

183 FERC ¶ 61,037  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Willie L. Phillips, Acting Chairman;  
James P. Danly, Allison Clements,  
and Mark C. Christie.

California Independent System Operator Corporation    Docket No.    ER22-2362-000

ORDER ON COMPLIANCE FILING

(Issued April 20, 2023)

1.     On July 12, 2022, California Independent System Operator Corporation (CAISO) submitted proposed revisions to its Open Access Transmission Tariff (Tariff) in compliance with the requirements of Order No. 881,<sup>1</sup> a final rule that revised both the *pro forma* Open Access Transmission Tariff (OATT) and the Commission's regulations under section 206 of the Federal Power Act (FPA)<sup>2</sup> to improve the accuracy and transparency of electric transmission line ratings.<sup>3</sup> In this order, we accept CAISO's

---

<sup>1</sup> *Managing Transmission Line Ratings*, Order No. 881, 177 FERC ¶ 61,179 (2021), *order addressing arguments raised on reh'g*, Order No. 881-A, 179 FERC ¶ 61,125 (2022).

<sup>2</sup> 16 U.S.C. § 824e.

<sup>3</sup> A transmission line rating is the

[m]aximum transfer capability of a transmission line, computed in accordance with a written Transmission Line Rating methodology and consistent with Good Utility Practice, considering the technical limitations on conductors and relevant transmission equipment (such as thermal flow limits), as well as technical limitations of the Transmission System (such as system voltage and stability limits). Relevant transmission equipment may include, but is not limited to, circuit breakers, line traps, and transformers.

*Pro forma* OATT, attach. M, Definitions; *see also* Order No. 881, 177 FERC ¶ 61,179 at PP 1, 44.

compliance filing, to become effective no later than June 15, 2025, as requested, subject to further compliance. We also direct CAISO to notify the Commission of the actual effective date of the Tariff revisions within five business days of their implementation.

## **I. Background**

2. In Order No. 881, the Commission found that, because of the relationship between transmission line ratings and wholesale rates, inaccurate transmission line ratings cause the rates for the transmission of electric energy in interstate commerce and the sale of electric energy at wholesale in interstate commerce to be unjust and unreasonable.<sup>4</sup> To ensure just and reasonable wholesale rates that more accurately reflect the cost of the wholesale service being provided (i.e., energy, capacity, ancillary services, or transmission service), the Commission adopted reforms that impose certain obligations on transmission providers<sup>5</sup> and public utility transmission owners with respect to transmission line ratings.<sup>6</sup>

3. In Order No. 881, the Commission required: (1) transmission providers to implement ambient-adjusted ratings (AARs)<sup>7</sup> for near-term transmission service requests

---

<sup>4</sup> Order No. 881, 177 FERC ¶ 61,179 at PP 3, 29-30.

<sup>5</sup> In this order, we use transmission provider to mean any public utility that owns, operates, or controls facilities used for the transmission of electric energy in interstate commerce. 18 C.F.R. § 37.3 (2022). Therefore, unless otherwise noted, “transmission provider” refers only to public utility transmission providers. Furthermore, the term “public utility” as found in section 201(e) of the FPA means “any person who owns or operates facilities subject to the jurisdiction of the Commission under this subchapter. . .” 16 U.S.C. § 824(e).

<sup>6</sup> Order No. 881, 177 FERC ¶ 61,179 at P 29.

<sup>7</sup> An AAR is a:

Transmission Line Rating that: (a) [a]pplies to a time period of not greater than one hour[;] (b) [r]eflects an up-to-date forecast of ambient air temperature across the time period to which the rating applies[;] (c) [r]eflects the absence of solar heating during nighttime periods, where the local sunrise/sunset times used to determine daytime and nighttime periods are updated at least monthly, if not more frequently[; and] (d) [i]s calculated at least each hour, if not more frequently.

on the transmission lines over which they provide transmission service; (2) transmission providers to implement seasonal line ratings<sup>8</sup> for longer-term transmission service requests on the transmission lines over which they provide transmission service; (3) regional transmission organizations and independent system operators (RTOs/ISOs) to establish and implement the systems and procedures necessary to allow transmission owners to electronically update transmission line ratings at least hourly;<sup>9</sup> (4) transmission providers to use uniquely determined<sup>10</sup> emergency ratings;<sup>11</sup> (5) public utility transmission owners to share their transmission line ratings and transmission line rating methodologies with their respective transmission provider(s) and with market monitors in

---

*Pro forma* OATT, attach. M, Definitions; *see also* Order No. 881, 177 FERC ¶ 61,179 at P 4.

<sup>8</sup> A seasonal line rating is a:

Transmission Line Rating that: (a) [a]pplies to a specified season, where seasons are defined by the Transmission Provider to include not fewer than four seasons in each year, and to reasonably reflect portions of the year where expected high temperatures are relatively consistent[;] (b) [r]eflects an up-to-date forecast of ambient air temperature across the relevant season over which the rating applies[; and] (c) [i]s calculated annually, if not more frequently, for each season in the future for which Transmission Service can be requested.

*Pro forma* OATT, attach. M, Definitions; *see also* Order No. 881, 177 FERC ¶ 61,179 at P 204.

<sup>9</sup> Order No. 881, 177 FERC ¶ 61,179 at P 255.

<sup>10</sup> “Uniquely determined” means that the transmission line ratings are determined based on assumptions that reflect the specific, finite duration of emergency ratings, as opposed to using assumptions used to calculate normal ratings. The Commission explained that, by requiring emergency ratings be uniquely determined, they would be based on assumptions that reflect the finite duration of the emergency ratings, as distinct from the assumptions of normal ratings that can be maintained indefinitely. *Id.* PP 294-295.

<sup>11</sup> An emergency rating is “a Transmission Line Rating that reflects operation for a specified, finite period, rather than reflecting continuous operation. An Emergency Rating may assume an acceptable loss of equipment life or other physical or safety limitations for the equipment involved.” *Pro forma* OATT, attach. M, Definitions; *see also* Order No. 881, 177 FERC ¶ 61,179 at P 293.

RTOs/ISOs; (6) transmission providers to share their transmission owners' transmission line ratings and transmission line rating methodologies with any transmission provider(s) upon request; (7) transmission providers to maintain a database of their transmission owners' transmission line ratings and transmission line rating methodologies on the transmission provider's Open Access Same-Time Information System (OASIS) site or another password-protected website; and (8) transmission providers to post on OASIS or another password-protected website any uses of exceptions or temporary alternate ratings.<sup>12</sup> In addition, the Commission required transmission providers to explain their timelines for calculating or submitting AARs as part of their compliance filings.<sup>13</sup>

## II. Compliance Filing

4. CAISO proposes to incorporate the new definitions required by Order No. 881 into Appendix A (Definitions) of its Tariff.<sup>14</sup> In addition, CAISO proposes to incorporate a new Appendix JJ (Transmission Line Ratings) into its Tariff, which includes language to comply with the directives of Order No. 881 regarding coordinating the development of transmission line rating methodologies with participating transmission owners (PTOs) and the use of transmission line ratings. CAISO asserts that this language largely tracks the *pro forma* language in Order No. 881. CAISO also proposes to include new language in section 6 of its Tariff to address transparency reforms under Order No. 881.

5. CAISO states that it is not proposing changes to its transmission control agreement in this filing.<sup>15</sup> CAISO contends that the language of the transmission control agreement is broad enough to encompass the requirements of Order No. 881. CAISO also states that it anticipates holding structured dialogues with its PTOs, Western Energy Imbalance Market entities, market participants, and its reliability coordinator service (RC West) customers to address implementation issues and milestones associated with Order No. 881.<sup>16</sup>

---

<sup>12</sup> Order No. 881, 177 FERC ¶ 61,179 at PP 4-11.

<sup>13</sup> *Id.* P 143.

<sup>14</sup> Filing, Transmittal Letter at 4.

<sup>15</sup> *Id.* The transmission control agreement establishes the terms and conditions under which PTOs place certain transmission facilities and entitlements under CAISO's operational control.

<sup>16</sup> *Id.* at 3.

6. CAISO requests an effective date on or before June 15, 2025, subject to CAISO filing a notice with the Commission within five days of the actual effective date.<sup>17</sup> CAISO states that it is targeting an effective date prior to summer 2025 and commits to inform the Commission of any need to modify its requested effective date. CAISO explains that implementing large changes to its market process immediately prior to CAISO's summer operating season may not be good utility practice, given the significant market enhancements, the timing of significant releases in the fall timeframe, and the need to complete functional testing of new processes and systems required by Order No. 881.<sup>18</sup>

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

7. Notice of CAISO's filing was published in the *Federal Register*, 87 Fed. Reg. 42,717 (July 18, 2022) with interventions and protests due on or before August 2, 2022. Timely motions to intervene were filed by the following entities: Calpine Corporation; the City of Santa Clara, California; Pacific Gas and Electric Company; Modesto Irrigation District; Southern California Edison Company; the California Department of Water Resources State Water Project; the Northern California Power Agency; and the City and County of San Francisco.

### **IV. Discussion**

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

8. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2022), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

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

9. As an initial matter, we find that CAISO's proposed Tariff language complies with the following requirements of Order No. 881: (1) transmission providers must implement AARs for near-term transmission service requests on the transmission lines over which they provide transmission service; (2) transmission providers must implement seasonal line ratings for longer-term transmission service requests on the transmission lines over which they provide transmission service; (3) transmission providers must use uniquely

---

<sup>17</sup> *Id.* at 1, 23-24. CAISO reflected a 12/31/9998 effective date in its eTariff records and states that it will notify the Commission of the actual effective date of these tariff records within five business days after implementation in an eTariff submittal using Type of Filing code 150 – Report.

<sup>18</sup> *Id.* at 24.

determined emergency ratings; (4) public utility transmission owners must share their transmission line ratings and transmission line rating methodologies with their respective transmission provider(s) and with market monitors in RTOs/ISOs; (5) transmission providers must share their transmission owners' transmission line ratings and transmission line rating methodologies with any transmission provider(s) upon request; and (6) transmission providers must maintain a database of their transmission owners' transmission line ratings and transmission line rating methodologies on the transmission provider's OASIS site or another password-protected website.

10. As discussed below, we also find that CAISO's proposal partially complies with the Order No. 881 requirement that transmission providers post on OASIS or another password-protected website any uses of exceptions or temporary alternate ratings. In addition, we find that CAISO's proposed definition for transmission line ratings partially complies with the requirements of Order No. 881. Therefore, we direct CAISO to file the compliance filing directed herein within 60 days of the date of this order.<sup>19</sup> We also direct CAISO to notify the Commission of the actual effective date of the Tariff revisions within five business days of their implementation.<sup>20</sup>

### **1. Transmission Line Ratings Definition**

11. In Order No. 881, the Commission adopted in the *pro forma* OATT Attachment M the definition of transmission line ratings noted above.<sup>21</sup> The Commission further clarified that the definition of transmission line rating for electric system equipment and the calculation of AARs should not be limited to overhead conductors.<sup>22</sup> Rather, the Commission explained that the definition of transmission line rating reflects the fact that transmission line ratings must incorporate a set of electrical equipment ratings that collectively operate as a single bulk electric system element (e.g., transformers, relay protective devices, terminal equipment, and series and shunt compensation devices) and that the most limiting component from that set determines the transmission line rating.<sup>23</sup>

---

<sup>19</sup> CAISO should submit its compliance filing in an eTariff submittal using Type of Filing Code 80 – Compliance Filing.

<sup>20</sup> CAISO must notify the Commission of the actual effective date of these Tariff records within five business days after implementation in an eTariff submittal using Type of Filing code 150 – Report.

<sup>21</sup> *See supra* n.3.

<sup>22</sup> Order No. 881, 177 FERC ¶ 61,179 at P 45.

<sup>23</sup> *Id.* PP 40, 44-45.

a. **Filing**

12. CAISO proposes to define transmission line rating as

the maximum transfer capability of a transmission line, computed in accordance with a written Transmission Line Rating methodology and consistent with Good Utility Practice, considering the technical limitations on conductors and relevant transmission equipment (such as thermal flow limits), as well as technical limitations of the transmission system (such as system voltage and stability limits).<sup>24</sup>

CAISO asserts that the definition encompasses transmission line ratings for electric system equipment that includes more than just overhead conductors, for example, ratings for electric system equipment such as circuit breakers, line traps, and transformers.<sup>25</sup>

b. **Commission Determination**

13. We find that CAISO's definition of transmission line ratings partially complies with Order No. 881. Specifically, in Order No. 881, the definition of transmission line ratings specifies that "[r]elevant transmission equipment may include, but is not limited to, circuit breakers, line traps, and transformers."<sup>26</sup> The Commission stated that the definition adopted in Order No. 881 reflects the fact that "transmission line ratings must incorporate a set of electrical equipment ratings that collectively operate as a single bulk electric system element (e.g., transformers, relay protective devices, terminal equipment, and series and shunt compensation devices) and that the most limiting component from that set determines the transmission line rating."<sup>27</sup> While CAISO states that its proposed definition encompasses electrical system equipment beyond just overhead conductors, we find that the absence of Tariff specificity renders the proposed definition unclear on this point, especially in light of CAISO's proposed Tariff language for emergency ratings, which provides greater specificity.<sup>28</sup> Accordingly, we direct CAISO to file, within 60

---

<sup>24</sup> CAISO, CAISO eTariff, app. A (Definitions), Transmission Line Ratings (0.0.0).

<sup>25</sup> Filing, Transmittal Letter at 5.

<sup>26</sup> Order No. 881, 177 FERC ¶ 61,179 at P 44.

<sup>27</sup> *Id.*

<sup>28</sup> *See* CAISO, CAISO eTariff, app. JJ (Transmission Line Ratings) (0.0.0) ("For Emergency ratings, incorporating a set of electrical equipment ratings that collectively operate as a single electric system element (e.g., transformers, relay protective devices,

days of the date of this order, a further compliance filing to revise the definition of Transmission Line Ratings to specify that relevant transmission equipment may include, but is not limited to, circuit breakers, line traps, and transformers, or explain why it should not be required to do so.

## 2. AAR Timelines

14. In discussing how new forecast data should be incorporated into AAR calculations, the Commission required transmission providers to explain their timelines for calculating or submitting AARs as part of their compliance filings.<sup>29</sup> The Commission noted that transmission providers already manage similar timing issues with respect to load forecasts, forecasts for renewable generation, and generation bid deadlines, and that it may be that the deadlines for AAR calculation and submission are not significantly different from existing deadlines for submission of updates to generation supply offers and load.

### a. Filing

15. CAISO proposes to require PTOs to submit any AAR for use in the real-time market five hours before the applicable trading hour.<sup>30</sup> CAISO states that its real-time market opens at 1 P.M. the day before an applicable trade day and requires the submission of bids and all self-schedules no later than 75 minutes prior to the trading hour. CAISO states that by requiring the submission of ratings for use in the real-time market five hours before an applicable trading hour, it can ensure that transmission line ratings remain constant over its short-term unit commitment process time horizon and throughout any subsequent real-time market processes. CAISO further states that if it determines it can adjust the submission deadline for transmission line ratings to a time period when submissions are due, i.e. 75 minutes before an applicable trading hour, it will propose a Tariff revision to do so.<sup>31</sup> With regard to transmission line ratings used in the day-ahead market, CAISO proposes to require transmission owners to submit AARs by no later than 9 A.M. on the day before the applicable trading day, explaining that it

---

terminal equipment, and series and shunt compensation devices), and using the most limiting component from that set to determine the Transmission Line Rating.”).

<sup>29</sup> Order No. 881, 177 FERC ¶ 61,179 at P 143.

<sup>30</sup> Filing, Transmittal Letter at 14; CAISO, CAISO eTariff, app. JJ (Transmission Line Ratings), pt. 2 (CAISO Use of Transmission Line Ratings) (0.0.0).

<sup>31</sup> Filing, Transmittal Letter at 14-15.



needs time to process the submitted transmission line ratings for each hour and undertake data quality checks and take any necessary remedial steps.<sup>32</sup>

**b. Commission Determination**

16. With respect to the deadlines for submission of transmission line ratings for its day-ahead and real-time markets, we accept CAISO's explanation and proposed tariff language. We also recognize CAISO's statement that it will propose new tariff language with the Commission if it determines it can adjust the submission deadline for transmission line ratings used in the real-time market to a time period closer to the applicable trading hour.

**3. Role of the Transmission Owner and Transmission Provider in AAR Implementation**

17. In Order No. 881, the Commission clarified that transmission owners, not transmission providers, are responsible for calculating transmission line ratings.<sup>33</sup> The Commission noted that, because a distinction is made between transmission owners and transmission providers in RTO/ISO regions, RTOs/ISOs will need to rely on their member transmission owners to calculate transmission line ratings and provide them to the RTO/ISO in order to comply with Order No. 881.<sup>34</sup>

18. In instances where the transmission provider is not the transmission owner, such as in RTO/ISO regions, the Commission required that the transmission provider explain, in its compliance filing, the mechanism (e.g., a tariff or membership agreement) through which transmission owners will be obligated to make and communicate to the transmission provider the timely calculations and determinations related to transmission line ratings (including the exercise of any discretion in calculations or application of exceptions).<sup>35</sup> Further, the Commission required RTOs/ISOs on compliance to propose and justify a methodology for AAR implementation, delineating the expected roles between transmission owners and transmission provider.<sup>36</sup> In addition, the Commission required that electronic transmission line rating data be submitted by transmission owners directly into an RTO's/ISO's energy management system through Supervisory Control

---

<sup>32</sup> *Id.* at 13-14.

<sup>33</sup> Order No. 881, 177 FERC ¶ 61,179 at P 140.

<sup>34</sup> *Id.* PP 140, 300.

<sup>35</sup> *Id.* P 141.

<sup>36</sup> *Id.* P 142.

and Data Acquisition or similar communications systems, such as Inter-Control Center Communication Protocol.<sup>37</sup>

**a. Filing**

19. CAISO proposes to coordinate with PTOs in their development of transmission line rating methodologies to ensure these methodologies account for the calculation of temperatures, AARs, seasonal line ratings, emergency ratings, and the development of exceptions or alternate ratings.<sup>38</sup> CAISO also proposes procedures and deadlines for PTOs to submit transmission line ratings for use in the day-ahead market, real-time market, longer-term transmission service, and emergency ratings.<sup>39</sup> In addition, CAISO states that it will develop a new interface for PTOs to submit applicable transmission facility ratings and communicate these ratings to its market and reliability applications. CAISO states that it plans to accommodate submission of this information directly into CAISO's energy management system through Supervisory Control and Data Acquisition Capability, by means of inter-control center communications protocol, or similar communication systems.<sup>40</sup>

**b. Commission Determination**

20. We find that CAISO complies with the requirements in Order No. 881 related to the roles of transmission owner and transmission provider in implementing AARs.<sup>41</sup> Specifically, we find that CAISO sufficiently explains that it is developing an interface for PTOs to submit transmission line ratings and communicate these ratings to its market and reliability applications. Further, as noted above, CAISO's proposed Tariff states that CAISO will coordinate with PTOs to develop their transmission line rating methodologies.

---

<sup>37</sup> *Id.* P 179.

<sup>38</sup> CAISO, CAISO eTariff, app. JJ (Transmission Line Ratings) (0.0.0), Part 1: Transmission Line Rating Methodologies.

<sup>39</sup> *Id.*, app. JJ (Transmission Line Ratings) (0.0.0), Part 2- CAISO Use of Transmission Line Ratings.

<sup>40</sup> Filing, Transmittal Letter at 9-10.

<sup>41</sup> Order No. 881, 177 FERC ¶ 61,179 at P 141-142.

#### 4. Exceptions and Alternate Ratings

21. In Order No. 881, the Commission adopted exceptions to the AAR and seasonal line rating requirements for both near-term and longer-term transmission service for two sets of circumstances, set forth in the *pro forma* OATT Attachment M.

22. First, where a transmission provider determines, consistent with good utility practice, that a transmission line rating of a transmission line is not affected by ambient air temperature or solar heating, the transmission provider may use a transmission line rating that is not an AAR or seasonal line rating.<sup>42</sup> According to *pro forma* OATT Attachment M, examples of such a transmission line may include: (1) a transmission line for which the technical transfer capability of the limiting conductors and/or limiting transmission equipment is not dependent on ambient air temperature or solar heating; or (2) a transmission line whose transfer capability is limited by a transmission system limit (such as a system voltage or stability limit) which is not dependent on ambient air temperature or solar heating.<sup>43</sup> The Commission required that, if the technical basis for such an exception changes, then the transmission provider must update the relevant transmission line ratings in a timely manner.<sup>44</sup> The Commission further required transmission providers to reevaluate any such exceptions at least every five years.<sup>45</sup>

23. Second, the Commission established an option for transmission providers to temporarily use a different transmission line rating from that which would otherwise be required by *pro forma* OATT Attachment M in instances when the transmission provider reasonably determines, consistent with good utility practice, that the use of such a temporary alternate rating is necessary to ensure the safety and reliability of the transmission system.<sup>46</sup>

##### a. Filing

24. CAISO proposes to coordinate with PTOs in their development of exceptions or alternative ratings to AARs where a PTO determines, consistent with good utility practice, that: (1) the transmission line rating of a transmission line is not affected by

---

<sup>42</sup> *Id.* P 227.

<sup>43</sup> *Pro forma* OATT, attach. M, Obligations of Transmission Provider; *see also* Order No. 881, 177 FERC ¶ 61,179 at P 227.

<sup>44</sup> Order No. 881, 177 FERC ¶ 61,179 at P 233.

<sup>45</sup> *Id.* PP 233, 342.

<sup>46</sup> *Id.* P 228.

ambient air temperature or solar heating, or (2) the temporary use of an alternate transmission line rating is necessary to ensure the safety and reliability of the transmission system.<sup>47</sup> CAISO states that the proposed language tracks the *pro forma* language in Order No. 881.

25. In addition, CAISO proposes to maintain, on a password-protected basis, a database of all transmission line ratings and transmission line rating methodologies used in real-time operations and in each future period for which they are calculated. This database will include records of which transmission line ratings and transmission line rating methodologies were in effect at which times over the previous five years, including records of which temporary alternate transmission line ratings or exceptions were in effect during the previous five years. With regard to exceptions and alternate ratings, CAISO proposes that its database will document the nature and basis for such exceptions and alternate ratings, when they were initiated, and, if applicable, when they were withdrawn.<sup>48</sup>

**b. Commission Determination**

26. We find that CAISO's proposal partially complies with the Commission's requirements for designating exceptions and alternate ratings requirements of Order No. 881. CAISO proposes to coordinate with PTOs in their development of exceptions or alternate ratings for both near-term and longer-term transmission service for the set of circumstances set forth in the *pro forma* OATT Attachment M. However, CAISO does not propose Tariff language stating that exceptions will be re-evaluated by the transmission provider at least every five years,<sup>49</sup> nor does CAISO explain the absence of such language. Accordingly, we direct CAISO to file, within 60 days of the date of this order, a further compliance filing that incorporates language in its Tariff indicating that it will re-examine exceptions at least every five years or explain why it should not be required to do so.

**5. Dynamic Line Ratings**

27. In Order No. 881, the Commission required RTOs/ISOs to establish and maintain systems and procedures necessary to allow transmission owners to electronically update transmission line ratings (for each period for which transmission line ratings are

---

<sup>47</sup> Filing, Transmittal Letter at 12; CAISO, CAISO eTariff, app. JJ (Transmission Line Ratings) (0.0.0), Part 1: Transmission Line Rating Methodologies.

<sup>48</sup> Filing, Transmittal Letter at 22-23; CAISO, CAISO eTariff, § 6.5.17 Transmission Line Ratings (0.0.0).

<sup>49</sup> Order No. 881, 177 FERC ¶ 61,179 at PP 233, 342.

calculated) at least hourly, with such data submitted by transmission owners directly into the RTO's/ISO's energy management system through Supervisory Control and Data Acquisition or related systems. The Commission noted that, without these capabilities, RTO/ISO software could serve as a barrier that prevents transmission owners in RTOs/ISOs from implementing dynamic line ratings.<sup>50</sup>

**a. Filing**

28. CAISO proposes to incorporate the definition of dynamic line ratings adopted by Order No. 881.<sup>51</sup> CAISO also proposes to develop a new interface for PTOs to submit applicable transmission facility ratings and communicate these ratings to its market and reliability applications. CAISO states that this functionality will serve as a platform to accept submission of AARs and dynamic line ratings. CAISO states that it plans to accommodate submission of this information directly into CAISO's energy management system through Supervisory Control and Data Acquisition Capability, by means of inter-control center communications protocol, or similar communication systems.<sup>52</sup> CAISO states that its work to implement a process and systems to allow for electronic updates of transmission line ratings will support the use of dynamic line ratings, if PTOs and other entities elect to use them.<sup>53</sup>

**b. Commission Determination**

29. We find that CAISO's proposal complies with the dynamic line ratings requirements of Order No. 881.<sup>54</sup> As CAISO notes, it is developing an interface for PTOs that supports the submission of hourly transmission facility ratings and this platform will accept the submission of any dynamic line ratings. However, we remind

---

<sup>50</sup> *Id.* P 255. A dynamic line rating is “a transmission line rating that applies to a time period of not greater than one hour and reflects up-to-date forecasts of inputs such as (but not limited to) ambient air temperature, wind, solar heating intensity, transmission line tension, or transmission line sag.” 18 C.F.R. § 35.28(b)(14) (2022); *see also* Order No. 881, 177 FERC ¶ 61,179 at PP 235, 238.

<sup>51</sup> Filing, Transmittal Letter at 6; CAISO, CAISO eTariff, app. A (Definitions), Dynamic Line Rating (0.0.0).

<sup>52</sup> Filing, Transmittal Letter at 9-10.

<sup>53</sup> *Id.* at 6.

<sup>54</sup> Order No. 881, 177 FERC ¶ 61,179 at P 255.

CAISO that whatever interface it uses must allow transmission owners to electronically update transmission line ratings at least hourly.<sup>55</sup>

The Commission orders:

(A) CAISO's compliance filing is hereby accepted, effective as of the date requested, subject to further compliance, as discussed in the body of this order.

(B) CAISO is hereby directed to notify the Commission of the actual effective date of the revisions within five business days of their implementation.

(C) CAISO is hereby directed to submit a further compliance filing, within 60 days of the date of issuance of this order, as discussed in the body of this order.

By the Commission.

( S E A L )

Kimberly D. Bose,  
Secretary.

---

<sup>55</sup> *Id.*