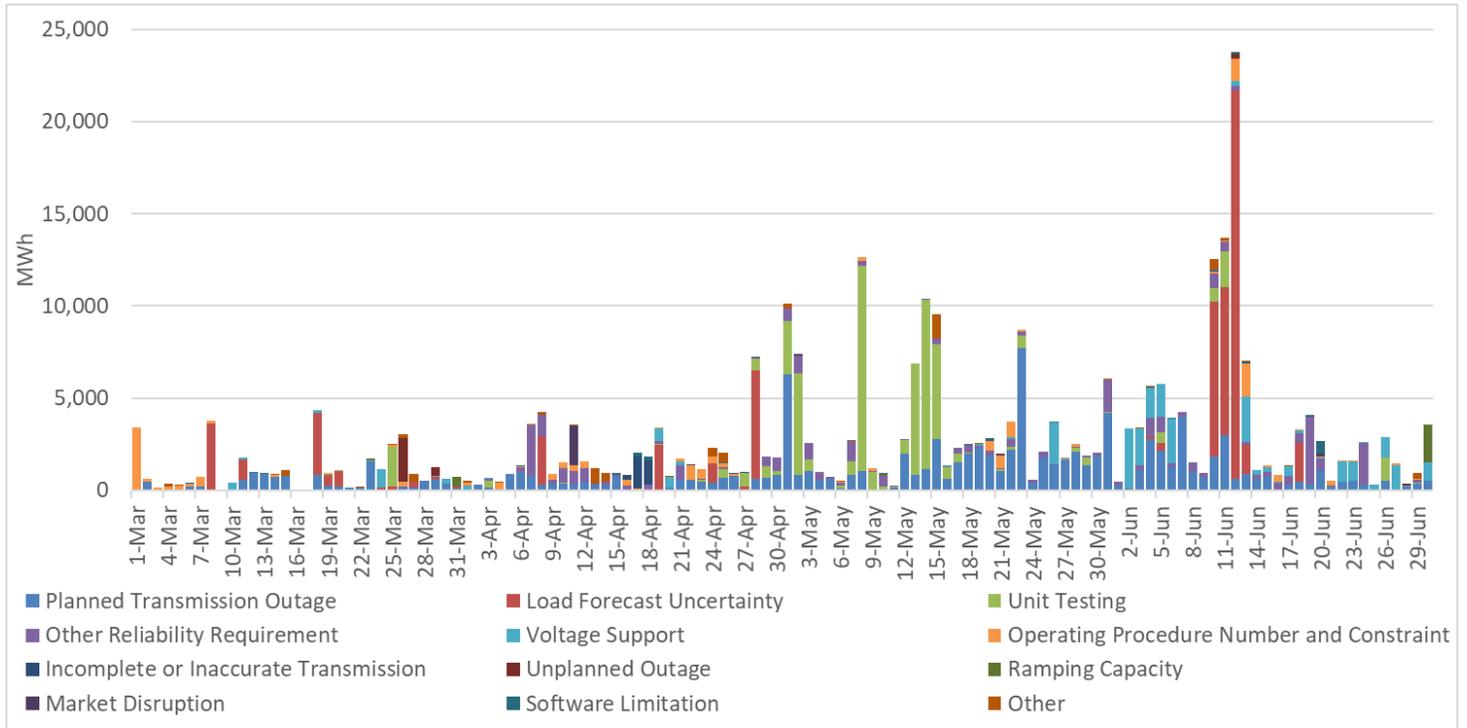
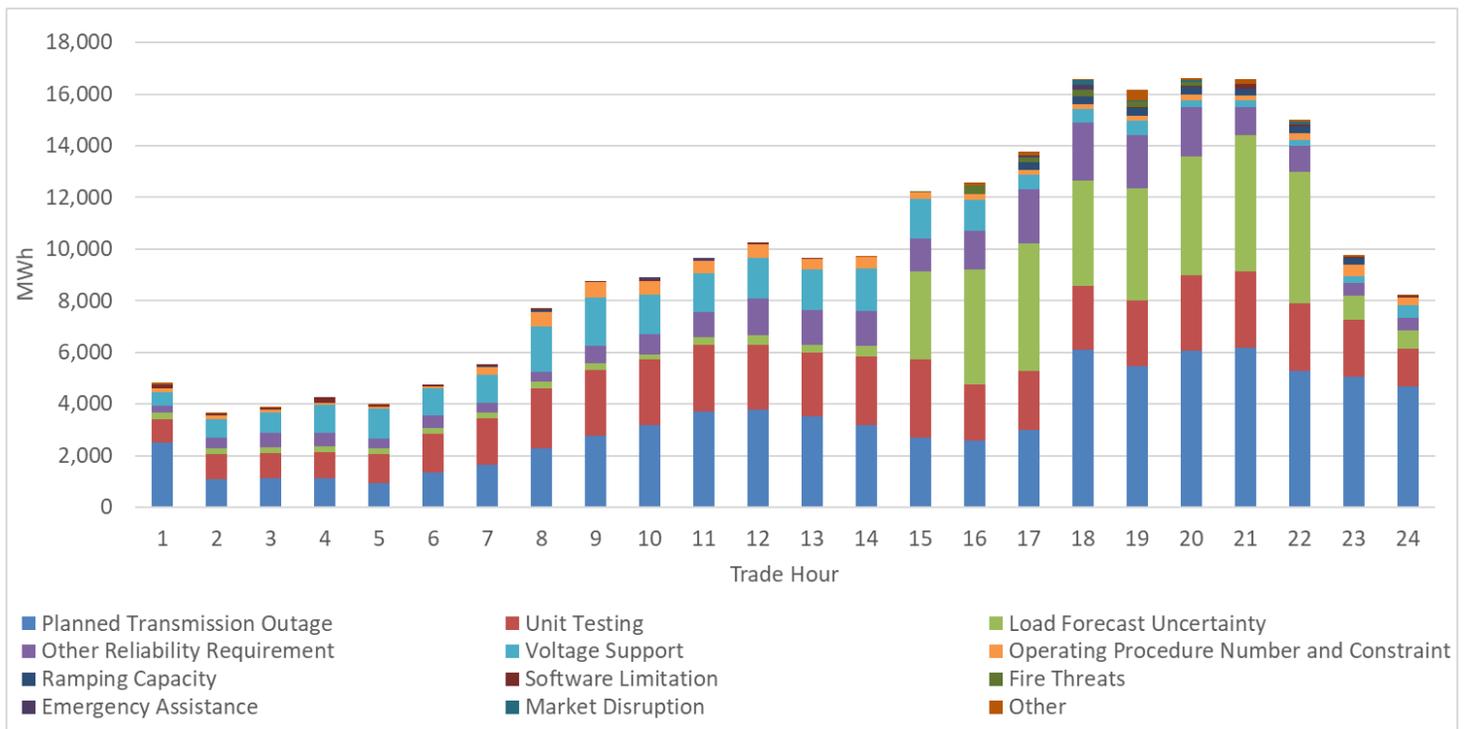


Figure 4: Hourly Exceptional Dispatch Volume for May 2019 to June 2019 by Reason



To comply with Commission directives and inform the market, as reflected in the Commission's orders and the CAISO tariff, the CAISO produces and files two monthly exceptional dispatch reports in Docket Nos. ER08-1178 and ER08-88, in addition to the 120-day reports. One report (the Table 1 report)² is filed on the 15th day of every month and the other report (the Table 2 report)³ is filed on the 30th day of every month.⁴ The CAISO has filed the Table 1 and Table 2 reports with the Commission on the regular monthly schedule during the period from February 2014 through July 2019. These monthly reports provide the market with the most recent summary of exceptional dispatch activity and associated costs. The monthly reports are also available on the CAISO's website at: <http://www.caiso.com/market/Pages/ReportsBulletins/Default.aspx>.

Table 1 Report. The Table 1 report provides information on the frequency, quantity, and duration of exceptional dispatch. The report is based on a template specified in Commission orders. Each line item entry 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 six categories of information are provided: (1) Megawatts; (2) Commitment; (3) Inc or Dec; (4) Hours; (5) Begin Time; and (6) End Time. Appendix A to the Table 1 report contains three illustrative examples of how exceptional dispatch activity is captured in the report.

Table 2 Report. The Table 2 report contains the same six categories of information provided in the Table 1 report and in addition contains the following ten categories of information: (7) Total Volume (MWh); (8) Min Load Cost; (9) Start Up Cost; (10) Charge Code "CC" CC6470; (11) Exceptional Dispatch Volume (MWh INC/DEC); (12) CC6470 INC; (13) CC6470 DEC; (14) CC6482; (15) CC6488; and (16) CC6620.

The CAISO also publishes a monthly market performance report at: <http://www.caiso.com/market/Pages/ReportsBulletins/Default.aspx>. This monthly report highlights the frequency and cost of exceptional dispatch as a subset of the broader category of system operator intervention. The report is published approximately three weeks after the end of every month and is based on preliminary settlement data available about 10 days after the end of the month.

Additional information is also explained in greater detail in the Market Performance Metric Catalog that the CAISO issues on a monthly basis. This report provides the explanation and context for each market metric, including information on exceptional dispatch, and is available at: <http://www.caiso.com/market/Pages/ReportsBulletins/Default.aspx>.

² *Cal. Indep. Sys. Operator Corp.*, 128 FERC ¶ 61,218 (2009) (September 2 Order), see Appendix A.

³ *Id.*, see Appendix B.

⁴ Tariff section 34.11.4.

In addition, in order to comply with the Order No. 844,⁵ CAISO publishes three reports in order to provide greater transparency regarding how prices reflect the marginal cost of serving load and the operational constraints of reliably operating the system. The monthly reports provide the following information 1) uplift payments by transmission area, 2) uplift payments for each resource, and 3) operator initiated commitments. The uplift payments reflect the exceptional dispatch payments made to the resource. It also includes the excess cost payments that reflect the uplifts associated with exceptional dispatches to address emergency conditions, to avoid market disruption, or to avoid an imminent system emergency. These uplift reports also includes the monthly exceptional dispatch capacity procurement mechanism (CPM) payments. It reflects the payment associated for capacity services under the CPM for the trading month. The system operator initiated commitment report reflects each system operator-initiated commitment made during the month by transmission zone along with the size of the commitment, commitment reason and time period of the commitment.

The CAISO also provides a regularly scheduled forum for discussing issues, including exceptional dispatch – the Market Performance and Planning Forum meetings that the CAISO holds every six weeks. These meetings provide a venue for high-level dialogue on release planning, implementation, and new market enhancements. Agendas for the meetings cover items of importance to stakeholders, and includes general metrics of the CAISO market performance, including Exceptional Dispatch metrics. Meeting agendas, presentations, and stakeholder comments are posted on the Market Performance and Planning Forum webpage: <http://www.caiso.com/Documents/Market%20performance%20and%20planning%20forum>.

3. Actions to Address Exceptional Dispatch

This section describes the actions that have been taken to reduce exceptional dispatch since February 2014, as well as actions that are currently underway or planned for future implementation.

The CAISO models transmission constraints and reliability requirements in the market to reduce reliance on exceptional dispatch. The CAISO also uses minimum online constraints (MOCs) to address specific system conditions that otherwise would have required the issuance of exceptional dispatch instructions and when there is a competitive supply of resources to meet the need. This type of constraint is enforced in the day-ahead market as needed to ensure certain capacity is online to meet reliability requirements.

With Commission approval in February 2019, the CAISO also completed contingency modeling enhancement (CME) policy initiative to model remedial action schemes, which is another market-based solution to address specific transmission and generator outages that otherwise may require the use of exceptional dispatches.⁶ This functionality has been activated in the CAISO markets effective March, 2019. In November 2016, the CAISO implemented the flexible ramping product, which is a product for ramping capability procured and dispatched in the real-

⁵ *Uplift Cost Allocation and Transparency in Markets Operated by Regional Transmission Organizations and Independent System Operators*, 163 FERC ¶ 61,041 (2018) (Order No. 844). See also tariff sections 6.5.14, 6.5.15, and 6.5.16.

⁶ Information on the modeling of remedial action schemes can be found at: http://www.caiso.com/informed/Pages/StakeholderProcesses/GeneratorContingency_RemedialActionSchemeModeling.aspx. FERC accepted the tariff amendment to implement the residual action schemes in letter order dated February 28, 2019. *Cal. Indep. Sys. Operator Corp.*, 166 FERC 61,158 (2019).

time market to manage the system demand and supply uncertainty or variability.⁷ As with the CME and the initiative to model remedial action schemes, the flexible ramping product can help obviate the need for exceptional dispatches.

With the growing level of renewable integration, the system needs to accommodate the variable nature of supply from renewable resources with new market tools. In this area, the CAISO implemented two improvements allowing for better management and accounting of such resources. The first is an operational enhancement in the residual unit commitment (RUC) process, the expected production of renewable resources is now based on a forecast, as opposed to being based solely on the bids submitted by such resources. Using a forecast ensures that the RUC process will account as closely as possible for the forecasted generation of renewable resources, and that the commitment in the RUC process may be more accurate, which consequently may allow the CAISO to issue fewer exceptional dispatch commitments. Second, the CAISO amended the tariff in 2013 filing to lower the minimum bid price for energy bids to negative \$150 per megawatt-hour, with the expectation that this change will incent resources to provide more decremental bids in the real-time market.⁸ Additional decremental bids reduce the need to rely on exceptional dispatch in curtailing generation to manage potential over-generation conditions.

More recently, the CAISO has implemented additional forecast enhancements. Specifically, the CAISO has implemented a persistency-based real-time forecast for renewable resources with the aim of reducing the latency of the forecast. This enhancement is expected to better account for the renewable production closer to the real-time, which in turn may reduce the need for exceptional dispatches due to the uncertainty in dispatches of renewable resources.

Currently, the CAISO is exploring enhancements to its day-ahead market. The contemplated enhancements include proposals to consolidate the integrated forward market with the RUC process to better commit resources and reduce the conditions for oversupply. The CAISO is also planning to introduce more granular time intervals in the day-ahead market in order to evolve it from its current hour-by-hour basis to a 15-minute basis. This increased granularity will allow the market to commit and dispatch resources more precisely and account for the steep ramps introduced with the dispatch of renewable resources.⁹

Additionally, CAISO is exploring to expand more granular reasons regarding exceptional dispatches that would more accurately reflect the system conditions.

⁷ Information on the flexible ramping product can be found at: <http://www.aiso.com/informed/Pages/StakeholderProcesses/CompletedClosedStakeholderInitiatives/FlexibleRampingProduct.aspx>.

⁸ Tariff section 39.6.1.4, as revised in Docket No. ER13-2452.

⁹ Information on the day-ahead market enhancements can be found at: <http://www.aiso.com/informed/Pages/StakeholderProcesses/Day-AheadMarketEnhancements.aspx>.

CERTIFICATE OF SERVICE

I certify that I have served the foregoing document upon the parties listed on the official service list in the captioned 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 16th day of July, 2019.

1st Grace Clark
Grace Clark