

153 FERC ¶ 61,186  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;  
Cheryl A. LaFleur, Tony Clark,  
and Colette D. Honorable.

California Independent System Operator Corporation

Docket No. ER14-2017-001

ORDER ACCEPTING COMPLIANCE FILING

(Issued November 19, 2015)

1. On September 2, 2014, the California Independent System Operator Corporation (CAISO) submitted a filing in compliance with an order issued by the Commission on July 31, 2014.<sup>1</sup> In this order, we accept CAISO's compliance filing.

**I. Background**

2. In a May 22, 2014 filing, CAISO proposed tariff revisions to enhance its Full Network Model to account for unscheduled flows from outside CAISO's market in its day-ahead market.<sup>2</sup> Unscheduled flows are the result of the difference between the contract path of scheduled electricity and the actual path of electricity in real-time. CAISO proposed three changes to its Full Network Model to account for unscheduled flow. First, CAISO proposed to model unscheduled flows in the day-ahead market within CAISO's balancing authority area based on available information from other balancing authority areas. Second, CAISO proposed to enforce physical flow constraints on the interties in the day-ahead market, consistent with the way CAISO currently models and enforces constraints in its real-time market. Finally, CAISO proposed to extend its

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<sup>1</sup> *Cal. Indep. Sys. Operator Corp.* 148 FERC ¶ 61,089 (2014) (July 2014 Order).

<sup>2</sup> CAISO's Full Network Model is a detailed, computer-based mathematical representation of the physical transmission system and includes all intertie busses between CAISO's balancing authority area and other balancing authority areas to which CAISO is interconnected. CAISO uses its Full Network Model to operate its day-ahead and real-time markets. *Id.* P 2.

modeling of the grid external to the CAISO-controlled grid to reflect the anticipated day-ahead and actual real-time topology of other balancing authority areas in the West.<sup>3</sup>

3. CAISO stated that the data it would use to implement these modeling enhancements consists of: (1) telemetry data; (2) load and generation distribution factors; (3) demand forecasts; (4) net interchange schedules; (5) generation forecasts; and (6) generation and transmission outages. This data has mainly become available via Peak Reliability (which is a company that performs the reliability coordinator and interchange authority functions in the Western Interconnection), the Western Electricity Coordinating Council (WECC) interchange tool, and CAISO's state estimator.<sup>4</sup>

4. Some parties protested CAISO's May 22, 2014 filing. Among other protests and comments, Southern California Edison Company (SoCal Edison) suggested that CAISO adopt an accuracy metric to confirm that the metric was an improvement on existing modeling.<sup>5</sup> In its June 27, 2014 answer, CAISO agreed with SoCal Edison's proposal and stated that it would develop an accuracy metric as part of complying with a Commission order accepting the CAISO's Full Network Model proposal. In its answer, CAISO proposed that if the accuracy metric shows that the results of the Full Network Model with modeled unscheduled flows have not produced more accurate results than would have been produced without modeling unscheduled flows over a rolling three-week period, then consideration of unscheduled flows would be temporarily suspended. CAISO suggested that the metric be in place for a transitional year, after which it would be suspended following six consecutive months without requiring suspension.

5. In addition, in response to comments by Imperial Irrigation District (IID), CAISO's June 27, 2014 answer also explained that the unscheduled flow data it proposes to disclose will be highly aggregated and that unscheduled flow data will only be disclosed to parties that have signed the WECC universal non-disclosure agreement.

6. In the July 2014 Order, the Commission found CAISO's proposal to be a just and reasonable enhancement of CAISO's modeling of its markets.<sup>6</sup> The Commission also found that the accuracy metric proposed by CAISO in its answer to SoCal Edison's comments should ensure that the consideration of unscheduled flows would produce a more accurate model of power flows in the day-ahead market. The Commission directed

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<sup>3</sup> *Id.* P 6.

<sup>4</sup> *Id.* P 9.

<sup>5</sup> *Id.* P 24.

<sup>6</sup> *Id.* P 56.

CAISO to submit tariff revisions that included its offered accuracy metric. The Commission agreed with CAISO that its accuracy metric need not be a permanent feature of the CAISO tariff, but directed CAISO to revise its proposal such that following the transitional period of one year after October 1, 2014, the mechanism would only cease to be effective once the standard has been met for 12 consecutive months.<sup>7</sup>

7. The July 2014 Order also noted that section 6.5.10.1.5 of CAISO's tariff states that CAISO will provide parties that have signed a non-disclosure agreement the hourly unscheduled flow at each intertie in the day-ahead and real-time market after the results of the respective markets are posted. The Commission ordered that, as part of this report, CAISO should include a summary of whether it enforced physical flow constraints on the interties pursuant to section 31.8.2 of its tariff, and, if it did not, a short description of the reasons for non-enforcement.<sup>8</sup>

## II. CAISO Filing

8. On September 2, 2014, CAISO filed tariff revisions in compliance with the July 2014 Order. With regard to the accuracy metric, for each day in the day-ahead market, CAISO will compare the magnitude of the difference between the following two amounts: (1) the actual unscheduled flows on the interties caused by external balancing authority area generation, load, and interchanges; and (2) CAISO's modeled day-ahead external unscheduled flow on the interties per hour in megawatts. CAISO will compare the two amounts under two scenarios. In the first scenario, CAISO models the external unscheduled flow impacts of external balancing authority area schedules in the day-ahead market; in the second scenario, CAISO does not model such impacts. CAISO states that it will compare the magnitude of the difference between actual unscheduled flow on the interties and CAISO's modeled unscheduled flow per hour under the two scenarios.<sup>9</sup>

9. CAISO states that if the three-week rolling average of the aggregated accuracy metric shows that the magnitude of the difference under the first scenario is greater than the magnitude of the difference under the second scenario, it will suspend its consideration of external unscheduled flow due to external balancing authority area schedules in the day-ahead market. CAISO proposes that the suspension will be in place until CAISO demonstrates that the three-week rolling average of the aggregated accuracy metric under the first scenario is less than it is under the second scenario. Under the

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<sup>7</sup> *Id.* at PP 59-60.

<sup>8</sup> *Id.* P 63.

<sup>9</sup> CAISO September 2, 2014 Transmittal at 3.

proposal, even when the accuracy metric threshold is met, if CAISO determines that the consideration of the external unscheduled flow is hampering its ability to operate the system reliably, CAISO may elect to suspend consideration of the unscheduled flow in the day-ahead market until it has determined that considering the external unscheduled flow no longer hampers its ability to operate the system reliably.<sup>10</sup>

10. CAISO states that it will exclude from the accuracy metric the impact of the following unforeseen real-time events: (1) the loss of direct current transmission lines, (2) unexpected outages of generators over 1,000 MW, or (3) a derate of over 1,000 MW at any intertie.<sup>11</sup> CAISO states that these tariff provisions are consistent with its explanation in the June 27, 2014 answer that CAISO will exclude from the metric the impact of these same unforeseen real-time events.

11. CAISO notes that, in the July 2014 Order, the Commission directed that, as part of the report on hourly unscheduled flow at the interties to be provided to parties that have signed the applicable non-disclosure agreement, CAISO should include a summary of whether it enforced physical flow constraints on the interties pursuant to tariff section 31.8.2, and, if it did not, a short description of the reasons for non-enforcement. CAISO proposes to revise tariff section 6.5.10.1.5 in accordance with these directives.<sup>12</sup>

12. CAISO also proposes in this compliance filing to add new tariff section 6.5.10.2(e). The new section states that, to obtain access to the protected data specified in tariff section 6.5.10.1, each market participant or non-market participant that otherwise qualifies to obtain the protected data pursuant to the requirements of tariff section 6.5.10.2, must also certify in writing to CAISO that it has executed the WECC universal non-disclosure agreement. CAISO states that this proposal codifies the clarification it made in its June 27, 2014 answer.<sup>13</sup>

### **III. Notice of Filing and Responsive Pleadings**

13. Notice of CAISO's compliance filing was published in the *Federal Register*, 79 Fed. Reg. 54,274 (2014), with interventions and protests due on or before September 23, 2014.

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<sup>10</sup> *Id.* at 5.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* at 7.

<sup>13</sup> *Id.* at 7-8.

14. DC Energy, LLC filed a motion to intervene out-of-time. Western Power Trading Forum (WPTF) filed a motion to intervene out-of-time and protest. Powerex filed a protest. Southern California Edison Company (SoCal Edison) filed comments in support.

15. Subsequently, Imperial Irrigation District (IID) filed a motion for leave to answer and answer opposing WPTF's untimely motion to intervene and Powerex and WPTF's protests. CAISO filed an answer to Powerex's protest. Powerex filed a motion for leave to file supplemental protest and supplemental protest. CAISO filed an answer to WPTF's out-of-time protest, Powerex's supplemental protest and IID's answer. Powerex filed a motion for leave to answer and answer to the answers of IID and CAISO.

**A. Powerex Protest**

16. Powerex states that CAISO's accuracy metric will overestimate the accuracy of the unscheduled flow forecasts because they do not include unforeseen real time events. Powerex states that selectively excluding events and operational errors from CAISO's accuracy metric biases the metric in favor of CAISO's forecasts.<sup>14</sup> For example, Powerex notes that CAISO excluded two days from its calculation of the metric during pre-implementation testing because of "spurious results produced by duplicate records in input."<sup>15</sup>

17. Powerex also argues that CAISO should clarify that the accuracy metric will be applied to unscheduled flow values actually used in the day-ahead market.<sup>16</sup> Powerex states that it is not clear whether "CAISO's modeled day-ahead external unscheduled flows" will be subject to further adjustments prior to running the day-ahead market.<sup>17</sup> Powerex argues that the accuracy metric can only measure whether the modeling of unscheduled flows is an improvement on the status quo if it includes the actual values used in the day-ahead market. Powerex states that an inaccurate modeling of unscheduled flows can distort the market and undermine efficiency.

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<sup>14</sup> Powerex September 23, 2014 Protest at 5.

<sup>15</sup> *Id.* citing CAISO July 14, 2014 Answer, Docket No. ER14-2017-000 at 5-9.

<sup>16</sup> *Id.* at 6.

<sup>17</sup> *Id.*

**B. CAISO Answer**

18. CAISO argues that it is just and reasonable to exclude certain major real-time events from its measurement of the accuracy of the forecast.<sup>18</sup> CAISO states that its use of a 1,000 MW limit will ensure that day-to-day outages and the loss of a smaller intertie will be included in the forecast. CAISO argues that events above this magnitude are beyond CAISO's ability to control or predict and therefore would unnecessarily bias the metric against the modeling of unscheduled flows. CAISO clarifies that it will use the data included in the day-ahead market to measure the accuracy of its forecasts.<sup>19</sup> CAISO notes that Powerex does not point to any part of the filing where CAISO had stated that it would not include such data.<sup>20</sup>

**C. Additional Protests**

19. In a supplemental protest, Powerex argues that CAISO went beyond the compliance directives of the Commission by requiring that entities sign the WECC universal non-disclosure agreement. Powerex states that this will limit access to CAISO's information. Powerex explains that, absent agreement by every other entity in WECC that has executed the WECC universal non-disclosure agreement, market participants can only access CAISO's information if they are a "Balancing Authority, Transmission Owner, Transmission Operator, Reliability Coordinator, or otherwise retain responsibility for grid operations."<sup>21</sup>

20. Powerex further argues that there is no reason to protect the information with a confidentiality agreement. Powerex argues that the information that will be released does not contain underlying proprietary information that merits confidentiality protections.<sup>22</sup> Powerex further states that the requirement to sign the non-disclosure agreement goes beyond the Commission's compliance directives. Powerex argues that the compliance filing should strictly adhere to the Commission's compliance directives, and the

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<sup>18</sup> CAISO October 3, 2014 Answer at 5-6.

<sup>19</sup> *Id.* at 7.

<sup>20</sup> CAISO notes that Powerex declined to participate in the stakeholder process, at which time Powerex would have had the opportunity to comment on the proposed tariff revisions. *Id.* at 4.

<sup>21</sup> Powerex October 22, 2014 Supplemental Protest at 5 (citing WECC universal non-disclosure agreement, Section I).

<sup>22</sup> *Id.* at 7.

Commission made no directive that the information be protected by a non-disclosure agreement.<sup>23</sup> WPTF agrees with Powerex that the requirement to sign the WECC universal non-disclosure agreement will present a significant barrier to its members receiving information that has a direct impact on schedules, payments, and charges. WPTF argues that the clearing of energy at the interties would become a black box without access to this information.<sup>24</sup>

**D. Answers to Additional Protests**

21. CAISO argues that good cause does not exist to accept the late-filed Powerex supplemental protest and the protest by WPTF. CAISO notes that it has been clear since its June 27, 2014 answer in the initial proceeding that in order for a party to access unscheduled flow data, CAISO would require that party to sign the WECC universal non-disclosure agreement and that the time for raising these concerns has long passed.<sup>25</sup>

22. CAISO further argues that its tariff revision merely extends the same protection to information used in modeling unscheduled flow that is used for other categories of information in CAISO's tariff. CAISO notes that while other sections of the tariff reference other confidentiality agreements, those confidentiality agreements have been superseded and the WECC universal non-disclosure agreement is the only available non-disclosure agreement. CAISO states that it considers the information it uses in modeling unscheduled flows to be covered information under the WECC universal non-disclosure agreement, and that requiring the execution of the WECC universal non-disclosure agreement is just and reasonable since it prevents CAISO from violating the agreement.<sup>26</sup> CAISO states that it made clear its intention in its June 27, 2014 answer that it would require execution of the WECC universal non-disclosure agreement in a compliance filing, and that it would be inappropriate to interpret the Commission's silence as a rejection.

23. In response to WPTF and Powerex, IID argues that the WECC universal non-disclosure agreement is necessary to protect reliability information from being used for profit.<sup>27</sup> IID argues that information CAISO uses to model unscheduled flows should be

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<sup>23</sup> *Id.* at 9-10.

<sup>24</sup> WPTF October 24, 2014 Protest at 4-5.

<sup>25</sup> CAISO November 12, 2014 Answer at 6.

<sup>26</sup> *Id.* at 7.

<sup>27</sup> IID November 6, 2014 Answer at 5.

protected because it is derived from information that CAISO would not have access to without signing the WECC universal non-disclosure agreement. IID states that Powerex's claim that there is a lack of transparency in CAISO's proposal is unsubstantiated.

24. IID also argues that WPTF and Powerex mischaracterize the requirements to execute the WECC universal non-disclosure agreement. IID states that any market participant that requires data protected under the WECC universal non-disclosure agreement for reliability purposes may sign the agreement without seeking approval from all the other WECC universal non-disclosure agreement parties. IID states that such market participants must only refrain from using the protected reliability data for commercial purposes.<sup>28</sup>

**E. Powerex Answer**

25. Powerex argues that CAISO and IID ignore the fact that CAISO's proposal is at odds with the Commission's directive in the July 2014 Order that market participants are allowed transparent access to relevant summary data. Powerex argues that even if the summary data is considered covered information under the WECC universal non-disclosure agreement, neither CAISO nor IID informs the Commission that the WECC universal non-disclosure agreement expressly contemplates that its disclosure restrictions will be subordinate to orders of the Commission.<sup>29</sup>

26. Powerex also disputes CAISO's interpretation of its revision as an extension of existing tariff provisions.<sup>30</sup> Powerex states that the tariff provisions cited by CAISO are narrowly written to only require market participants that are not members of WECC to sign the confidentiality agreement. Moreover, Powerex states that the provisions require market participants to sign a WECC confidentiality agreement, which is of a different nature than the WECC universal non-disclosure agreement, and far less restrictive as to what entities may sign the agreement.

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<sup>28</sup> *Id.*

<sup>29</sup> Powerex November 17, 2014 Answer at 5 (citing WECC universal non-disclosure agreement, Section IV.1).

<sup>30</sup> *Id.* at 8-9.

#### **IV. Discussion**

##### **A. Procedural Matters**

27. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d) (2015), the Commission will grant WPTF's and DC Energy, LLC's late-filed motions to intervene given their interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

28. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure<sup>31</sup> prohibits an answer to a protest or answer unless otherwise ordered by the decisional authority. We will accept the answers and replies filed by IID, CAISO, and Powerex because they have provided information that assisted us in our decision-making process.

##### **B. Substantive Matters**

29. The Commission accepts CAISO's proposed tariff revisions to adopt an accuracy metric, effective October 1, 2014, as requested. CAISO's accuracy metric follows the broad outlines of what CAISO proposed in its June 27, 2014 answer in this proceeding, and provides a fair test of the accuracy of CAISO's modeling of unscheduled flows based on external schedules. The accuracy metric will provide a comparison of the aggregate error on each of the interties as a result of the two modeling scenarios that CAISO will conduct (as described in P 8, above). This is an appropriate test for CAISO's modeling to meet because it will measure the accuracy of the modeling across all interties, and would avoid scenarios where modeling of unscheduled flows across all interties would be suspended based simply on less accurate performance over a single intertie.

30. Powerex argues that CAISO's proposed accuracy metric is unfairly biased in favor of its own modeling as it excludes large contingency events from its calculation of the accuracy of unscheduled flows. However, we find that how the modeling scenarios performed in normal operations provides a better measure of the accuracy of both modeling scenarios discussed above. It is important to plan and account for large contingency events, but the model's performance during such events does not provide information as to its accuracy during normal, day-to-day operation. Since large contingency events are unpredictable and can vary dramatically in their impact, we find that modeling normal operations only provides a more useful tool for managing grid operations. As CAISO indicated in its original filing, the enhanced modeling accepted in this proceeding will allow CAISO to operate the day-ahead market in a manner that more accurately reflects actual system conditions that materialize in real-time.<sup>32</sup> Including

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<sup>31</sup> 18 C.F.R. § 385.213(a)(2) (2015).

<sup>32</sup> CAISO May 22, 2014 Filing at 2.

large contingency events in this model would diminish the value of enhanced full network modeling and reduce the reliability and market benefits derived therefrom. Powerex assumes that the exclusion of these events would inherently bias the accuracy metric in favor of CAISO's modeling. However, there is no reason to think that including these large contingency events could not *also* bias the accuracy metric in favor of CAISO's modeling. Moreover, large contingency events may tend to create inaccuracies that are large in magnitude for both modeling scenarios, which could cause them to have an outsize role in determining which modeling scenario performed better over each rolling three week period.

31. With respect to CAISO's requirement that market participants sign the WECC universal non-disclosure agreement to obtain access to intertie flow information, the Commission finds CAISO's proposal to be just and reasonable. The Commission understands the desire for transparency on the part of WPTF and Powerex. However, as discussed below, we find that without the protection of a non-disclosure agreement, there is a danger that entities will use this information in sophisticated ways to manipulate CAISO's markets.

32. Powerex and WPTF argue that in accepting CAISO's proposal, the Commission relied on the fact that the protected information would be available to all market participants regardless of whether they sign the non-disclosure agreement. However, this is not the case. Rather, the Commission required CAISO to implement additional measures to provide transparency on its modeling of unscheduled flows to those that had signed the non-disclosure agreement.<sup>33</sup> The Commission found that further transparency measures were not necessary and continues to do so here.<sup>34</sup>

33. Powerex and WPTF have not presented a compelling transparency concern that would justify opening protected data to entities that do not meet the requirements of the WECC universal non-disclosure agreement. Powerex and WPTF argue that CAISO's modeling would be unclear. However, the detailed modeling information demonstrating intertie flows is not necessary for those that bid into CAISO's markets, and as we have noted, the provision of too much information without the proper safeguards could lead to market manipulation. Moreover, we find the WECC universal non-disclosure agreement to be a reasonable and not unduly burdensome tool to protect this information, given that it is a widely used agreement with which market participants in the West have had experience and which they can execute if they need to view the information protected by the agreement. CAISO notes that it is the only effective WECC non-disclosure agreement available, and is thus consistent with the requirements to access other

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<sup>33</sup> See July 2014 Order, 148 FERC ¶ 61,089 at PP 63-64.

<sup>34</sup> *Id.*

protected data in CAISO's tariff. Contrary to Powerex's and WPTF's assertions, the WECC universal non-disclosure agreement does not make it impossible for market participants with legitimate transparency concerns to access this information; any market participant that fulfills the requirements of the WECC universal non-disclosure agreement may execute the agreement and would thus be able to access the protected information. Certain entities that do not have a reliability function must fulfill additional requirements set out in the agreement;<sup>35</sup> however, we find that this is an appropriate safeguard to ensure that the protected data is not used for commercial purposes.

The Commission orders:

CAISO's September 2, 2014 compliance filing is hereby accepted, effective October 1, 2014, as requested.

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.

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<sup>35</sup> Any entity that wishes to become a party to the agreement may do so if it has a reliability or operational reason to access the data. Other entities are still able to become parties to the agreement, but must obtain consent from the pre-existing parties to the agreement.