UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	**)** **)**	**Docket No. ER21-1536-000**

FILING OF INFORMATIONAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

Pursuant to section 29.34(l)(5) of its tariff, the California Independent System Operator Corporation (CAISO) submits this filing as an informational report. This informational report explains and supports the CAISO's decision to exercise its authority under that tariff provision to disable the uncertainty requirement that would otherwise be performed as part of the Western Energy Imbalance Market (WEIM) resource sufficiency evaluation (RSE) capacity test.

I. Background

In early 2021, the CAISO filed and the Commission accepted a tariff amendment in this proceeding (Tariff Amendment) to implement several market enhancements to ensure the CAISO has appropriate operational tools and market rules to address tight supply conditions.[1] This tariff amendment went into effect on June 15, 2021.[2] The Tariff Amendment included revisions to add to the capacity test component of the RSE, an uncertainty requirement that captures a balancing authority area's net load variability.[3] The CAISO recognized, however,

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1 *Cal. Indep. Sys. Operator Corp.*, 175 FERC ¶ 61,160 (2021).

2 *See* CAISO Informational Filing of Effective Date of Summer 2021 Market Enhancements, Docket No. ER21-1536-000 (June 17, 2021).

3 The RSE ensures that each balancing authority area participating in the WEIM has sufficient capacity and flexibility to meet forecasted demand, thereby minimizing inequitable resource "leaning" between balancing authority areas. CAISO tariff sections 29.34(k)-(n). One

that including the uncertainty requirement might cause balancing authorities in the WEIM area to fail the capacity test more frequently than the reasonably expected results (*i.e.*, if data indicated that economic transfers are being unduly limited in non-tight supply conditions). Therefore, the CAISO included a safeguard in new tariff section 29.34(l)(5) to allow the CAISO to disable the uncertainty requirement in the capacity test portion of the RSE if the CAISO observed specified conditions during the first 12 months after this uncertainty requirement went into effect.[4]

Tariff section 29.34(l)(5) states that the CAISO can disable the uncertainty requirement three business days or more after issuing a market notice, if the frequency or magnitude of capacity test failures supports a conclusion that the results were unintended and caused by including the uncertainty requirement. The tariff provisions require the CAISO to submit an informational report within 30 days of disabling the uncertainty requirement that explains and supports the CAISO's action. The tariff provisions specify that the uncertainty requirement will remain disabled unless and until the Commission authorizes otherwise.[5]

In its order accepting the Tariff Amendment, the Commission found that providing the CAISO with "authority to disable the inclusion of the uncertainty requirement will serve as a reasonable safety net in the event the uncertainty

component of this evaluation is the capacity test. This test applies to all WEIM balancing authority areas and validates that a balancing authority area possesses sufficient supply to meet its load and export obligations. CAISO tariff section 29.34(l).

4 Transmittal letter for Tariff Amendment at 28-29.

5 CAISO tariff section 29.34(l)(5). *See also* transmittal letter for Tariff Amendment at 29.

requirement causes unintended RSE failures."[6] The Commission went on to "find that CAISO has adequately specified the conditions under which it will disable the feature in the Tariff and that its proposal for a further informational filing to the Commission on the issue will provide additional transparency to market participants."[7]

II. Filing of Informational Report

On December 16, 2021, the CAISO issued a revised draft final proposal in its ongoing stakeholder initiative regarding WEIM Resource Sufficiency Evaluation Enhancements (Revised Draft Final Proposal).[8] The Revised Draft Final Proposal explained that:

> Stakeholders raised concerns regarding the calculation of the uncertainty requirements that are used as inputs to the capacity test. This includes the uncertainty requirements for variable energy resources and load, i.e. net-load uncertainty. The current calculation, using the histogram methodology, has not created an increase in test accuracy that corresponds to its increase in test failures. At this time the CAISO proposes under its existing FERC authority to remove the net-load uncertainty calculation from the capacity test.[9]

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[6] *Cal. Indep. Sys. Operator Corp.*, 175 FERC ¶ 61,160 at P 50.

[7] *Id. See also id.* at P 53 ("[W]e find that CAISO's proposed Tariff authority to permit it to disable the feature if certain conditions arise and submit a filing to the Commission on the issue should provide . . . assurance that stakeholders will be informed if the test is not operating as expected.").

[8] The Revised Draft Final Proposal is available at http://www.caiso.com/InitiativeDocuments/RevisedDraftFinalProposal-EIMResourceSufficiencyEvaluationEnhancements.pdf.

[9] Revised Draft Final Proposal at 31-32 (citing CAISO tariff section 29.34(l)(5)). The CAISO stated that it "plans to update the net-load uncertainty calculation" and provided some potential options for doing so. *Id.* at 32. *See also* CAISO Board of Governors and EIM Governing Body Memorandum, Decision on Resource Sufficiency Evaluation Enhancements – Phase 1, February 2, 2022, at p.4 (noting that the interaction of inaccuracies in the net-load uncertainty calculation and the capacity test framework has produced spurious capacity test failures and will be removed) (Board Memorandum); and Market Surveillance Committee, Opinion on Resource Sufficiency Evaluation Enhancements, draft dated January 30, 2022, at pp. 4-12

Consistent with these findings in the Revised Draft Final Proposal, the CAISO is submitting the following information as the report required to disable the uncertainty requirement in the capacity test portion of the RSE.

During the policy development that lead to the implementation of the net-load uncertainty requirement in the capacity test, many stakeholders raised concerns regarding the proposed calculation of the uncertainty requirement. The concerns are described by the CAISO Market Surveillance Committee (MSC) in its March 8, 2021 opinion on the Market Enhancements for 2021 Summer Readiness.[10] In summary, the net-load uncertainty that is implemented in the RSE is calculated using the "histogram" methodology which may not serve as an accurate predictor of future net-load uncertainty. This methodology creates a forecast of future uncertainty considering the net forecast error for each hour over rolling 20-day and 40-day periods for weekends and weekdays respectively. This retroactive predication of future uncertainty, without considering the forecast output of variable energy resources as compared to their maximum output or the output when the observations took place, has the potential to create

(noting statistical and other issues associated with application of the net-load uncertainty requirement to the capacity test) (Final 2022 MSC Opinion). The Board Memorandum is available at: https://www.caiso.com/Documents/Decision-Western-EIM-Resource-Sufficiency-Evaluation-Enhancements-Phase-1-Memo-Feb-9-2022.pdf and the Final 2022 MSC Opinion is available at: http://www.caiso.com/Documents/MSCFinalOpinionon EIMResourceSufficiencyEvaluationEnhancements-Phase1.pdf.

[10] MSC Opinion on Market Enhancements for 2021 Summer Readiness (Mar. 8, 2021). Available at http://www.caiso.com/Documents/MSCOpinionon MarketEnhancementsfor2021SummerReadiness-Mar8_2021.pdf.

unreasonably high requirements for net-load uncertainty given the actual output of the variable resources that drive future uncertainty.

The CAISO recognized the existing methodology used to calculate uncertainty had the potential to overestimate the uncertainty requirement, and that extension of this methodology to the capacity test could produce adverse outcomes. Nonetheless, the CAISO determined on balance it was a feature worthy of implementation. This decision was partially predicated on the concerns being addressed through the implementation of the quantile regression methodology as part of the flexible ramping product refinements implementation, which was scheduled for implementation during the fall of 2021. This new methodology for calculating uncertainty considered real-time pre-dispatch forecast of the elements that drive net-load uncertainty, as well as historic observations to derive a measure of uncertainty that the CAISO understands to be a more accurate, although still imperfect, method for determining uncertainty.[11]

During the summer of 2021 following the implementation of the uncertainty requirement within the capacity test, the CAISO Department of Market Monitoring (DMM) observed a significant increase in capacity test failures.[12] Stakeholders through their comments in the stakeholder process on Resource Sufficiency

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[11] Flexible Ramping Product Refinements Initiative Appendix C – Quantile Regression Approach. Available at http://www.caiso.com/InitiativeDocuments/AppendixC-QuantileRegressionApproach-FlexibleRampingProductRequirements.pdf.

[12] CAISO Department of Market Monitoring Resource Sufficiency Evaluation in the Energy Imbalance Market Report for July-August 2021, pp 12-13. Available at: http://www.caiso.com/Documents/Report-on-Resource-Sufficiency-Evaluation-in-the-Energy-Imbalance-Market-for-July-and-August-2021-Sep-23-2021.pdf.

Evaluation Phase 1 Enhancements raised concerns regarding the increased volume of failures potentially being related to unreasonably high requirements derived from the histogram methodology that does not consider forecast output.[13] These concerns are consistent with the MSC concern that the existing calculation of the histogram methodology within the capacity test of the resource sufficiency evaluation contains flaws.[14] Ultimately, the MSC summarized all of the statistical issues and its concerns with the net-load uncertainty requirement in its recent opinion on the proposed RSE Phase 1 Enhancements.[15]

Given the delay in the implementation of the quantile regression methodology, stakeholder concerns regarding the accuracy of any available replacement methodology, the increase in test failures documented by DMM, and the statistical and other concerns summarized by the MSC, the CAISO has determined it prudent to suspend the application of this aspect of the uncertainty test in RSE's capacity test under its existing tariff authority, rather than continuing to allow this potential issue to persist. The CAISO will look to determine a more appropriate method for calculating uncertainty for the capacity test through its continuing stakeholder process to enhance the RSE.[16]

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[13] Joint Comment of EIM Entities on the EIM Resource Sufficiency Evaluation Enhancements Draft Final Proposal, pp. 5-6. Available at: https://stakeholdercenter.caiso.com/Comments/AllComments/57d5daa4-1c8a-47e3-8f9b-cb3127ea3a51#org-90eb5a96-be16-43ce-9c84-c1e461ff9022.

[14] *See supra* note 10.

[15] MSC Opinion on Energy Imbalance Market (EIM) Resource Sufficiency Evaluation Enhancements (February 3, 2022), pp. 4-13. Available at: http://www.caiso.com/Documents/MSCFinalOpinionon EIMResourceSufficiencyEvaluationEnhancements-Phase1.pdf.

[16] The CAISO has commenced Phase 1b of the RSE enhancements initiative and will proceed through a Phase 2 of the initiative, providing ample opportunity for consideration of

As required by tariff section 29.34(l)(5), the CAISO issued a market notice on February 8, 2022 that initiated the CAISO's removal of the uncertainty requirement effective February 15, 2022. Copies of the market notices are provided as Attachment A to this filing.

Respectfully submitted,

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Dated: February 25, 2022

improved methods of accounting for uncertainty in the capacity test. Information is available at https://stakeholdercenter.caiso.com/StakeholderInitiatives/EIM-resource-sufficiency-evaluation-enhancements.

Attachment A – Market Notices

Informational Report to Disable Uncertainty Requirement

California Independent System Operator Corporation

February 25, 2022

Notice

February 8, 2022

REQUESTED ACTION
Information Only

CATEGORIES
Markets
Operations

WEIM Resource Sufficiency Evaluation: Suspension of Net-Load Uncertainty Adder from the Capacity Test in Effect 2/12/22

MESSAGE
Effective Feb. 12, 2022, the California ISO, under its existing tariff authority in section 29.34(l)(5), will be suspending the net-load uncertainty adder from the capacity test within the Western Energy Imbalance Market (WEIM) resource sufficiency evaluation initiative.

Net-load uncertainty was added to the resource sufficiency evaluation's capacity test's requirement as part of the market enhancements for 2021 summer readiness. While the addition of uncertainty had stakeholder support, concerns were raised regarding the existing methodology for calculating uncertainty; these concerns remain unresolved. With broad stakeholder support as detailed in the comments received in the WEIM resource sufficiency evaluationenhancements phase 1 initiative, the ISO is moving under its existing authority to suspend this provision from the capacity test. The ISO will look to reconsider net-load uncertainty within the capacity test in a future phase of the resource sufficiency evaluation enhancements initiative.

CONTACT INFORMATION
ISO Customer Service at ISOClientRepresentatives@caiso.com or 916-608-7320

California ISO

Notice

February 14, 2022

REQUESTED ACTION
Information Only

CATEGORIES
Markets
Operations

Update - WEIM Resource Sufficiency Evaluation: Suspension of Net-Load Uncertainty Adder from the Capacity Test in Effect 2/15/22

MESSAGE
The California ISO, under its existing tariff authority in **section 29.34(l)(5)**, will be suspending the net-load uncertainty adder from the capacity test within the Western Energy Imbalance Market (WEIM) resource sufficiency evaluation on the new effective date of Feb. 15, 2022. The ISO may issue further notices on a potential revised expected effective date, should testing on the implementation deem a revised date necessary.

Net-load uncertainty was added to the resource sufficiency evaluation's capacity test's requirement as part of the Market Enhancements for 2021 Summer Readiness initiative. While the addition of uncertainty had stakeholder support, concerns were raised regarding the existing methodology for calculating uncertainty; these concerns remain unresolved. With broad stakeholder support as detailed in the comments received in the WEIM Resource Sufficiency Evaluation Enhancements Phase 1 **initiative**, the ISO is moving under its existing authority to suspend this provision from the capacity test. The ISO will look to reconsider net-load uncertainty within the capacity test in a future phase of the WEIM Resource Sufficiency Evaluation Enhancements initiative.

CONTACT INFORMATION
ISO Customer Service at **ISOClientRepresentatives@caiso.com** or 916-608-7320

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, pursuant to 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 25th day of February, 2022.

/s/ Jacqueline Meredith
Jacqueline Meredith