157 FERC ¶ 61, 091
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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

California Independent System Operator Corporation — Docket No. ER16-1983-000

ORDER ON PROPOSED TARIFF REVISIONS

(Issued November 8, 2016)

1. On June 21, 2016, pursuant to section 205 of the Federal Power Act (FPA),[1] the California Independent System Operator Corporation (CAISO) submitted proposed tariff revisions to modify the local market power mitigation procedures used in its five-minute real-time dispatch process (June 21 Filing). The tariff revisions are intended to improve the accuracy of such mitigation, addressing situations where CAISO currently under-mitigates in the real-time dispatch process, which produces distinct unit dispatches and locational market prices for discrete five-minute increments. In this order, we accept CAISO's proposed tariff modifications, effective January 30, 2017, as requested.

I. Background

2. CAISO explains that, to protect against the exercise of seller-side market power resulting from insufficient or concentrated control of supply offers within a local area, its markets employ automated market power mitigation measures.[2] To do this, CAISO evaluates congestion patterns for uncompetitive transmission paths in an advisory, non-binding run for a particular market interval, which is known as the mitigation run, in order to determine whether a particular binding market run will use mitigated supply offers.

3. CAISO currently does not conduct a distinct mitigation run for each five-minute real-time dispatch interval. Instead, for the real-time market, CAISO conducts

[1] 16 U.S.C. § 824d (2012).

[2] June 21 Filing at 2-3.

incremental mitigation runs for each 15-minute real-time unit commitment interval within an hour.[3] Mitigation triggered for a 15-minute real-time unit commitment interval also applies for each of the constituent five-minute real-time dispatch intervals within that 15-minute market interval. Mitigation also carries over for the remaining real-time unit commitment and dispatch intervals for that hour.[4]

4. CAISO states that, in practice, its market power mitigation procedures have worked relatively well. However, CAISO further states that its current approach assumes that the conditions predicted in the non-binding mitigation run likely will prevail in the binding market run.[5] According to CAISO, the larger the divergence between the two runs, the greater potential there is to erode the overall efficacy of the mitigation procedures. CAISO states that, in practice, the non-binding mitigation run starts 52.5 minutes before each real-time unit commitment interval, and the binding market run starts 37 minutes before each such interval.[6] CAISO explains that the divergence can occur in both directions, creating what is essentially either a false positive or a false negative. According to CAISO, under-predicted congestion may result in artificially high prices and provide opportunities for suppliers to exercise local market power under CAISO's current market power mitigation procedures.[7] Conversely, while over-predicted congestion may not necessarily harm market efficiency, CAISO asserts that it is nevertheless a form of market intervention that preferably should be limited.[8]

5. CAISO explains that over- or under-predicted congestion can occur for several reasons, all of which relate to the fact that the non-binding mitigation run and the binding market run can reflect different congestion patterns. First, if the congestion in the mitigation run triggers mitigation in the market run, the mitigation measures result in increased production on the downstream side of the constraint so that the constraint is no longer binding. Second, changes to inputs to the market optimization, along with new information becoming available, create congestion discrepancies in such inputs as load

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[3] These 15-minute real-time unit commitment intervals produce the real-time unit commitment, which represent the last adjustment to the Day-Ahead commitment before real time dispatch.

[4] *Id*. at 3.

[5] *Id*. at 4.

[6] *Id.* at 3.

[7] *Id*. at 4.

[8] *Id*. at 4-5.

forecasts, transmission line limits, and base schedules for Energy Imbalance Market resources. Third, the real-time unit commitment and real-time dispatch solve slightly different optimization problems where, even if the inputs to the models were identical, the differences in the optimizations can lead to different congestion patterns showing up in the mitigation run and the market run. Finally, there is an inherent limitation in the optimizing algorithm, where the value of the objective function is similar across a range of solutions, so there are multiple possible acceptable solutions to the market optimization that can result in different congestion patterns.[9]

II. CAISO's Proposal

6. To address the potential for under-mitigation under its existing market power mitigation measures, CAISO proposes tariff revisions to add a new mitigation run for each real-time dispatch interval. Currently, CAISO applies the mitigation triggered for a 15-minute real-time unit commitment interval to each of its three constituent real-time dispatch intervals without further examination.[10] Under the proposed tariff revisions, CAISO will perform an additional mitigation run for the first of those constituent real-time dispatch intervals to determine whether (1) to mitigate any bids that *were not* subject to mitigation due to the initial mitigation run in the real-time unit commitment process or (2) to mitigate further any bids that *were* subject to mitigation due to the initial mitigation run in the real-time unit commitment process.[11]

7. CAISO explains that each mitigation run from the real-time unit commitment and dispatch processes could result in incremental mitigation but, once a bid is mitigated, that mitigation will carry through for the balance of that 15-minute real-time unit commitment period in the market.[12] Thus, to perform additional mitigation runs for the second and third real-time dispatch intervals, CAISO would consider the results of the mitigation runs for the first and second real-time dispatch intervals, respectively.

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[9] *Id*.

[10] *Id*. at 6.

[11] CAISO states that proposed tariff section 34.1.5.4 establishes that the inputs considered for the mitigation run for the first five-minute real-time dispatch interval would be the final bid set used for the financially binding 15-minute market run corresponding to that real-time unit commitment interval, including any mitigated bids from the real-time unit commitment interval. *Id.*

[12] *Id*.

8. CAISO proposes that, while any mitigation triggered in the initial real-time unit commitment mitigation run would continue to apply to all real-time unit commitment and dispatch intervals remaining in the hour, mitigation triggered under the proposed real-time dispatch mitigation runs would apply only to any five-minute intervals remaining in the 15-minute real-time unit commitment interval.[13] Among other things, CAISO explains that a unit that was mitigated for the real-time unit commitment process but not mitigated for the real-time dispatch process could be put in the untenable position of having to buy back its 15-minute market schedule at a loss, which may lead to that unit seeking bid cost recovery. CAISO also states that, if a unit could be mitigated in the first real-time dispatch interval, unmitigated in the second, then mitigated again in the third, the unit's dispatch level could be highly variable within a short timeframe, potentially causing operational stress for the unit. CAISO concludes that maintaining mitigation across the real-time dispatch intervals within a given real-time unit commitment interval will help to prevent that from occurring.

9. CAISO states that this proposal is just and reasonable because it would reduce the frequency of instances where the mitigation process under-predicts congestion, resulting in more effective mitigation of local market power.[14] By creating a distinct mitigation run for each real-time dispatch interval based on the results of certain mitigation run(s) that preceded it, CAISO asserts that its proposal will apply real-time dispatch mitigation at a more granular level and reduce unnecessary lag time between the mitigation and market runs.[15] Lastly, CAISO states that both the increased granularity and reduced latency in the real-time dispatch mitigation will reduce the number of real-time dispatch intervals in which market-power-creating congestion goes unmitigated.[16]

10. CAISO requests that the Commission issue an order by December 1, 2016 accepting its proposed tariff revisions effective January 30, 2017. CAISO explains that it is requesting an order approximately two months in advance of the implementation date to provide market participants with regulatory certainty regarding the initiative.

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[13] *Id*. at 6-7.

[14] *Id*.

[15] In contrast, under the existing process, CAISO conducts real-time dispatch mitigation for all three real-time dispatch intervals within a real-time unit commitment interval based on a real-time unit commitment advisory run that is conducted as much as 52.5 minutes before the operating interval. *Id*.

[16] *Id*.

11. CAISO seeks waiver of the Commission's notice requirements set forth in section 35.3(a)(1) of the Commission's regulations, 18 C.F.R. § 35.3(a)(1), because the requested effective date is more than 120 days after CAISO's filing. CAISO asserts that good cause exists for both the waiver and the issuance of a Commission order by December 1, 2016. Specifically, CAISO explains that the market power mitigation enhancements that would be implemented by the proposed tariff amendments may be relevant to market-based rate filings proposed by potential new EIM Entities. According to CAISO, knowing whether or not these enhancements are approved well in advance of their proposed implementation date would promote regulatory certainty.

III. Notice and Responsive Pleadings

12. Notice of CAISO's June 21 Filing was published in the *Federal Register*, 81 Fed. Reg. 42,341 (2016), with interventions and protests due on or before July 12, 2016. Timely motions to intervene were filed by PacifiCorp; NRG Power Marketing LLC and GenOn Energy Management, LLC; California Department of Water Resources State Water Project; Northern California Power Agency; Modesto Irrigation District; the City of Santa Clara, California, and the M-S-R Public Power Agency; the Cities of Anaheim, Azusa, Banning, Colton, Pasadena and Riverside, California; Southern California Edison Company (SoCal Edison); and Powerex Corp. SoCal Edison filed timely comments, and Pacific Gas and Electric Company (PG&E) filed a timely motion to intervene and comments. On July 14, 2016, Puget Sound Energy, Inc. (Puget) filed a motion to intervene out of time. CAISO filed an answer on July 27, 2016.

13. SoCal Edison and PG&E support CAISO's proposed modifications. SoCal Edison believes that CAISO's proposal will improve accuracy in the real-time dispatch process and strongly supports CAISO's commitments to thoroughly test the new feature and to closely monitor any real-time market impacts.[17] Similarly, PG&E states that it supports CAISO's design principles and is appreciative of CAISO's attempts to conduct rigorous pre-deployment testing, and its commitment to continue monitoring the performance of the new process after the go-live date.

14. PG&E asserts that CAISO should be required to detail a reversion plan[18] in case CAISO encounters unforeseen performance issues or high levels of failed runs while

[17] SoCal Edison Comments at 1.

[18] PG&E has not defined what it means by a reversion plan, but presumably is referring to a pre-established process for reverting to currently-effective mitigation practices in the event that the proposed mechanism fails to perform adequately, as measured against predefined performance metrics.

performing its monitoring duties.[19] Specifically, PG&E requests that the Commission require CAISO to submit a compliance filing where it outlines in the tariff a reversion plan and the metrics (e.g., a performance threshold) that CAISO would use to determine if the reversion plan should go into effect. PG&E states that such a reversion plan would further solidify CAISO's response to various market participants who have expressed performance concerns over CAISO's plan to move the local market power mitigation process into the binding real-time dispatch market run.[20]

15. In its answer, CAISO asserts that filing a reversion plan as requested by PG&E would not be a meaningful exercise or hold any benefit for CAISO or market participants. According to CAISO, PG&E's request puts CAISO in the impossible position of anticipating the reasons why the new real-time dispatch mitigation approach would clear all of the market simulation and quality assessment processes yet perform sub-optimally upon implementation. CAISO states that, if it was aware of such issues in its pre-deployment testing, it would have already fixed them before implementation. CAISO also asserts that proposing such a reversion plan presupposes that implementation challenges justify reversion to the prior approach. According to CAISO, if its proposal is accepted as just and reasonable, then the imperative would be to fix the new system to make sure the new approach works consistent with the Commission-approved tariff requirements, rather than abandon it for the old approach that has been justifiably replaced.[21]

IV. Discussion

A. Procedural Matters

16. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2016), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

17. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d) (2016), the Commission will grant Puget's late-filed motion to intervene given its interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

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[19] PG&E Comments at 3.

[20] *Id*.

[21] *Id*. at 3.

18. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2016), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We will accept CAISO's answer because it has provided information that assisted us in our decision-making process.

B. Substantive Matters

19. We find that CAISO's proposed tariff revisions are just and reasonable and therefore accept them effective January 30, 2017, as requested. Specifically, we find that CAISO's proposal will improve the accuracy and effectiveness of CAISO's local market power mitigation process by addressing situations where CAISO currently under-mitigates in the real-time dispatch process. We agree with CAISO that improving the granularity of the mitigation process and improving the information that goes into the market runs will result in a more accurate representation of real-time system conditions that should enhance the overall measure of competitiveness of the market. We also agree with CAISO that carrying over mitigation from the real-time unit commitment process to the real-time dispatch process, and carrying over real-time dispatch mitigation to any five-minute dispatch intervals remaining within a given 15-minute real-time unit commitment interval will result in more effective mitigation of local market power, address identified operational concerns, avoid uplift charges, and result in smoother unit dispatch.[22]

20. We are not persuaded to require CAISO to submit a reversion plan as PG&E requests. Unlike the limited circumstances in which the Commission has previously required or accepted the submittal of reversion plans,[23] such as the launch of a new market where there was a risk of a significant operations failure, we find that such a risk has not been presented here. We find that the proposal itself does not introduce excessive risk to market operations, and the risks associated with implementation should be limited by appropriate testing in market simulations. To the extent CAISO encounters unforeseen performance issues following implementation of its proposed tariff modifications, CAISO may submit a proposal under section 205 of the FPA to address such issues.

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[22] *See* June 21 Filing at 6-8.

[23] *See, e.g.*, *Southwest Power Pool, Inc.*, 144 FERC ¶ 61,224, at PP 10, 403 (2013) (conditionally accepting a reversion plan to address system operations in the event of a severe operations failure associated with the launch of the Integrated Marketplace); *Midwest Indep. Transmission Sys. Operator, Inc.*, 110 FERC ¶ 61,049, at P 37 (2005) (conditionally accepting a reversion plan to address the possibility of a catastrophic systems failure during the initial start-up phase of its Day 2 energy markets).

The Commission orders:

CAISO's proposed tariff revisions are hereby accepted for filing, effective January 30, 2017, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.