



California ISO

California Independent System Operator Corporation

February 6, 2025

The Honorable Debbie-Anne Reese
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

**Re: California Independent System Operator Corporation
Docket No. ER25-____-000**

**Tariff Amendments to Implement Order No. 881 – Managing
Transmission Line Ratings**

Dear Secretary Reese:

The California Independent System Operator Corporation (CAISO) submits this tariff amendment¹ in further compliance with Order No. 881, which the Commission issued to improve the accuracy and transparency of electric transmission line ratings.² As described herein, these tariff revisions are consistent with or superior to the directives in Order No. 881. Each set of the tariff revisions is discrete, severable, and not interdependent with the other parts of the proposal. The CAISO requests the Commission evaluate the justness and reasonableness of the revisions separately.

The CAISO respectfully requests the Commission issue an order accepting the proposed tariff revisions by April 15, 2025.³ To provide implementation flexibility,

¹ The CAISO submits this filing pursuant to section 205 of the Federal Power Act (FPA), 16 U.S.C. § 824d, and Part 35 of the Commission's Regulations, 18 C.F.R. Part 35. Capitalized terms not otherwise defined herein have the meanings set forth in the CAISO tariff, and references to specific sections, articles, and appendices are references to sections, articles, and appendices in the current CAISO tariff and revised or proposed in this filing, unless otherwise indicated.

² *Managing Transmission Line Ratings* 177 FERC ¶ 61,179 (2021); *Order Addressing Arguments Raised on Rehearing and Clarification*, 179 FERC ¶ 61,125 (Order No. 881-A) (2022).

³ As explained in a separate motion filed in Commission docket ER22-2362 on January 27, 2025, the CAISO is targeting implementation of Order No. 881 in 2026.

however, the CAISO has requested these tariff revisions be effective subject to the CAISO filing a notice with the Commission no less than seven days prior to the actual effective date.⁴

I. Introduction

Order No. 881 establishes requirements for public utility transmission providers to use ambient adjusted ratings and seasonal ratings in connection with transmission service they offer. In markets administered by regional transmission organizations (RTOs) and independent system operators (ISOs), Order No. 881 requires RTOs/ISOs to implement systems and procedures necessary to allow transmission owners to update transmission line ratings electronically at least hourly. Transmission providers must use uniquely determined emergency ratings for contingency analysis in the operations horizon and in post-contingency simulations of constraints and implement specific transparency reforms.

In addition to the functions it performs for its balancing authority area, the CAISO also serves as the market operator for the Western Energy Imbalance Market (WEIM), which provides real-time market services to participants throughout the Western Interconnection. In addition, the CAISO is working to deploy the Extended Day-ahead Market (EDAM) for WEIM entities seeking day-ahead market participation. Implementing Order No. 881 will include integrating hourly transmission line ratings into these markets.

The CAISO submitted a filing in July 2022 that proposed tariff revisions to comply with Order No. 881. The Commission accepted the CAISO's Order No. 881 compliance filing, subject to further compliance.⁵ In June 2023, the CAISO submitted a filing in further compliance with Order No. 881, which the Commission accepted.⁶ The Commission accepted the CAISO's proposal to make its Order No. 881 tariff revisions effective no later than June 15, 2025, subject to filing a notice of the actual effective date of the tariff revisions within five business days of their implementation. The CAISO now seeks to revise specific elements of its Order No. 881 tariff.

As part of any order addressing these tariff revisions, the CAISO also requests the Commission rule on the CAISO's motion for extension of time to

⁴ The CAISO has included an effective date of 12/31/9998 as part of the tariff records submitted in this filing. The CAISO will notify the Commission of the actual effective date of these tariff records in an eTariff submittal using Type of Filing code 150 – Report. The CAISO also respectfully requests the Commission grant waiver of the notice requirement of section 35.3(a)(1) of the Commission's regulations, 18 C.F.R. § 35.3(a)(1), to permit a potential effective date more than 120 days after this filing.

⁵ *Cal. Indep. Sys. Operator Corp.*, 183 FERC ¶ 61,037 (2023).

⁶ See Letter order issued December 13, 2023 in docket ER22-2632-001.

comply with Order No. 881 filed in docket ER22-2362 on January 27, 2025. In that motion, the CAISO requested an extension of time to implement its Order No. 881 tariff provisions up to and including December 17, 2026, subject to the CAISO filing a notice with the Commission seven days before the actual effective date. In that motion, the CAISO explained it is targeting an implementation date in the first or second quarter of 2026, but requested additional time out of an abundance of caution to address any unforeseen implementation delays. In addition, recognizing the CAISO's implementation is a necessary condition to support its participating transmission owners, EDAM entities, and WEIM entities, the CAISO requested an extension of time up to and including October 15, 2027, for the CAISO's participating transmission owners to implement their requirements under Order No. 881 and for public utility transmission providers participating in EDAM and WEIM to submit ratings for use in these markets that are consistent with Order No. 881. To the extent entities are ready to submit ratings prior to that date, the CAISO will support them doing so.

II. Proposed Tariff Revisions

As work has progressed to implement Order No. 881, the CAISO has identified additional changes to its Order No. 881 tariff. These tariff revisions clarify or change rules regarding (1) communication protocols for the submission of transmission line ratings for use in the day-ahead and real-time markets; (2) access to ratings used in the markets as well as participating transmission owners' transmission line rating methodologies; (3) the timing of when entities must submit ratings in advance of the day-ahead and real-time market; (4) use of hourly and seasonal ratings, if hourly ratings become unavailable; and (5) recognizing EDAM entities will submit hourly ratings for use in the day-ahead and real-time markets. These changes are consistent with or superior to the directives of Order No. 881 and will support the CAISO's compliance with the Commission's order.

A. The CAISO is developing an application platform to accept and store transmission line ratings used in its day-ahead and real-time markets

The CAISO is working to develop new applications and processes to support Order No. 881 implementation. The CAISO has completed system changes to support the provision of transmission line ratings to its Energy Management System (EMS) via Inter-Control Center Communications Protocol (ICCP) and now has the capability to receive hourly ratings in its EMS via ICCP. In order to populate hourly ratings in its base market model for purposes of day-ahead market and real-time market clearing, the CAISO is actively working to deploy a custom version of webLineR to support the submission of ratings contemplated by Order No. 881. This application will support the submission to the CAISO of transmission line rating methodologies, seasonal ratings, emergency ratings, and hourly ratings consistent with the requirements of Order No. 881. The CAISO will pull ratings from this application through a data payload for use in its day-ahead and real-time markets.

The application will also serve as a repository to allow market participants and non-market participants access to the rating utilized by the CAISO.

In its July 2022 compliance filing in docket ER22-2362, the CAISO proposed to allow transmission owners to submit transmission line ratings using supervisory control and data acquisition (SCADA) capability, ICCP, or similar communication systems.⁷ This language tracked the Commission's *directive* in Order No. 881.⁸ In that filing, the CAISO explained that the communication systems entities use to submit transmission line ratings to the CAISO will need to interface with downstream systems the CAISO uses for reliability and market applications, including the CAISO's EMS. At the time, the CAISO had not yet designed such an interface and proposed to identify similar communications systems in an applicable Business Practice Manual or Operating Procedures.⁹ As explained, the CAISO is now actively working to deploy CAISO's custom version of webLineR to support the submission of transmission line ratings and store these ratings. This application will consume and store ratings submitted for use in the CAISO's base market model, which supports the day-ahead and real-time markets.

In Order No. 881, the Commission clarified that its final rule requires transmission owners to submit electronic transmission line rating data directly into an RTO's/ISO's EMS through SCADA or similar communication systems.¹⁰ Order No. 881 stated that ISOs/RTOs can use other electronic systems, such as Inter Control Center Communication Protocol to comply with this requirement, and RTOs/ISOs may propose to use such systems on compliance.¹¹ As described above, the CAISO has implemented functionality for transmission owners to submit transmission line ratings directly into the CAISO's EMS through ICCP, which will inform the CAISO's real-time operations.

The CAISO now proposes to clarify that for purposes of the day-ahead market and real-time market, relevant entities may submit ambient adjusted ratings using the communication systems as described in the applicable Business Practice Manual or Operating Procedures. The CAISO is developing webLineR to effect compliance with Order No. 881, and it intends to describe the application and user interface in its Business Practice Manuals.¹² Entities that interface with webLineR

⁷ See Proposed Appendix JJ to the CAISO tariff, Part 2.

⁸ Order No. 881 at P 179.

⁹ Transmittal letter for July 12, 2022 Compliance Filing at 19, footnote 31.

¹⁰ Order No. 881 at P 179.

¹¹ *Id.*

¹² See proposed redline changes to Appendix JJ, Part 2 submitted with this filing.

may use standard web services protocol, which is HTTP (Hypertext Transfer Protocol). Specifically, the CAISO proposes to use Representational State Transfer, which builds upon HTTP, to support the ability of web services and systems to communicate with each other. This approach is consistent with or superior to the directives in Order No. 881 because it will allow the CAISO to collect facility ratings required by Order No. 881 and then incorporate them into the day-ahead and real-time market and reliability applications more efficiently than if ratings were solely submitted to the CAISO's EMS through ICCP. Additionally, the webLineR application will support storing these ratings as required by Order No. 881 and serve to support the administration of the CAISO's reliability coordinator function in the Western Interconnection.

B. The CAISO proposes to clarify tariff rules for access to ratings used in its market processes as well as participating transmission owners' transmission line rating methodologies

In its July 2022 compliance filing, the CAISO proposed to comply with the transparency directives of Order No. 881 by revising section 6 of its tariff, which governs CAISO communications. The CAISO proposed that users meeting the requirements to access protected data under the CAISO tariff may also access the database of transmission line methodologies and transmission line ratings.¹³ The CAISO has existing processes to manage access to protected data.¹⁴ For the sake of clarity, the CAISO proposes to treat the database of Transmission Line Ratings, Transmission Line Rating methodologies, and related information as protected data under the CAISO tariff and state it will provide access to this information as described in existing tariff section 6.5.17. This clarification resolves any ambiguity of the steps market participants and non-market participants must take to secure access to this information.

C. The CAISO proposes to revise rules for the submission of ratings to the CAISO in advance of the day-ahead and real-time market

In its July 2022 compliance filing, the CAISO proposed to require transmission owners to submit hourly ambient adjusted ratings for use in the day-ahead market by 9 a.m. on the day before the applicable trading day to allow the CAISO time to incorporate this input into its market processes before running the day-ahead market starting at 10 a.m. The CAISO proposed to require transmission owners to submit any hourly ambient adjusted ratings for use in the real-time market five hours before the applicable trading hour to ensure transmission line ratings

¹³ See tariff section 6.5.17 entitled Transmission Line Ratings filed in Commission Docket ER22-2362 on July 12, 2022.

¹⁴ See e.g., CAISO webpage regarding agreements necessary to secure access to protected data: <https://www.caiso.com/legal-regulatory/contracts-agreements#nda>.

would remain constant over its short-term unit commitment process time horizon and throughout subsequent real-time market processes for that trading hour. The CAISO now proposes to eliminate these timelines. Using its webLineR application, the CAISO intends to pull data payloads before running its market processes in the day-ahead and real-time. This will enable the CAISO to use hourly ratings submitted closer in time to when a market process runs, thereby ensuring the markets reflect the most accurate ratings available. This will support greater efficiency and reliability in any market solution, especially in real-time, and is consistent with guidance the Commission provided in Order No. 881 regarding implementation of off ambient adjusted ratings.¹⁵

D. The CAISO proposes to refine its rules for using ratings in its market processes, if hourly ratings become unavailable

In its July 2022 compliance filing, the CAISO proposed that if it experienced a data failure in receiving hourly ambient adjusted ratings, the CAISO would use the seasonal rating for the relevant transmission line for the applicable trading hour. This approach is consistent with the Commission's guidance in Order No. 881 that transmission providers should use the applicable seasonal rating if an ambient adjusted rating is unavailable.¹⁶ The CAISO now proposes rules that recognize, even in the event of a data failure, it may have more accurate hourly ratings than seasonal ratings and could use those ratings.¹⁷

In the event of a data failure affecting the use of hourly ratings in the real-time market, the CAISO proposes to use the last hourly ambient adjusted ratings received for the relevant trading hour or, if none exist, the seasonal ratings. Using its webLineR application, the CAISO will pull data payloads that contain hourly ratings for a six-hour look ahead time horizon. The CAISO proposes to continue to use those ratings pending resolution of the data failure. If the data failure persists beyond the time horizon of ratings contained in the last data payload, the CAISO proposes to use seasonal ratings in the real-time market processes. This approach is consistent with or superior to Order No. 881 because it permits the CAISO to use hourly ratings submitted by transmission owners for a period of time if, for any reason, the CAISO experiences a data failure.

In the event of a data failure affecting the use of hourly ratings in the day-time market, the CAISO proposes to use the last hourly ambient adjusted ratings received for the relevant trading hour if doing so is in accordance with good utility

¹⁵ Order No. 881 at P 143.

¹⁶ *Id.* at P 180.

¹⁷ See proposed redline changes to Appendix JJ, Part 2 submitted with this filing.

practice¹⁸ or, if none exist, the seasonal ratings. Using its webLineR application, the CAISO will pull data payloads that contain three days of hourly ratings. The CAISO proposes to use those ratings in accordance with good utility practice pending resolution of the data failure. If the data failure persists beyond the time horizon of ratings contained in the last data payload or if system conditions have materially changed since receipt of the ratings in the last payload, the CAISO would use seasonal ratings in the day-ahead market. This approach is consistent with or superior to Order No. 881 because it permits the CAISO to use hourly ratings submitted by transmission owners for a period of time even if, for any reason, the CAISO experiences a data failure. The CAISO plans to provide additional details in its Business Practice Manuals of factors that will guide its exercise of good utility practice to decide whether to rely on forward hourly ratings in the day-ahead market process or default to using seasonal ratings.

Finally, the CAISO proposes to clarify that ratings submitted to the CAISO in the outage management system will control the ratings used by the CAISO in the real-time and day ahead markets.¹⁹ This will allow the relevant market process to recognize any outages that affect the ratings of transmission lines.

E. The CAISO proposes to clarify that EDAM participants will submit ratings for use in the day-ahead and real-time markets

Since the CAISO submitted its initial compliance filings with Order No. 881, the Commission has accepted tariff rules to facilitate EDAM implementation for WEIM entities.²⁰ EDAM will allow participants in the WEIM to participate in a day-ahead market clearing process, if they so choose. Optimizing the use of existing transmission and resources across a larger footprint in the West will provide economic and reliability benefits to participants.²¹ Once a WEIM entity elects to join, and starts participating in, EDAM, the tariff will refer to the entity as an EDAM entity for purposes of its participating the day-ahead and real-time markets. The CAISO

¹⁸ The CAISO tariff defines good utility practice as: “Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be limited to any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region, including those practices required by Federal Power Act section 215(a)(4).”

¹⁹ See proposed redline changes to Appendix JJ, Part 2 submitted with this filing.

²⁰ *Cal. Indep. Sys. Operator Corp.*, 185 FERC ¶ 61,210 (2023); *Cal. Indep. Sys. Operator Corp.*, 187 FERC ¶ 61,154 (2024).

²¹ *Cal. Indep. Sys. Operator Corp.*, 185 FERC ¶ 61,210 (2023) at P 42.

tariff will continue to call WEIM entities that elect to continue in the WEIM or join the WEIM only EIM Entities. The CAISO is working to deploy EDAM in the spring of 2026. Implementing Order No. 881 will include integrating hourly transmission line ratings into these markets. For this reason, the CAISO proposes to clarify it will accept ratings from EDAM entities in addition to CAISO Participating Transmission Owners for use in is day-ahead and real-time markets.²²

III. Request for Order and Effective Date

The CAISO respectfully requests the Commission issue an order accepting the tariff revisions in this filing by April 15, 2025. A Commission order by that date will provide regulatory certainty for the CAISO, its market participants, and stakeholders before the planned implementation of Order No. 881. As referenced in Section I of this transmittal letter, the CAISO requests the Commission also rule on its January 27, 2025 motion for extension of time to comply with Order No. 881 filed in docket ER22-2362, when it issues an order addressing these tariff revisions. The CAISO requests these tariff revisions take effect subject to the CAISO filing a notice with the Commission no less than seven days prior to the actual effective date but no later than the time specified in the CAISO's motion for extension to comply with Order No. 881.

Under section 35.11 of the Commission's regulations, 18 C.F.R. § 35.11, the CAISO respectfully requests the Commission grant waiver of the notice requirement of section 35.3(a)(1) of the Commission's regulations, 18 C.F.R. § 35.3(a)(1), to permit a potential effective date over 120 days after this filing. Good cause exists to grant this waiver because it will permit the CAISO and its market participants flexibility to implement Order No. 881 without facing the administrative burden of further filings with the Commission to adjust the tariff effective date.

²²

See proposed redline changes to Appendix JJ, Part 2 submitted with this filing.

IV. Communications

Under Rule 203(b)(3),²³ the CAISO respectfully requests that all correspondence and other communications about this filing be served upon:

Andrew Ulmer
Assistant General Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel: (916) 608-7209
Fax: (916) 608-7222
Email: aulmer@caiso.com

V. Service

The CAISO has served copies of this filing on the CPUC, the California Energy Commission, and all parties with scheduling coordinator agreements under the CAISO tariff. In addition, the CAISO has posted a copy of the filing on the CAISO website.

VI. Contents of this filing

Besides this transmittal letter, this filing includes the following attachments:

Attachment A	Clean CAISO tariff sheets
Attachment B	Redlined CAISO tariff sheets reflecting changes from the tariff records accepted by the Commission in ER22-2362

²³ 18 C.F.R. § 385.203(b)(3).

VII. Conclusion

The CAISO respectfully requests that the Commission issue an order accepting the tariff revisions in this filing by April 15, 2025, effective as of the dates specified in Section III. Acceptance of these tariff revisions will advance the efforts of the CAISO and its stakeholders to effect a successful implementation of Order No. 881.

Respectfully submitted,

/s/ Andrew Ulmer

Roger E. Collanton

General Counsel

Anthony Ivancovich

Deputy General Counsel

Andrew Ulmer

Assistant General Counsel

California Independent System

Operator Corporation

250 Outcropping Way

Folsom, CA 95630

Tel. (916) 608-7209

Counsel for the California Independent
System Operator

Attachment A – Clean Tariff

Tariff Amendment – Implement Order No. 881 Managing Transmission Line Ratings

California Independent System Operator Corporation

February 6, 2025

Section 6

* * * * *

6.5.10.1.6 Transmission Line Ratings

The CAISO will provide access to a database of Transmission Line Ratings, Transmission Line Rating methodologies, and related information as described in Section 6.5.17.

* * * * *

Appendix JJ

Transmission Line Ratings

* * * * *

Part 2 – CAISO Use of Transmission Line Ratings

Day-Ahead Market

Unless an exception applies, the CAISO will use Ambient Adjusted Ratings, Dynamic Line Ratings, or alternate ratings validated and submitted by a Participating Transmission Owner or an EDAM Entity. Ambient Adjusted Ratings should reflect hourly values for each Trading Hour of the Trading Day. For purposes of the Day-Ahead Market, a Participating Transmission Owner or an EDAM Entity may submit Ambient Adjusted Ratings using the communication system described in the applicable Business Practice Manual or Operating Procedures. Subject to any Outage ratings on a transmission line, the CAISO will incorporate updated hourly Ambient Adjusted Ratings in its Base Market Model for the Day-Ahead Market prior to running to Day-Ahead Market. If for any reason communications with the CAISO are disrupted and prevent a Participating Transmission Owner or EDAM Entity from submitting, or the CAISO from receiving, the applicable Transmission Line Rating, or a data input failure occurs, or a hardware or software failure occurs, the CAISO will use the last applicable Ambient Adjusted Rating received for the relevant Transmission Line for the applicable Trading Hour if doing so is in accordance with Good Utility Practice. Alternatively, the CAISO will use the Seasonal Rating for the relevant Transmission Line for the applicable Trading Hour. If the CAISO detects an apparent inaccurate transmission line rating, the CAISO will inform the Participating Transmission Owner or EDAM Entity and take appropriate actions to resolve any inaccuracy, including use of an alternate rating specified by the Participating Transmission Owner or EDAM Entity.

Real-Time Market

Unless an exception applies, the CAISO will use Ambient Adjusted Ratings, Dynamic Line Ratings, or alternate ratings validated and submitted by a Participating Transmission Owner, EDAM Entity, or an EIM Entity as the relevant Transmission Line Ratings in its Base Market Model for the Real-Time Market. Ambient Adjusted Ratings should reflect equal values across each fifteen-minute interval of a Trading Hour. A Participating Transmission Owner, EDAM Entity, or EIM Entity may submit Ambient Adjusted Ratings using the communication system described in the applicable Business Practice Manual or Operating Procedures. Subject to any Outage ratings on a transmission line, the CAISO will incorporate updated hourly Ambient Adjusted Ratings in its Base Market Model for the Real-Time Market each hour for a rolling six-hour period. If for any reason communications with the CAISO are disrupted and prevent a Participating Transmission Owner, EDAM Entity, or EIM Entity from submitting, or the CAISO from receiving, the applicable Transmission Line Rating, or a data input failure occurs, or a hardware or software failure occurs, the CAISO will use the last applicable Ambient Adjusted Rating received for the relevant Transmission Line for the applicable Trading Hour or, if none exists, the Seasonal Rating for the relevant Transmission Line for the applicable Trading Hour. If the CAISO detects an apparent inaccurate

Transmission Line Rating, the CAISO will inform the Participating Transmission Owner, EDAM Entity, or EIM Entity and take appropriate actions to resolve any inaccuracy, including use of an alternate rating specified by the Participating Transmission Owner, EDAM Entity, or EIM Entity.

* * * * *

Attachment B – Marked Tariff, against ER22-2362 language

Tariff Amendment – Implement Order No. 881 Managing Transmission Line Ratings

California Independent System Operator Corporation

February 6, 2025

NOTE: The black language below is FERC-approved but still pending a future effective date in docket number ER22-2362. The redline edits below are the proposed changes from this filing.

Section 6

* * * * *

6.5.10.1.6 Transmission Line Ratings

The CAISO will provide access to a database of Transmission Line Ratings, Transmission Line Rating methodologies, and related information as described in Section 6.5.17.

* * * * *

Appendix JJ

Transmission Line Ratings

* * * * *

Part 2 – CAISO Use of Transmission Line Ratings

Day-Ahead Market

Unless an exception applies, the CAISO will use Ambient Adjusted Ratings, Dynamic Line Ratings, or alternate ratings validated and submitted by a Participating Transmission Owners or an EDAM Entity ~~no later than 9:00 a.m. Pacific Time on the day before a Trading Day as the relevant Transmission Line Ratings in its Base Market Model for the Day-Ahead Market.~~ Ambient Adjusted Ratings should reflect hourly values for each Trading Hour of the Trading Day. For purposes of the Day-Ahead Market, a Participating Transmission Owner or an EDAM Entity may submit Ambient Adjusted Ratings using ~~SCADA, ICGP or similar the~~ communication systems ~~as~~ described in the applicable Business Practice Manual or Operating Procedures. Subject to any Outage ratings on a transmission line, the CAISO will incorporate updated hourly Ambient Adjusted Ratings in its Base Market Model for the Day-Ahead Market prior to running to Day-Ahead Market. If, for any reason, communications ~~between a Participating Transmission Owner and with~~ the CAISO are disrupted and prevent a Participating Transmission Owner or EDAM Entity from submitting, or the CAISO ~~from~~ receiving, the applicable Transmission Line Rating, or a data input failure occurs, or a hardware or software failure occurs, the CAISO will use the last applicable Ambient Adjusted Rating received for the relevant Transmission Line for the applicable Trading Hour if doing so is in accordance with Good Utility Practice. Alternatively, the CAISO will use the CAISO will use the Seasonal Rating for the relevant Transmission Line for the applicable Trading Hour. If the CAISO detects an apparent inaccurate transmission line rating, the CAISO will inform the Participating Transmission Owner or EDAM Entity and take appropriate actions to resolve any inaccuracy, including use of an alternate rating specified by the Participating Transmission Owner or EDAM Entity.

Real-Time Market

Unless an exception applies, the CAISO will use Ambient Adjusted Ratings, Dynamic Line Ratings, or alternate ratings validated and submitted by a Participating Transmission Owner, EDAM Entity, or an ~~and~~ EIM Entity ~~no later than 5 (five) hours before a Trading Hour~~ as the relevant Transmission Line Ratings in its Base Market Model for the Real-Time Market. Ambient Adjusted Ratings should reflect equal values across each fifteen-minute interval of a Trading Hour. A Participating Transmission Owner, EDAM Entity, or EIM Entity may submit Ambient Adjusted Ratings using ~~SCADA, ICGP or similar the~~ communication systems ~~as~~ described in the applicable Business Practice Manual or Operating Procedures. Subject to any Outage ratings on a transmission line, the CAISO will incorporate updated

hourly Ambient Adjusted Ratings in its Base Market Model for the Real-Time Market each hour for a rolling six-hour period. If, for any reason, communications with the CAISO are disrupted and prevent a Participating Transmission Owner, EDAM Entity, or EIM Entity from submitting, or the CAISO from receiving, the applicable Transmission Line Rating, or a data input failure occurs, or a hardware or software failure occurs, the CAISO will use the last applicable Ambient Adjusted Rating received for the relevant Transmission Line for the applicable Trading Hour or, if none exists, the Seasonal Rating for the relevant Transmission Line for the applicable Trading Hour. If the CAISO detects an apparent inaccurate ~~Transmission Line Rating~~, the CAISO will inform the Participating Transmission Owner, EDAM Entity, or EIM Entity and take ~~appropriate~~ appropriate actions to resolve any inaccuracy, including use of an alternate rating specified by the Participating Transmission Owner, EDAM Entity, or EIM Entity.

* * * * *