

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

California Independent System) Docket No. ER23-2537-000
Operator Corporation)

**ANSWER OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

The California Independent System Operator Corporation ("CAISO") respectfully submits its answer¹ to the comments filed by Southern California Edison Co. ("SCE") in the above-identified docket, in which the CAISO proposes to implement two enhancements for co-located resources. SCE seeks clarification on the CAISO's proposed tariff revisions to Section 34.13.3, which allows co-located storage resources to deviate from any dispatch instructions that would conflict with their charging constraints unless they have a regulation award or exceptional dispatch. The CAISO proposed the charging constraints to ensure the storage resources can charge from their co-located intermittent resources for tax incentives, power purchase agreements, and public policy. Providing charging constraints as a biddable parameter helps ensure dispatch instructions are achievable, mitigating the risk of deviations. Section 34.13.3 also maintains effective tariff language that allows for storage resources to deviate from dispatch where a co-located intermittent resource produces above its dispatch instructions due to weather that would put the resources' combined output beyond their interconnection capacity, or otherwise threaten reliability or safety. Such deviations only

¹ The CAISO submits this answer pursuant to Rule 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213. Capitalized terms not otherwise defined herein have the meanings set forth in the Master Definitions Supplement, Appendix A to the CAISO tariff.

may occur through proper control technologies that ensure the combined output of all co-located resources does not exceed the interconnection capacity. The CAISO clarifies that the tariff revisions are correct as proposed in the CAISO's filing, and the CAISO respectfully requests that the Commission approve them as just and reasonable.

As the CAISO explained in its transmittal letter, storage resources may need to deviate from dispatch instructions if their co-located intermittent resources'² output is slightly less than forecasted, like for unexpected cloud cover, and a charging instruction may exceed the intermittent resource's output. The storage resources would still be subject to imbalance energy for the deviation, but would not be subject to the other penalties in the CAISO tariff.³ The CAISO does not expect these deviations to be frequent or significant, but intends to monitor resource performance with the charging constraints.

Proposed Section 30.5.6.3 also states that charging constraints will not apply in operating intervals where the storage resources receive an ancillary service award to provide regulation, where the storage resources elect to use regulation energy management, or where the CAISO must issue an Exceptional Dispatch. Because charging constraints do not apply in those circumstances, storage resources must follow all dispatch instructions. In other words, there is no allowance for the limited deviations for charging constraints. The CAISO depends on storage resources' following their regulation awards for reliability, and requiring the optimization to balance the storage resources' real-time regulation signal—based on the frequency of the grid at that

² Likely solar or wind.

³ See Section 34.13.2 of the CAISO tariff.

moment— against the output of the co-located intermittent resources would be too complex and risk reliability. Unlike reserve awards, which are converted to real-time energy awards if called upon, resources meet regulation awards by following an instantaneous automatic generation control signal.

SCE asks the CAISO to clarify how the CAISO enforces these proposed provisions. All implementation and software documentation is available on the CAISO website.⁴ The CAISO website includes all business requirement specifications mapped to the tariff revisions, market simulation scenarios, and associated training presentations. The business requirement specifications for these enhancements⁵ explain that the optimization will only use charging constraints in the absence of day-ahead regulation awards or exceptional dispatches. However, if the storage resource receives a regulation award or exceptional dispatch, the optimization will disregard the scheduling coordinator’s submission of charging constraints, and use its Master File operating range instead.⁶ If scheduling coordinators wish to ensure their charging constraints will apply, they may forego submitting energy bids with charging constraints *and* regulation bids simultaneously.

SCE also asks for clarification about the CAISO’s proposed removal of a sentence in Section 34.13.3 that stated, “A Co-located Resource that is a Non-Generator Resource may not deviate from a Dispatch Instruction pursuant to this section if it is providing Ancillary Services in the same Dispatch Interval.” SCE’s

⁴ <http://www.aiso.com/informed/Pages/ReleasePlanning/Default.aspx>.

⁵ <http://www.aiso.com/Documents/BusinessRequirementsSpecificationEnergyStorageEnhancementsTrack2v.pdf>.

⁶ Which reflects its actual PMin and full operating/charging range.

comments overlook that the CAISO included a description of this change in its transmittal letter: “Currently this provision prohibits deviations where the resource has received any ancillary service award. The CAISO has struck that provision because it is now overly broad, and now limited to regulation awards. This clarification avoids conflicting exceptions.”⁷

Co-located storage resources thus have two limited situations where they can deviate from dispatch instructions. First, as proposed in this proceeding, they may deviate up to avoid grid-charging in contravention of their charging constraint, unless they have a regulation award or exceptional dispatch. The CAISO’s optimization should avoid the need to deviate in the first place, but the CAISO has included the express exception out of an abundance of caution. Second, as established in the CAISO tariff since 2021,⁸ storage resources may deviate down due to weather that would put the resources’ combined output beyond their interconnection capacity, or otherwise threaten reliability or safety.⁹ The CAISO has removed the tariff language creating an exception to this second situation because it was overly broad. The CAISO also has not observed situations where co-located storage resources have needed to rely upon it. Even if they did, any deviation would be automatically performed through control

⁷ CAISO Transmittal Letter at p. 6 n. 26.

⁸ *California Independent System Operator Corp.*, Letter Order, Docket No. ER21-843-000 (March 9, 2021); Section 34.13.3 of the CAISO tariff.

⁹ As the CAISO explained in 2021, this situation could occur when an intermittent resource produces energy above its dispatch instruction because meteorological conditions differ from what was forecast, and the co-located energy storage resource produces less energy than its dispatch instruction to ensure the combined resources’ output does not exceed their shared interconnection service capacity. The energy storage resource may reduce output to compensate for the over-performing intermittent resource based on the control technologies installed to ensure safety and reliability at the point of interconnection.

technologies to maintain safety and reliability and avoid violating the resource's generator interconnection agreement.

The CAISO notes that it will continue to monitor co-located resources' performance and any deviations from dispatch. The CAISO has not proposed to amend its existing tariff provision in Section 27.13 of the tariff that gives the CAISO authority to monitor deviations from dispatch and amend or remove aggregate capability constraints if the deviations are significant, frequent, or unwarranted. SCE cites various CAISO policy papers and draft tariff revisions posted for stakeholder consideration before this proceeding. These documents only demonstrate the CAISO's iterative approach to refine policy and tariff language. They are not germane to whether the CAISO's proposed tariff revisions are just and reasonable, and SCE does not allege otherwise. As storage resources and co-located configurations proliferate rapidly, the CAISO will continue to monitor their performance and revise its tariff to optimize market performance and maintain reliability. The Commission should approve the CAISO's proposed tariff revisions as just and reasonable.

Conclusion

For the reasons explained above and in this proceeding, the CAISO respectfully requests that the Commission accept the proposed tariff revisions as filed.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon all of the parties listed on the official service list for the above-referenced proceeding, 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, CA this 6th day of September, 2023.

Is/ Anna Pascuzzo
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