



California Independent
System Operator Corporation

February 14, 2011

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-____
120 Day Exceptional Dispatch Report**

Dear Secretary Bose:

Pursuant to the Commission's September 2, 2009 order in the above referenced dockets, the California ISO submits the attached report. The September 2 order directed the ISO to continue to file reports every 120 days that describe the status of the ISO's efforts to reduce the frequency of Exceptional Dispatch and the status of the ISO's development of operational and product enhancements that would reduce reliance on Exceptional Dispatch. The attached report provides an update of the ISO's efforts to meet the Commission's directives as set forth in the September 2 Order.

Respectfully submitted,

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Exceptional Dispatch Report

**Prepared by
California Independent System Operator**

February 14, 2011

Exceptional Dispatch Report

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1. Introduction

This is the California ISO's fifth 120-day report. Previous 120-day reports were submitted to FERC on October 15, June 17, February 17, 2010, and October 20, 2009 and are available on the ISO website.¹ This report provides information to the Commission and market participants on the measures the ISO has taken, and plans to take since the last 120-day report, to reduce reliance on exceptional dispatch.

2. Exceptional Dispatch Data and Reports

Since the last 120-day report, the overall volume of exceptional dispatch has declined. Although this decline has not always decreased monotonically, the general pattern is indisputable. To comply with FERC directives and inform the market, the ISO produces extensive documentation on exceptional dispatch in addition to the 120-day reporting requirement process. The principal reporting method for exceptional dispatch is through the two monthly reports: one filed on the 15th of every month and one filed on the 30th of every month. The monthly reports provide the market with the most recent summary of exceptional dispatch activity. The monthly reports are also available on the ISO's website at: <http://www.caiso.com/1ff3/1ff3c4cf23840.html>.

These reports provide market participants with comprehensive data on the frequency, volume and cost of exceptional dispatches issued by the ISO to ensure the reliability of the California ISO balancing authority area. The report filed on the 15th of each month provides frequency and volume information for the most recent month for which it had this data. The report filed on the 30th of each month includes cost data for the most recent month for which it has settlement quality data.

Table 1 Report. This report provides information on the frequency, quantity, and duration of exceptional dispatches. The report is based on a template specified in the September 2 Order as modified by the May 4 Order. 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 information is provided: (1) Megawatts (MW); (2) Commitment (3) Inc or Dec (4) Hours; (5) Begin Time; and (6) End Time. Appendix A to the Table 1 Exceptional Dispatch Report contains three illustrative examples of how exceptional dispatch activity is captured in the report.

Table 2 Report. The Table 2 Report contains all the Table 1 Report fields in the same format, but adds ten additional columns to the report which include the six listed above as well as: (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.

- Appendix A: Explanation by Example. This appendix contains three detailed illustrative examples, based on fictitious data due to confidentiality, of how each data field in a report line item entry is determined.

¹ ISO 120-day reports, <http://www.caiso.com/2718/27189a5933dd0.html>

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- Appendix B: Price Impact Analysis. In the September 2 Order, FERC directed the ISO to conduct a price impact analysis on two distinct pricing nodes for the entire reporting period. The two pricing nodes must be the most impacted by the exceptional dispatch instructions and must belong to two different load aggregation points (LAPs). Each month, the ISO identifies one heavily impacted pricing node in the Pacific Gas and Electric (PG&E) load aggregation point (LAP) and one in the Southern California Edison (SCE) LAP, which correspond to an actual pricing nodes in the ISO system, for which only one resource is connected to each pricing node. Thus, the price nodes analyzed are different from month to month which may make an annual presentation of this data difficult to interpret.
- Appendix C: Exceptional Dispatch Bid Mitigation Analysis. In January 2009, the ISO applied the exceptional dispatch bid mitigation to the exceptional dispatches that are noncompetitive TMODELS and Delta Dispatch as of the month of August and began to provide the bid mitigation analysis in the January report.

The ISO also publishes a monthly market performance report at the Monthly Market Performance Report webpage at: <http://www.caiso.com/2424/2424d03b3f610.html>. This monthly report highlights the frequency and cost of exceptional dispatch as a subset of the broader category of 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 month end. Although issued monthly, the report usually shows data for the two most recent months.

Additional information is also explained in greater detail in the Market Performance Metric Catalog which is also issued on a monthly basis. This report provides the explanation and context for each market metric, including information on exceptional dispatch. The Market Performance Metric Catalogs are publicly available at: <http://www.caiso.com/2424/2424d14d4a200.html>

In addition to these reports, the ISO provides two regularly scheduled forums for discussing exceptional dispatch issues, among other issues: the bi-weekly market update call scheduled every other Thursday at 10:15 a.m. and the Market Performance and Planning Forum meetings held every six weeks. The market update call is available to address market participant questions on any topic, including exceptional dispatch. The Market Performance and Planning meetings began in February 2010. This forum provides for high-level dialogue on release planning, implementation and new market enhancements. The forum builds on the previous Market Release Workshop process. Agenda include items of importance to stakeholders including the ISO's progress on reducing reliance on exceptional dispatch, which is one of the ISO's corporate objectives as identified in the ISO's Five-Year Strategic Plan for 2010-2014.² Meeting agenda, presentations, and stakeholder comments are posted on the Market Performance and Planning Forum webpage: <http://www.caiso.com/271e/271ea81869a90.html>.

Finally, the ISO has launched a new stakeholder process known as the Renewable Integration Market Product and Review initiative. In this effort, the ISO and stakeholders will be taking a comprehensive look at what new products might be necessary and appropriate in light of the ISO's new market design and its renewable integration goals.

² The ISO's strategic plan is available at the following link: <http://www.caiso.com/2793/279394df10d80ex.html>.

3. Actions to Address Exceptional Dispatch

This section describes the actions that have been taken since the last 120-day report to reduce exceptional dispatch, as well as actions that are currently underway or planned for future implementation. Updates to the actions in this section will be provided as developed through ISO Market Notices, the Market Performance and Planning Forum, the bi-weekly Market Update Call,³ and through topic-specific ISO stakeholder initiatives. Table 1 provides an overview of actions since the last 120-day report.

Table 1: Actions to Reduce Exceptional Dispatch	
Date	Action
By End of Q2, 2011	21. Automated Load Forecast System Five-Minute
Exact Date TBD	22. Renewable Portfolio Standard Forecast
December 7, 2010	23. Better Modeling Shutdowns Profile
December 7, 2010	24. Multi-Stage Generator Modeling
December 16, 2010	25. Load Distribution Factor Forecasting
December 7, 2010	26. Day-Ahead Market Commitment Process Enhancements to Reduce Cycling
Ongoing	27. Other Software Fixes
Ongoing	28. Market Model Improvements
Ongoing	29. Consideration and Development of New Market Products

3.1. Status of Current and Future Actions

21. Automated Load Forecast System Five-Minute, 2010, By End of Q2, 2011 – This action was focused on improving load forecast accuracy by directly forecasting for every five- and 15-minute time target in RTM using the Automated Load Forecast System (ALFS). Currently, the ISO is interpolating and shaping the forecast between 30-minute forecast values produced by the Automated Load Forecast System. It is expected that a direct forecast of five and 15-minute values will lead to a more accurate forecast, account for changing conditions and better reflect peaks and valleys of the forecast. It is expected that this direct forecast will improve load forecasting and will further improve consistency of forecast occurring in HASP (T-1.25 hours) time horizon with the Real-Time dispatch time horizon (T-5 minutes). In addition the direction five-minute forecast will allow for intra-hour peak conditions to be predicted. This improvement may help reduce the need for exceptional dispatch occurring after HASP to better align the intertie dispatch with changing load forecast conditions. The new ALFS will also improve the consistency between day-ahead and real-time load forecasts. The ISO is testing the new ALFS system. Implementation date is to be determined. Implementation is now targeted for the first half of 2011.

22. Renewable Portfolio Standard Forecast, July 1, 2010– Beginning in September 2009, the ISO has increased its capability to stream more data from outside sources concerning solar and wind conditions to our forecast providers. This has enhanced our forecasting accuracy. In addition, on April 30, 2010, FERC issued an order conditionally accepting the ISO's filing of a tariff amendment to expand the scope of data required to be provided by wind and solar resources larger than 1 MW. The additional data requirements consist of (1) extending to additional resources the obligation to install forecasting and telemetry equipment and to

³ Market Update Call, <http://www.caiso.com/23dc/23dc932e2b630.html>

communicate relevant data to the ISO, and (2) reducing the threshold for reporting a forced outage of an eligible intermittent resource with total capacity of greater than 10 MW from the current outage capacity level of 10 MW to 1 MW. These requirements went into effect on July 1, 2010. More accurate forecasting and more information on outages should reduce the need for exceptional dispatch to manage wind and solar resources.

23. Better Modeling Shutdowns Profile, December 16, 2010 – This action focuses on reducing the artificial ramp created by high Pmin units. Improving profile modeling will allow the ISO to better predict the imbalance energy impacts of resources shutting down that currently are assumed to shutdown instantaneously. The current instantaneous assumption results in a high burden on the ramping capability of a resource. The Multi-Stage Generation (MSG) modeling enhancements, which includes improved capability for modeling shutdown profile and other modeling improvements, went live on December 7, 2010.

24. Multi-Stage Generator Modeling, December 7, 2010 – The more extensive resource modeling capability of Multi-Stage Generators, which will allow resources like Combined Cycle resource that have distinct operating configurations to be modeled more reflecting of the constraints. The ISO anticipates that some exceptional dispatches previously needed to manage such resources will no longer be needed, reducing the number of exceptional dispatches. MSG went live on December 7, 2010.

25. Load Distribution Factor Forecasting, 2010, December 16, 2010 - In some cases the short-term inaccuracy of load distribution factors can lead to situations where local constraints are not binding in the market but are actually binding, or the opposite may occur, where constraints are seen as binding in the market but are not actually binding. In either case, exceptional dispatches at times are used to constrain specific resources on or off to satisfy a constraint that actually exists. Therefore improved load distribution factor accuracy in such cases could reduce the need for exceptional dispatch. This enhancement is expected to evolve over the next one-year timeframe. Currently, the Load Distribution Factor process used in the Day-Ahead Market incorporates a simple “similar day process” that does not account for changes in weather conditions. Therefore, there are situations in which weather changes result in the similar day Load Distribution Factors not being sufficiently accurate. The first phase of this improvement involved development of a prototype that will allow the ISO to compare results with and without weather adjustment was completed at the end of 2nd quarter 2010. The current phase will incorporate adjustment into Load Distribution Factor process that will account for weather changes that affect sub-LAP area load forecast. The ISO has completed the development and prototyping of the new algorithm and completed parallel testing to compare the new LDF forecasts with the current LDF forecasts. After extensive testing and tuning, the new LDF tool is now in production. The production level of monitoring and implementation started on December 16, 2010.

26. Day-Ahead Market Commitment Process Enhancements to Reduce Cycling of Resources, December 7, 2010 To avoid unnecessary cycling of resources that can occur with a single-day commitment horizon the ISO is exploring a process enhancement concerning how initial conditions of a resource are determined. The ISO is taking two actions that related to mitigation of cycling of resources in the Day-Ahead Market: First, the ISO is considering enhancements to the existing initial conditions process to allow for resources that intend to stay online to inform the ISO of this intent prior to the start of the next day’s Day Ahead market process. Second, the ISO has started to explore the feasibility of phasing-in a multi-day unit commitment process first utilizing the deferred functionality that was intended to provide for optimal decisions regarding Extremely Long Start resources possibly combined with an extension of the existing Residual Unit Commitment process to evaluate 48 to 72 hour instead of the current 24 hours. This approach would provide benefits of incorporating a bridged

commitment decision across off-peak hours as well as setting up a more optimized input to initial conditions for the next day's Day-Ahead market. The ISO has initiated and completed a stakeholder process. The ISO is now working toward implementing this enhancement to initial condition on December 7, 2010, and is evaluating implementation of 72 hour Residual Unit Commitment in the spring of 2011. The initial condition enhancement was activated on December 7, 2010, and the 72 Hour RUC project has started and is targeted for implementation in the latter half of 2011.

27. Other Software Fixes, Ongoing - At times resources commitment status does not track with schedule or actual telemetry. Until these issues are fully addressed, exceptional dispatch is a mechanism to force the resource status to the correct status. Several of these issues have been addressed and the ISO will continue to address such observation.

28. Market Model Improvements, Ongoing - The ISO plans to continue the efforts to expand the network modeling to include more transmission network, generation resources and loads external to the ISO Controlled Grid. Initial planning and conceptual design has started.

29. Consideration and Development of New Market Products, Ongoing - Given that the potential new product data set trend is similar to overall exceptional dispatch trends, the ISO concluded in the June 2010 Exceptional Dispatch Report that the modeling and software improvements taken to date have had a broader impact across all exceptional dispatch reason codes. In addition, the ISO concluded that due to the varied causes of exceptional dispatches that no single product could be designed that would displace exceptional dispatch. Instead, the ISO concluded that continued emphasis on modeling and software enhancements plus current and planned stakeholder initiatives will provide a secondary benefit of reducing exceptional dispatches. For example, the new market product initiative discussed below will provide a comprehensive review of new products that the ISO will need to operate its markets efficiently while reducing reliance on exceptional dispatch.

Many stakeholders agreed with the ISO's conclusions. In comments on the June 2010 120-day report, six sets of stakeholder comments were received by the ISO. Overall, stakeholders agreed that new product development should not occur in a narrow context focused specifically on exceptional dispatch. CPUC staff stated that they did not see that a new market product has been identified that would appreciably reduce exceptional dispatch frequency and/or volume, beyond the market developments already being discussed by the ISO Staff. CPUC Staff urged that the value of and resources required to develop any proposed product should be weighed against the ISO's investment and allocation of resources to achieve other important policy goals mentioned above, such as increasing California's reliance upon renewable and demand response resources.

Calpine noted that new market products may not be needed to address the remaining instances of exceptional dispatch but they may be required to provide appropriate compensation and ensure that adequate resources with the right operating characteristics are made available to the ISO. Similarly, RRI Energy stated that whether or not new products are required to reduce the frequency of exceptional dispatch is too narrow a perspective in considering whether new products are required. In fact, it seems likely that new products to integrate renewable resources will be required – and may have a corollary benefit of reducing the volume or frequency of exceptional dispatch. RRI further stated that the use of on-line capacity constraints may mask the need for additional reliability services, and fail to make fully transparent the reliability services the ISO requires. New products may make the reliability services appropriated through on-line capacity constraints more transparent and assure their continued availability. To the extent such product are needed, the ISO believes they should be developed in light of a comprehensive review of the market's needs.

WPTF's comments strike a similar chord. WPTF stated that the ISO may be interpreting "products" more narrowly than are WPTF members. WPTF commented that ISO services should be explicit and receive the appropriate compensation. While a new product specifically designed to reduce the frequency of exceptional dispatch is not required, and though the on-line capacity constraints are preferable to an out of market mechanism, the use of an on-line capacity constraint should not be viewed as an end state for two important reasons. First, it lacks transparency regarding the need, and second it appropriates the reliability services required rather than specifying an unbundled, competitively procured market product that satisfies the need.

The Renewable Integration Market and Product Review initiative that began in summer 2010 outlined operational needs resulting from increasing system variability and will determine if new ancillary services products are required due to the increased penetration of intermittent resources. The ISO believes that this initiative is the right forum in which to address many of the thoughts and concerns described by stakeholders in the 120-day report process. This initiative is taking a prospective, two-phased look at the need to develop new products to ensure that the level of exceptional dispatches does not significantly increase as a result of the addition of a large amount of variable energy resources.

4. Renewable Integration Market and Product Review

In the June 10, 2010 Exceptional Dispatch Review and Assessment White Paper, the ISO announced that the Renewable Integration Market and Product Review (RI-MPR) initiative would commence in summer 2010. Through this initiative, the ISO and stakeholders will review the emerging operational needs resulting from higher system variability and forecasting errors and determine if new ancillary services are required due to the increased penetration of intermittent resources. The aim of this initiative is to develop market rules and products that provide appropriate incentives and opportunities for all resources, including intermittent resources, to offer their flexibility into the market so that the market optimization can achieve the most efficient, least-cost dispatch possible. This flexibility is essential for the successful integration of renewables, and in the avoidance of exceptional dispatch.

The RI-MPR initiative commenced with a stakeholder forum on July 16, 2010 to discuss the potential impacts of reaching 20% and 33% RPS goals. Additional documentation from the forum is available at <http://www.caiso.com/2811/28117c3575190.html>. Following the forum the ISO published the 20% Renewable Integration study results on August 31, 2010. The study is available at <http://www.caiso.com/2804/2804d036401f0.pdf>. The ISO held a stakeholder meeting on September 17, 2010 to discuss the study methodology and results. The results of the study concluded that the existing ISO fleet could integrate 20% RPS by 2012; however, this assumes that the existing conventional generation fleet remains available for dispatch. The study did highlight some potential concerns around real-time self-scheduling of conventional generation and the lack of downward dispatchable capacity leading to over-generation which will be addressed in the first phase of the RI-MPR initiative.

The Phase 1 RI-MPR issue paper and scoping document was published on September 30, 2010. The issue paper is available at <http://www.caiso.com/2821/2821c31a21680.pdf>. A stakeholder meeting was held on October 5, 2010. Based on extensive stakeholder feedback, the ISO developed and issued a Straw Proposal on December 22, 2010. In addition to elaborating on the current extent of self-scheduling in the ISO market, that document provided two recommended changes to market rules that the ISO expects to improve incentives to economically bid thereby enabling the market optimization to make use of the flexibility of the current generation fleet. The scope focused on increasing load following and regulation

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capacity by 2012. In order to increase load following capacity the ISO will evaluate modifications necessary to increase the number of resources (conventional and intermittent) available for economic dispatch. Specifically, the proposal included recommendations to lower the energy bid floor to provide additional incentives for resources to provide decremental energy bids, along with a recommendation to phase out the Participating Intermittent Resource Program (PIRP) which requires resources in that program to self-schedule their forecasted output. The proposal was presented to stakeholders on January 6, 2011 and extensive comments were received on the Straw Proposal on January 20, 2011. Further data analysis as well as consideration of stakeholder feedback is helping to refine this proposal and produce a Draft Final Proposal for stakeholder consideration in February 2011.

With regards to increasing regulation capacity, the ISO completed the design of Regulation Energy Management (REM) which enables Limited Energy Storage Resources to participate in the Day-Ahead Regulation market. The ISO Board of Governors approved this market design in February 2011.

In Phase 2 of the RI-MPR initiative, which is scheduled to kick-off in Q1 of 2011, the ISO and stakeholders will address potential new products to meet the operational needs identified in the 33% Renewable Integration study which is currently underway. Additional integration study results are expected to be completed throughout 2011, and will be instrumental in determining the need for and the definition of any new market products required for the successful integration of renewable generation resources through efficient market mechanisms.

CERTIFICATE OF SERVICE

I hereby 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 14th day of February, 2011.

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