

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Richard Glick and Bernard L. McNamee.

Public Service Company of Colorado

Docket No. ER19-1864-001

ORDER ON COMPLIANCE

(Issued December 19, 2019)

1. On May 15, 2019, as amended on June 3, 2019, Public Service Company of Colorado (PSCo) submitted proposed revisions to its Open Access Transmission Tariff (Tariff) in compliance with the requirements of Order Nos. 845 and 845-A,¹ which amend the Commission's *pro forma* Large Generator Interconnection Agreement (LGIA) and *pro forma* Large Generator Interconnection Procedures (LGIP).² As discussed below, we find that PSCo's filing partially complies with the requirements of Order Nos. 845 and 845-A. Accordingly, we accept PSCo's compliance filing, effective May 22, 2019 and direct PSCo to submit a further compliance filing within 60 days of the date of this order.

I. Background

2. On April 19, 2018, the Commission issued Order No. 845, which revised the Commission's *pro forma* LGIA and the *pro forma* LGIP to improve certainty for interconnection customers, promote more informed interconnection decisions, and enhance the interconnection process. The Commission stated that it expects that these reforms will provide interconnection customers better information and more options for obtaining interconnection service, and, as a result, there will be fewer overall interconnection requests and fewer interconnection requests failing to reach commercial operation. The Commission also stated that it expects that, as a result of these reforms,

¹ *Reform of Generator Interconnection Procedures and Agreements*, Order No. 845, 163 FERC ¶ 61,043 (2018), *errata notice*, 167 FERC ¶ 61,123, *order on reh'g*, Order No. 845-A, 166 FERC ¶ 61,137 (2019), *errata notice*, 167 FERC ¶ 61,124, *order on reh'g*, Order No. 845-B, 168 FERC ¶ 61,092 (2019).

² The *pro forma* LGIP and *pro forma* LGIA establish the terms and conditions under which public utilities that own, control, or operate facilities for transmitting energy in interstate commerce must provide interconnection service to large generating facilities. Order No. 845, 163 FERC ¶ 61,043 at P 6.

transmission providers will be able to focus resources on those interconnection requests most likely to reach commercial operation.³ In Order No. 845-A, the Commission generally upheld the reforms it required in Order No. 845 but granted certain requests for rehearing and clarification.

3. In Order No. 845, the Commission adopted 10 different reforms in three categories to improve the interconnection process. First, in order to improve certainty for interconnection customers, the Commission: (1) removed the limitation that interconnection customers may exercise the option to build the transmission provider's interconnection facilities⁴ and stand alone network upgrades⁵ only in instances when the transmission provider cannot meet the dates proposed by the interconnection customer;⁶ and (2) required that transmission providers establish interconnection dispute resolution procedures that allow a disputing party unilaterally to seek non-binding dispute resolution.⁷

4. Second, to promote more informed interconnection decisions, the Commission: (1) required transmission providers to outline and make public a method for determining contingent facilities;⁸ (2) required transmission providers to list the specific study

³ *Id.* P 2; Order No. 845-A, 166 FERC ¶ 61,137 at P 1.

⁴ Transmission provider's interconnection facilities are "all facilities and equipment owned, controlled or operated by the Transmission Provider from the Point of Change of Ownership to the Point of Interconnection as identified in Appendix A to the Standard Large Generator Interconnection Agreement, including any modifications, additions or upgrades to such facilities and equipment. Transmission provider's interconnection facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades." *Pro forma* LGIA art. 1 (Definitions).

⁵ Stand alone network upgrades are "Network Upgrades that an Interconnection Customer may construct without affecting day-to-day operations of the Transmission System during their construction. Both the Transmission Provider and the Interconnection Customer must agree as to what constitutes Stand Alone Network Upgrades and identify them in Appendix A to the Standard Large Generator Interconnection Agreement." *Id.*

⁶ Order No. 845, 163 FERC ¶ 61,043 at P 85.

⁷ *Id.* P 3.

⁸ Contingent facilities are "those unbuilt Interconnection Facilities and Network Upgrades upon which the Interconnection Request's costs, timing, and study findings are dependent, and if delayed or not built, could cause a need for Re-Studies of the

processes and assumptions for forming the network models used for interconnection studies; (3) revised the definition of “Generating Facility” to explicitly include electric storage resources; and (4) established reporting requirements for aggregate interconnection study performance.⁹

5. Third, the Commission adopted reforms to enhance the interconnection process by: (1) allowing interconnection customers to request a level of interconnection service that is lower than their generating facility capacity; (2) requiring transmission providers to allow for provisional interconnection agreements that provide for limited operation of a generating facility prior to completion of the full interconnection process; (3) requiring transmission providers to create a process for interconnection customers to use surplus interconnection service¹⁰ at existing points of interconnection; and (4) requiring transmission providers to set forth a procedure to follow when assessing and, if necessary, studying an interconnection customer’s technology changes without affecting the interconnection customer’s queue position.¹¹

II. PSCo’s Compliance Filing

6. PSCo proposes revisions to modify the LGIP provided in Attachment N of its Tariff, and states that its proposed Tariff revisions fully comply with Order Nos. 845 and 845-A.¹² PSCo also states that it includes verbatim, the Commission’s proposed language in most cases where Order No. 845 identifies specific language for incorporation into the *pro forma* tariff, and proposes Tariff revisions in instances where the Commission afforded transmission providers the discretion to develop their own tariff language. Specifically, PSCo asserts that it proposes Tariff revisions for the following reforms: (1) identification of contingent facilities; (2) provisional interconnection service; (3) utilization of surplus interconnection service; and (4) procedures for

Interconnection Request or a reassessment of the Interconnection Facilities and/or Network Upgrades and/or costs and timing.” *Pro Forma* LGIP § 1 (Definitions).

⁹ Order No. 845, 163 FERC ¶ 61,043 at P 4.

¹⁰ Order No. 845 added a definition for “Surplus Interconnection Service” to Section 1 of the *pro forma* LGIP and article 1 of the *pro forma* LGIA, defining the term as “any unused portion of Interconnection Service established in a Large Generator Interconnection Agreement, such that if Surplus Interconnection Service is utilized the Interconnection Service limit at the Point of Interconnection would remain the same.” *Id.* P 459.

¹¹ *Id.* P 5.

¹² PSCo May 15, 2019 Compliance Filing at 2.

incorporation of advanced technologies.¹³ PSCo requests an effective date of May 22, 2019 for its proposed Tariff revisions.¹⁴

III. Notice and Responsive Pleadings

7. Notice of PSCo's compliance filing was published in the *Federal Register*, 84 Fed. Reg. 23,046 (2019), with interventions and protests due on or before June 5, 2019. Notice of PSCo's amended filing was published in the *Federal Register*, 84 Fed. Reg. 26,664 (2019), with interventions and protests due on or before June 24, 2019. Avangrid Renewables, LLC, and Holy Cross Electric Association, Inc. filed timely motions to intervene.

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 (2019), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

B. Substantive Matters

9. As discussed below, we find that PSCo's proposed Tariff revisions partially comply with the requirements of Order Nos. 845 and 845-A. Accordingly, we accept PSCo's compliance filing, effective May 22, 2019, and direct PSCo to submit a further compliance filing within 60 days of the date of this order.

1. Proposed Variations

10. As discussed further below, PSCo has requested certain variations from the Commission's requirements in Order Nos. 845 and 845-A. The Commission explained in Order No. 845 that such variations would be reviewed under the same standard allowed by Order No. 2003.¹⁵ In Order No. 2003, when adopting the *pro forma* LGIA and LGIP, the Commission permitted transmission providers to seek variations from the *pro forma* LGIA and/or LGIP if they were "consistent with or superior to" the terms of the *pro forma* LGIA and LGIP.¹⁶ A transmission provider seeking a "consistent with or

¹³ *Id.* at 2.

¹⁴ *Id.* at 1.

¹⁵ Order No. 845, 163 FERC ¶ 61,043 at P 43.

¹⁶ *Standardization of Generator Interconnection Agreements and Procedures*,

superior to” variation must demonstrate why its proposal is consistent with or superior to the *pro forma* LGIP and/or *pro forma* LGIA.¹⁷ The Commission also permitted transmission providers to justify a variation to the *pro forma* LGIA or LGIP based on regional reliability requirements and required transmission providers submitting such regional reliability variations to the Commission for approval to identify the proposed variations and explain why such variations are necessary.¹⁸ We will evaluate PSCo’s proposed variations from the requirements of Order Nos. 845 and 845-A accordingly.

2. Interconnection Customer’s Option to Build

11. In Order No. 845, the Commission revised articles 5.1, 5.1.3, and 5.1.4 of the *pro forma* LGIA to allow interconnection customers to unilaterally exercise the option to build for stand alone network upgrades and the transmission provider’s interconnection facilities, regardless of whether the transmission provider can complete construction of such facilities by the interconnection customer’s proposed in-service date, initial synchronization date, or commercial operation date.¹⁹ Prior to Order No. 845, this option to build was available to an interconnection customer only if the transmission provider did not agree to the interconnection customer’s preferred construction timeline.²⁰ The Commission stated in Order No. 845 that this reform of the option to build will “benefit the interconnection process by providing interconnection customers more control and certainty during the design and construction phases of the interconnection process.”²¹

12. In Order No. 845-A, the Commission granted rehearing and clarification of certain aspects of the revised option to build. Specifically, the Commission revised the definition of stand alone network upgrade in the *pro forma* LGIP and *pro forma* LGIA to: (1) state that, when there is a disagreement, the transmission provider must provide the interconnection customer a written technical explanation outlining why the transmission

Order No. 2003, 104 FERC ¶ 61,103, at P 825 (2003), *order on reh’g*, Order No. 2003-A, 106 FERC ¶ 61,220, *order on reh’g*, Order No. 2003-B, 109 FERC ¶ 61,287 (2004), *order on reh’g*, Order No. 2003-C, 111 FERC ¶ 61,401 (2005), *aff’d sub nom. Nat’l Ass’n of Regulatory Util. Comm’rs v. FERC*, 475 F.3d 1277 (D.C. Cir. 2007).

¹⁷ See, e.g., *Nev. Power Co.*, 167 FERC ¶ 61,086, at P 3 (2019).

¹⁸ Order No. 2003, 104 FERC ¶ 61,103 at P 826; Order No. 2003-A, 106 FERC ¶ 61,220 at P 45.

¹⁹ Order No. 845, 163 FERC ¶ 61,043 at PP 85-87.

²⁰ Order No. 2003, 104 FERC ¶ 61,103 at P 353; see also *pro forma* LGIP § 5.1.3.

²¹ Order No. 845, 163 FERC ¶ 61,043 at P 85.

provider does not consider a specific network upgrade to be a stand alone network upgrade;²² and (2) clarify that the option to build does not apply to stand alone network upgrades on affected systems.²³ The Commission also made revisions to article 5.2 of the *pro forma* LGIA to allow transmission providers to recover oversight costs related to the interconnection customer's option to build.²⁴ In addition, the Commission clarified that the revised option to build provisions apply to all public utility transmission providers, including those that reimburse the interconnection customer for network upgrades.²⁵

a. PSCo's Compliance Filing

13. PSCo states that it adopts the Commission's *pro forma* LGIP and *pro forma* LGIA revisions for option to build as required by Order Nos. 845 and 845-A without modification.²⁶

b. Commission Determination

14. We find that PSCo's proposed revisions regarding the option to build comply with the requirements of Order Nos. 845 and 845-A because PSCo adopts the Commission's *pro forma* LGIP and *pro forma* LGIA revisions without modification.

3. Dispute Resolution

15. In Order No. 845, the Commission revised the *pro forma* LGIP by adding new Section 13.5.5, which establishes generator interconnection dispute resolution procedures that allow a disputing party to unilaterally seek non-binding dispute resolution.²⁷ The Commission established these new procedures because dispute resolution was previously unavailable when the parties did not mutually agree to pursue a binding arbitration under Section 13.5 of the pre-Order No. 845 *pro forma* LGIP. The Commission further explained that participation in the new non-binding dispute resolution process in *pro forma* LGIP Section 13.5.5 does not preclude disputing parties from pursuing binding

²² Order No. 845-A, 166 FERC ¶ 61,137 at P 68.

²³ *Id.* P 61.

²⁴ *Id.* P 75.

²⁵ *Id.* P 33.

²⁶ PSCo May 15, 2019 Compliance Filing at 2.

²⁷ Order No. 845, 163 FERC ¶ 61,043 at P 133; *see also pro forma* LGIP § 13.5.5.

arbitration after the conclusion of the non-binding dispute resolution process if they seek a binding result.²⁸

a. PSCo's Compliance Filing

16. PSCo states that it adopts the Commission's *pro forma* LGIP revisions for dispute resolution as required by Order Nos. 845 and 845-A without modification.²⁹

b. Commission Determination

17. We find that PSCo's proposed LGIP revisions regarding dispute resolution procedures comply with the requirements of Order Nos. 845 and 845-A because PSCo adopts the Commission's *pro forma* revisions without modification.

4. Identification and Definition of Contingent Facilities

18. In Order No. 845, the Commission added a new definition to Section 1 of the *pro forma* LGIP, providing that contingent facilities shall mean those unbuilt interconnection facilities and network upgrades upon which the interconnection request's costs, timing, and study findings are dependent, and if delayed or not built, could cause a need for restudies of the interconnection request or a reassessment of the interconnection facilities and/or network upgrades and/or costs and timing.³⁰ The Commission also added new Section 3.8 to the *pro forma* LGIP, which requires transmission providers to include, within Section 3.8, a method for identifying the contingent facilities that they will provide to the interconnection customer at the conclusion of the system impact study and include in the interconnection customer's generator interconnection agreement.³¹ The Commission specified that the method must be sufficiently transparent to determine why a specific contingent facility was identified and how it relates to the interconnection request.³² The Commission stated that this transparency will ensure that the method is applied on a non-discriminatory basis.³³ The Commission further required

²⁸ Order No. 845, 163 FERC ¶ 61,043 at P 139.

²⁹ PSCo May 15, 2019 Compliance Filing at 2.

³⁰ Order No. 845, 163 FERC ¶ 61,043 at P 218; *see also pro forma* LGIP § 1 (Definitions).

³¹ Order No. 845, 163 FERC ¶ 61,043 at P 199.

³² *Id.*; *see also pro forma* LGIP § 3.8.

³³ Order No. 845, 163 FERC ¶ 61,043 at P 200.

that transmission providers provide, upon the interconnection customer's request, the estimated network upgrade costs and estimated in-service completion date associated with each identified contingent facility when this information is readily available and not commercially sensitive.³⁴

a. PSCo's Compliance Filing

19. PSCo states that it proposes to adopt the *pro forma* definition of contingent facilities as required by Order No. 845 without modification. In addition, PSCo's proposed revisions to LGIP Section 3.8 provide that contingent facilities will be any unbuilt interconnection facility and/or network upgrade included in the study model that is necessary, as determined through technical studies such as power flow, short circuit and/or stability analysis, to accommodate the interconnection request. Network upgrades will include both network upgrades planned by PSCo or affected systems in the base case as well as those network upgrades identified for higher queued interconnection requests. Additionally, all new interconnection facilities and/or network upgrades identified by PSCo and affected systems, as required for the current interconnection request will also be identified as contingent facilities. PSCo states that these interconnection facilities and/or network upgrades will be identified in the system impact study report, the interconnection facilities study report, the LGIA, and any associated restudies. PSCo also adopts the *pro forma* language on the provision of estimated interconnection facility and/or network upgrade costs and estimated in-service completion date of each identified contingent facility upon request of the interconnection customer, when this information is readily available and not commercially sensitive.³⁵

b. Commission Determination

20. We find that the revised provisions that identify and describe PSCo's method for determining contingent facilities, as PSCo proposes in its LGIP, partially comply with the requirements of Order Nos. 845 and 845-A. We find that PSCo complies with the requirements of Order Nos. 845 and 845-A because PSCo has adopted the definition of contingent facilities and the language regarding the need for the transmission provider to include in LGIP Section 3.8 a method for identification of contingent facilities without modification. Further, PSCo's proposed Tariff revisions comply with the requirements related to providing estimated network upgrade costs and estimated in-service completion dates associated with contingent facilities to the interconnection customer.

³⁴ *Id.* P 199; *see also pro forma* LGIP § 3.8.

³⁵ PSCo May 15, 2019 Compliance Filing at 4.

21. However, as specified in Order No. 845, transmission providers must include in Section 3.8 of their LGIPs.³⁶ The Commission required that this method must provide sufficient transparency to determine why a specific contingent facility was identified and how it relates to the interconnection request.³⁷ The Commission also required that a transmission provider's method to identify contingent facilities should be transparent enough to ensure that it will be applied on a non-discriminatory basis.³⁸ PSCo's proposed Tariff revisions lack the requisite transparency required by Order Nos. 845 and 845-A because the proposed Tariff revisions do not detail the specific technical screens or analyses and the specific thresholds or criteria that PSCo will use as part of its method to identify contingent facilities.³⁹ Without this information, an interconnection customer will not understand how PSCo will evaluate potential contingent facilities to determine their relationship to an individual interconnection request.⁴⁰ Further, including provisions regarding specific thresholds or criteria in PSCo's LGIP will ensure PSCo's technical screens or analyses will be applied to interconnection requests on a consistent, not unduly discriminatory or preferential basis. Accordingly, we direct PSCo to file, within 60 days of the date of this order, a further compliance filing that includes in Section 3.8 of its LGIP the method it will use to determine contingent facilities, including technical screens or analyses it proposes to use to identify these facilities. We also require that PSCo include in LGIP Section 3.8, the specific thresholds or criteria it will use in its technical screens or analysis to achieve the level of transparency required by Order No. 845.

5. Transparency Regarding Study Models and Assumptions

22. In Order No. 845, the Commission revised Section 2.3 of the *pro forma* LGIP to require transmission providers to maintain network models and underlying assumptions on either an Open Access Same-Time Information System (OASIS) site or a password-protected website. If the transmission provider posts this information on a password-protected website, a link to the information must be provided on its OASIS site. Revised

³⁶ Order No. 845, 163 FERC ¶ 61,043 at P 199.

³⁷ *Id.* P 200.

³⁸ *Id.*

³⁹ Order No. 845 declined to implement a standard threshold or criteria, such as a specific distribution factor threshold, because different thresholds may be more appropriate for different queue types and geographical footprints. Order No. 845, 163 FERC ¶ 61,043 at P 220.

⁴⁰ See *pro forma* LGIP § 3.8 (“The method shall be sufficiently transparent to determine why a specific Contingent Facility was identified”).

pro forma LGIP Section 2.3 also requires that “network models and underlying assumptions reasonably represent those used during the most recent interconnection study and be representative of current system conditions.”⁴¹ In addition, the Commission revised *pro forma* LGIP Section 2.3 to allow transmission providers to require interconnection customers, OASIS site users, and password-protected website users to sign a confidentiality agreement before the release of commercially sensitive information or critical energy infrastructure information (CEII).⁴²

23. In Order No. 845-A, the Commission reiterated that neither the Commission’s CEII regulations nor Order No. 845 precludes a transmission provider from taking necessary steps to protect information within its custody or control to ensure the safety and security of the electric grid.⁴³ The Commission also clarified that, to the extent any party would like to use the Commission’s CEII regulations as a model for evaluating entities that request network model information and assumptions (prior to signing a non-disclosure agreement), it may do so.⁴⁴ The Commission further clarified that the phrase “current system conditions” does not require transmission providers to maintain network models that reflect current real-time operating conditions of the transmission provider’s system. Instead, the network model information should reflect the system conditions currently used in interconnection studies.⁴⁵

a. PSCo’s Compliance Filing

24. PSCo states that it adopts the Commission’s *pro forma* LGIP revisions for transparency regarding revised study models as required by Commission regulations without modification.⁴⁶

⁴¹ Order No. 845, 163 FERC ¶ 61,043 at P 236.

⁴² *Id.*; see also *pro forma* LGIP § 2.3.

⁴³ Order No. 845-A, 166 FERC ¶ 61,137 at P 84 (citing Order No. 845, 163 FERC ¶ 61,043 at P 241).

⁴⁴ *Id.* P 85 (citing 18 C.F.R. § 388.113(g)(5)(i) (2019)).

⁴⁵ *Id.* P 88.

⁴⁶ PSCo May 15, 2019 Compliance Filing at 2.

b. Commission Determination

25. We find that the PSCo's proposed LGIP revisions regarding study models and assumptions comply with the requirements of Order Nos. 845 and 845-A because PSCo adopts the Commission's *pro forma* LGIP revisions without modification.

6. Definition of Generating Facility

26. In Order No. 845, the Commission revised the definition of "Generating Facility" to include electric storage resources and to allow electric storage resources to interconnect pursuant to the Commission-jurisdictional large generator interconnection processes. Specifically, the Commission revised the definition of "Generating Facility" in the *pro forma* LGIP and *pro forma* LGIA as:

Generating Facility shall mean Interconnection Customer's device for the production *and/or storage for later injection* of electricity identified in the Interconnection Request, but shall not include the interconnection customer's Interconnection Facilities.⁴⁷

The Commission found that this definitional change will reduce a potential barrier to large electric storage resources with a generating facility capacity above 20 MW that wish to interconnect pursuant to the terms in the *pro forma* LGIP and *pro forma* LGIA.⁴⁸

a. PSCo's Compliance Filing

27. PSCo states that it adopts the Commission's *pro forma* LGIP and *pro forma* LGIA definition of "Generating Facility" as required by Order Nos. 845 and 845-A without modification.⁴⁹

b. Commission Determination

28. We find that PSCo's revisions regarding the definition of a "Generating Facility" comply with the requirements of Order Nos. 845 and 845-A because PSCo adopts the Commission's *pro forma* LGIP and *pro forma* LGIA provisions without modification.

⁴⁷ Order No. 845, 163 FERC ¶ 61,043 at P 275 (additions italicized); *see also pro forma* LGIP § 1.

⁴⁸ Order No. 845, 163 FERC ¶ 61,043 at P 275.

⁴⁹ PSCo May 15, 2019 Compliance Filing at 2.

7. Interconnection Study Deadlines

29. In Order No. 845, the Commission modified the *pro forma* LGIP to add Sections 3.5.2 and 3.5.3, which require transmission providers to calculate and maintain on their OASIS sites or public websites summary statistics related to the timing of the transmission provider's processing of interconnection studies and to update those statistics on a quarterly basis.⁵⁰ In these Sections, the Commission included bracketed Tariff language to be completed by the transmission provider in accordance with the timelines established for the various studies in their LGIPs.⁵¹ The Commission also revised the *pro forma* LGIP to add Section 3.5.4 to require transmission providers to file informational reports with the Commission if a transmission provider exceeds its interconnection study deadlines for more than 25 percent of any study type for two consecutive calendar quarters.⁵² In adopting these reporting requirements, the Commission found that the reporting requirements strike a reasonable balance between providing increased transparency and information to interconnection customers and not unduly burdening transmission providers.⁵³ In Order No. 845-A, the Commission revised *pro forma* LGIP Section 3.5.3 to clarify that the data reporting and retention requirements begin in the first calendar quarter of 2020.⁵⁴

a. PSCo's Compliance Filing

30. PSCo states that it adopts the Commission's *pro forma* LGIP statistics revisions as required by Order Nos. 845 and 845-A, but with modified Tariff section numbers. Additionally, PSCo proposes Tariff revisions to the LGIP feasibility study completion deadline of "forty-five (45) Calendar Days"; the LGIP system impact study completion deadline of "ninety (90) Calendar Days"; and the LGIP facilities study completion deadline of "ninety (90) or one hundred eighty (180) Calendar Days," as appropriate for each respective study.

⁵⁰ Order No. 845, 163 FERC ¶ 61,043 at P 305; *see also pro forma* LGIP §§ 3.5.2 and 3.5.3.

⁵¹ Order No. 845, 163 FERC ¶ 61,043 at P 305; *see also pro forma* LGIP §§ 3.5.2 and 3.5.3.

⁵² Order No. 845, 163 FERC ¶ 61,043 at P 305; *see also pro forma* LGIP § 3.5.4.

⁵³ Order No. 845, 163 FERC ¶ 61,043 at P 307.

⁵⁴ Order No. 845-A, 166 FERC ¶ 61,137 at P 107.

b. Commission Determination

31. We find that PSCo's proposed LGIP revisions regarding interconnection studies deadlines comply with the requirements of Order Nos. 845 and 845-A. PSCo's proposed Tariff revisions adopt the language provided in Order No. 845 without modification and replace the bracketed placeholders in *pro forma* LGIP Sections 3.5.1.1, 3.5.1.2, and 3.5.1.3 with timelines that align with the timelines already in its Tariff.

8. Requesting Interconnection Service below Generating Facility Capacity

32. In Order No. 845, the Commission modified Sections 3.1, 6.3, 7.3, 8.2, and Appendix 1 of the *pro forma* LGIP to allow interconnection customers to request interconnection service that is lower than the proposed generating facility's capacity,⁵⁵ recognizing the need for proper control technologies and flexibility for transmission providers to propose penalties to ensure that the generating facility does not inject energy above the requested level of service.⁵⁶

33. The Commission required, in *pro forma* LGIP revised Section 3.1, that transmission providers have a process in place to consider requests for interconnection service below the generating facility capacity. The Commission stipulated that such requests should be studied at the level of interconnection service requested for purposes of determining interconnection facilities, network upgrades, and associated costs, but that such requests may be subject to other studies at the full generating facility capacity to ensure safety and reliability of the system.⁵⁷ In addition, *pro forma* LGIP revised Section 3.1 states that the interconnection customer is responsible for all study costs and interconnection facility and/or network upgrade costs required for safety and reliability. The Commission also required in revised *pro forma* LGIP Section 3.1 that any necessary control technologies and/or protection systems be memorialized in the LGIA.

34. The Commission required, in *pro forma* LGIP revised Sections 6.3, 7.3, and 8.2, that the feasibility, system impact, and facilities studies be performed at the level of interconnection service that the interconnection customer requests, unless the transmission provider is otherwise required to study the full generating facility capacity

⁵⁵ The term generating facility capacity is defined as "the net capacity of the Generating Facility and the aggregate net capacity of the Generating Facility where it includes multiple energy production devices." *Pro forma* LGIA art. 1 (Definitions).

⁵⁶ Order No. 845, 163 FERC ¶ 61,043 at P 367; *see also pro forma* LGIP §§ 3.1, 6.3, 7.3, and 8.2 and *pro forma* LGIP app. 1.

⁵⁷ Order No. 845, 163 FERC ¶ 61,043 at PP 383-84.

due to safety and reliability concerns. The Commission stated that, if the transmission provider determines that additional network upgrades are necessary based on these studies, it must specify which additional network upgrade costs are based on which studies and provide a detailed explanation of why the additional network upgrades are necessary.⁵⁸

35. Finally, the Commission revised Sections 4.4.1 and 4.4.2 of the *pro forma* LGIP to allow an interconnection customer to reduce the size of its interconnection request either prior to returning to the transmission provider an executed system impact study agreement or an executed facilities study agreement.⁵⁹

a. PSCo's Compliance Filing

36. PSCo proposes to adopt the Commission's *pro forma* LGIP revisions that allow interconnection customers to request interconnection service that is lower than the proposed generating facility's capacity, as required by Order Nos. 845 and 845-A. PSCo also proposes additional language beyond what is included in the *pro forma* LGIP that specifically provides in Section 3.1 that the "Interconnection Customer may request a level of Interconnection Service below the Generating Facility Capacity." Additionally, however, PSCo's proposed Tariff revisions do not fully incorporate the *pro forma* LGIP language adopted by Order No. 845.⁶⁰ Order No. 845 adopted the following language as the second sentence of the final paragraph in *pro forma* LGIP Section 3.1:

These requests for Interconnection Service shall be studied at the level of Interconnection Service requested for purposes of Interconnection Facilities, Network Upgrades, *and associated costs*, but may be subject to other studies at the full Generating Facility Capacity to ensure safety and reliability

⁵⁸ *Id.* P 384. The Commission clarified that, if the transmission provider determines, based on good utility practice and related engineering considerations and after accounting for the proposed control technology, that studies at the full generating facility capacity are necessary to ensure safety and reliability of the transmission system when an interconnection customer requests interconnection service that is lower than full generating facility capacity, then it must provide a detailed explanation for such a determination in writing to the interconnection customer. *Id.*

⁵⁹ *Id.* P 406; *see also pro forma* LGIP §§ 4.4.1 and 4.4.2.

⁶⁰ *See* Order No. 845-A, 166 FERC ¶ 61,137 at P 117.

of the system, with the study costs borne by the Interconnection Customer.⁶¹

b. Commission Determination

37. We find that PSCo's proposed LGIP revisions that allow an interconnection customer to request interconnection service below its full generating facility capacity partially comply with the requirements of Order Nos. 845 and 845-A. PSCo adopts most of the *pro forma* LGIP language without modification, but with one addition to a sentence in Section 3.1. We find PSCo's proposed addition that specifies that the "Interconnection Customer may request a level of Interconnection Service below the Generating Facility Capacity" to be consistent with or superior to the *pro forma* language because it adds clarity to PSCo's Tariff. However, as discussed above, PSCo's revisions to Section 3.1 of its LGIP omit some of the *pro forma* LGIP language required by Order No. 845.⁶² Accordingly, we direct PSCo to file, within 60 days of the date of this order, a further compliance filing that incorporates the *pro forma* revisions to Section 3.1 of its LGIP, as required by Order No. 845.

9. Provisional Interconnection Service

38. In Order No. 845, the Commission required transmission providers to allow all interconnection customers to request provisional interconnection service.⁶³ The Commission explained that interconnection customers may seek provisional interconnection service when available studies or additional studies, as necessary, indicate that there is a level of interconnection service that can occur to accommodate an interconnection request without the construction of any additional interconnection facilities and/or network upgrades, and the interconnection customer wishes to make use of that level of interconnection service while the facilities required for its full interconnection request are completed.⁶⁴ To implement this service, the Commission revised the *pro forma* LGIP and *pro forma* LGIA to add a definition for "Provisional

⁶¹ Order No. 845, 163 FERC ¶ 61,043 at P 347; *see also id.* P 367. The italics indicate language adopted by Order No. 845 that PSCo's Tariff revisions failed to include. We recognize, however, that the *pro forma* LGIP that was available on the Commission's website failed to include that language.

⁶² *Id.* PP 347, 367, and app. B.

⁶³ Order No. 845, 163 FERC ¶ 61,043 at P 438.

⁶⁴ *Id.* P 441.

Interconnection Service”⁶⁵ and for a “Provisional Large Generator Interconnection Agreement.”⁶⁶

39. In addition, the Commission added *pro forma* LGIA article 5.9.2, which details the terms for provisional interconnection service.⁶⁷ The Commission also explained that transmission providers have the discretion to determine the frequency for updating provisional interconnection studies to account for changes to the transmission system to reassess system capacity available for provisional interconnection service and included bracketed tariff language to be completed by the transmission provider, to specify the frequency at which they perform such studies in their *pro forma* LGIA.⁶⁸ The Commission stated that interconnection customers are responsible for the costs for performing these provisional interconnection studies.⁶⁹

a. PSCo’s Compliance Filing

40. PSCo states that it adopts the Commission’s definitions of provisional interconnection service and provisional LGIA, and *pro forma* language in LGIA article 5.9.2, without modification. PSCo also proposes in Section 5.9.2 to study and update the maximum permissible output of the generating facility in the provisional LGIA “if necessary on a quarterly basis and at the Interconnection Customer’s expense.” PSCo proposes to use available studies if possible. PSCo states that if the system conditions have not changed from previous studies, the resulting maximum permissible output will not have changed, and that using available studies will decrease the cost burden of the Interconnection Customer to perform the studies. PSCo also proposes to add, in a new Appendix 5.2 to the LGIP, a standard provisional interconnection study agreement in order to facilitate and administer a study that evaluates the ability to provide provisional interconnection service, as contemplated by Order No. 845. PSCo states that the agreement is based on the *pro forma* optional study agreement, with a \$10,000 study deposit that is trued-up to actual costs when the study is complete. PSCo states that it

⁶⁵ *Pro forma* LGIP § 1 (Definitions); *pro forma* LGIA art. 1 (Definitions).

⁶⁶ *Pro forma* LGIP § 1 (Definitions); *pro forma* LGIP art. 1 (Definitions). The Commission declined, however, to adopt a separate *pro forma* provisional large generator interconnection agreement. Order No. 845, 163 FERC ¶ 61,043 at P 444.

⁶⁷ *Id.* P 438; *see also pro forma* LGIP § 5.9.2.

⁶⁸ Order No. 845, 163 FERC ¶ 61,043 at P 448.

⁶⁹ *Id.*

will file any executed or unexecuted provisional interconnection service agreements with the Commission.⁷⁰

b. Commission Determination

41. We find that PSCo's proposed LGIP and *pro forma* LGIA revisions regarding provisional interconnection service partially comply with the requirements of Order Nos. 845 and 845-A. PSCo's proposed LGIP revisions regarding provisional interconnection service comply because PSCo adopts the Commission's definitions of provisional interconnection service and provisional LGIA, and *pro forma* language in LGIA article 5.9.2, without modification. However, we find that PSCo's proposed revisions to *pro forma* LGIA article 5.9.2 do not comply with the requirements of Order Nos. 845 and 845-A because those revisions do not identify when it will or will not be necessary to update provisional interconnection studies. PSCo proposes to conduct updated provisional interconnection studies "if necessary on a quarterly basis."⁷¹ While the Commission gave the transmission provider discretion to determine the frequency for updating provisional interconnection studies in Order No. 845, PSCo's proposed inclusion of the phrase "if necessary" provides PSCo unfettered discretion to determine the frequency at which it will update provisional interconnection studies. Accordingly, we direct PSCo to file, within 60 days of the date of this order, a further compliance filing with revisions that either specify, in *pro forma* LGIA article 5.9.2, when the quarterly update to provisional interconnection service studies will not be necessary⁷² or remove the "if necessary" language from its revisions to *pro forma* LGIA article 5.9.2.

10. Surplus Interconnection Service

42. In Order No. 845, the Commission adopted *pro forma* LGIP Sections 1, 3.3, and 3.3.1 and *pro forma* LGIA article 1 to establish surplus interconnection service, which the Commission defined as any unneeded portion of interconnection service established in an LGIA such that if the surplus interconnection service is utilized the total amount of interconnection service at the point of interconnection would remain the same.⁷³ Surplus

⁷⁰ PSCo May 15, 2019 Compliance Filing at 4-6.

⁷¹ PSCo May 15, 2019 Compliance Filing at 5.

⁷² See, e.g., *Black Hills Colo. Elec., LLC*, 169 FERC ¶ 61,144, at P 41 (2019) (directing Black Hills to submit revisions stating that its periodic updates to provisional interconnection studies will not be necessary if no changes to the system occurred during the period).

⁷³ Order No. 845, 163 FERC ¶ 61,043 at P 467; see also *pro forma* LGIP § 1 (Definitions); *pro forma* LGIP art. 1 (Definitions).

interconnection service enables a new interconnection customer to utilize the unused portion of an existing interconnection customer's interconnection service within specific parameters.⁷⁴ The Commission required transmission providers to revise their tariffs to include the new definition of surplus interconnection service in their *pro forma* LGIP and *pro forma* LGIA, and provide in the *pro forma* LGIP an expedited interconnection process outside of the interconnection queue for surplus interconnection service.⁷⁵ That expedited process must allow affiliates of the existing interconnection customer to use surplus interconnection service for another interconnecting generating facility and allow for the transfer of surplus interconnection service that the existing interconnection customer or one of its affiliates does not intend to use.⁷⁶ The transmission provider must perform reactive power, short circuit/fault duty, and stability analyses studies as well as steady-state (thermal/voltage) analyses as necessary to ensure evaluation of all required reliability conditions to provide surplus interconnection service and ensure the reliable use of surplus interconnection service.⁷⁷ The original interconnection customer must be able to stipulate the amount of surplus interconnection service that is available, designate when that service is available, and describe any other conditions under which surplus interconnection service at the point of interconnection may be used.⁷⁸ When the original interconnection customer, the surplus interconnection service customer, and the transmission provider enter into a surplus interconnection service agreement, the transmission provider must file the agreement with the Commission because any surplus interconnection service agreement will be an agreement under the transmission provider's open access transmission tariff.⁷⁹

a. PSCo's Compliance Filing

43. PSCo states that it adopts the Commission's *pro forma* definition of surplus interconnection service, and complies with the Commission's directives to adopt new Sections 3.3 and 3.3.1 to the LGIP. In Section 3.3.2 of the LGIP, PSCo proposes an

⁷⁴ Order No. 845, 163 FERC ¶ 61,043 at P 467; Order No. 845-A, 166 FERC ¶ 61,137 at P 119.

⁷⁵ Order No. 845, 163 FERC ¶ 61,043 at P 467; *see also pro forma* LGIP §§ 3.3 and 3.3.1.

⁷⁶ Order No. 845, 163 FERC ¶ 61,043 at P 483; *see also pro forma* LGIP § 3.3.

⁷⁷ Order No. 845, 163 FERC ¶ 61,043 at PP 455, 467.

⁷⁸ *Id.* P 481.

⁷⁹ *Id.* P 499.

expedited interconnection process outside of the interconnection queue for surplus interconnection service.

44. PSCo proposes that the original interconnection customer or one of its affiliates shall have priority to utilize surplus interconnection service, and if the existing interconnection customer or one of its affiliates does not exercise its priority, then that service may be made available to other potential interconnection customers. PSCo proposes that the original interconnection customer may: (1) stipulate the amount of surplus interconnection service that is available; (2) designate when that service is available; and (3) describe any other conditions under which surplus interconnection service at the point of interconnection may be used.

45. PSCo explains that the associated surplus interconnection service is only available to the extent it does not impact the overall queue process because surplus interconnection service is only available up to the amount that can be accommodated without requiring new network upgrades. PSCo proposes that it may accept third-party studies demonstrating no adverse impact to the transmission provider's transmission system, but may require its own or additional studies at its discretion. PSCo adds that it will use available studies to the extent applicable, and that the interconnection customer requesting surplus interconnection service will be responsible for the cost of relevant studies. PSCo also notes that the evaluation of surplus interconnection service is a fast track process outside of the normal queue study,⁸⁰ and that PSCo will make reasonable efforts to complete the study within 60 days of execution of the surplus interconnection study agreement.⁸¹

46. In addition, PSCo proposes to add, in a new Appendix 5.3 to the LGIP, a standard surplus interconnection study agreement to facilitate the reliability-related studies as contemplated by Order No. 845. According to PSCo, Appendix 5.3 is similar to the *pro forma* optional study agreement, with a \$10,000 study deposit that is trued-up to actual costs when the study is complete.⁸² Finally, PSCo states that its proposed Tariff revisions make clear that surplus interconnection service agreements must be filed with the Commission.⁸³

⁸⁰ PSCo May 15, 2019 Compliance Filing at 6.

⁸¹ *Id.* at 9.

⁸² *Id.* at 10.

⁸³ *Id.* at 10.

b. Commission Determination

47. We find that PSCo's proposed LGIP and LGIA revisions regarding surplus interconnection service comply with the requirements of Order Nos. 845 and 845-A. PSCo adopts the *pro forma* LGIP and *pro forma* LGIA revisions for surplus interconnection service as required by Order Nos. 845 and 845-A without modification. We also find that PSCo's proposed surplus interconnection service process meets the requirements of Order Nos. 845 and 845-A because PSCo will evaluate surplus interconnection service requests outside of its non-surplus interconnection queue. Additionally, as required by Order Nos. 845 and 845-A, PSCo's proposed process requires that the transmission provider, original interconnection customer, and surplus interconnection service customer file a surplus interconnection service agreement with the Commission that includes the terms and conditions of surplus interconnection service.

11. Material Modifications and Incorporation of Advanced Technologies

48. In Order No. 845, the Commission modified Section 4.4.2(c) of the *pro forma* LGIP to allow an interconnection customer to incorporate certain technological advancements to its interconnection request, prior to the execution of the interconnection facilities study agreement,⁸⁴ without risking the loss of its queue position. The Commission required transmission providers to develop and include in their LGIPs a definition of permissible technological advancements that will create a category of technological changes that, by definition, do not constitute a material modification and, therefore, will not result in the loss of queue position.⁸⁵ In addition, the Commission modified Section 4.4.6 of the *pro forma* LGIP to require transmission providers to insert a technological change procedure that includes the requisite information and process that the transmission provider will follow to assess whether an interconnection customer's proposed technological advancement is a material modification.⁸⁶

⁸⁴ While the Commission clarified that interconnection customers may submit a technological advancement request up until execution of the facilities study agreement, the Commission stated that it will permit transmission providers to propose rules limiting the submission of technological advancement requests to a single point in the study process (prior to the execution of a facilities study agreement), to the extent the transmission provider believes it appropriate. Order No. 845, 163 FERC ¶ 61,043 at P 536.

⁸⁵ *Id.* P 518.

⁸⁶ *Id.*; see also *pro forma* LGIP § 4.4.6.

49. The Commission required that the technological change procedure specify what technological advancements can be incorporated at various stages of the interconnection process and clearly identify which requirements apply to the interconnection customer and which apply to the transmission provider.⁸⁷ Additionally, the technological change procedure must state that, if the interconnection customer seeks to incorporate technological advancements into its proposed generating facility, it should submit a technological advancement request, and the procedure must specify the information that the interconnection customer must submit as part of that request.⁸⁸

50. The Commission also required that the technological change procedure specify the conditions under which a study will or will not be necessary to determine whether a proposed technological advancement is a material modification.⁸⁹ The Commission explained that the technological change procedure must also state that, if a study is necessary to evaluate whether a particular technological advancement is a material modification, the transmission provider shall clearly indicate to the interconnection customer the types of information and/or study inputs that the interconnection customer must provide to the transmission provider, including, for example, study scenarios, modeling data, and any other assumptions.⁹⁰ In addition, the Commission required that the technological change procedure explain how the transmission provider will evaluate the technological advancement request to determine whether it is a material modification.⁹¹

51. Further, the Commission required that the technological change procedure outline a time frame of no more than 30 days after the interconnection customer submits a formal technological advancement request for the transmission provider to perform and complete any necessary additional studies.⁹² The Commission also found that, if the transmission provider determines that additional studies are necessary to evaluate whether a technological advancement is a material modification, the interconnection customer must tender a deposit, and the transmission provider must specify the amount of the deposit in

⁸⁷ Order No. 845, 163 FERC ¶ 61,043 at P 519.

⁸⁸ *Id.*

⁸⁹ *Id.*; Order No. 845-A, 166 FERC ¶ 61,137 at P 155.

⁹⁰ Order No. 845, 163 FERC ¶ 61,043 at 521.

⁹¹ *Id.*

⁹² *Id.* P 535.

the transmission provider's technological change procedure.⁹³ In addition, the Commission explained that, if the transmission provider cannot accommodate a proposed technological advancement without triggering the material modification provision of the *pro forma* LGIP, the transmission provider must provide an explanation to the interconnection customer regarding why the technological advancement is a material modification.⁹⁴

52. In Order No. 845-A, the Commission clarified that: (1) when studies are necessary, the interconnection customer's technological change request must demonstrate that the proposed incorporation of the technological change will result in electrical performance that is equal to or better than the electrical performance expected prior to the technological change and will not cause any reliability concerns; (2) if the interconnection customer cannot demonstrate in its technological change request that the proposed technological change would result in equal or better electrical performance, the change will be assessed pursuant to the existing material modification provisions in the *pro forma* LGIP; (3) information regarding electrical performance submitted by the interconnection customer is an input into the technological change study, and this factor alone is not determinative of whether a proposed technological change is a material modification; and (4) the determination of whether a proposed technological change (that the transmission provider does not otherwise include in its definition of permissible technological advancements) is a material modification should include an analysis of whether the proposed technological change materially impacts the timing and costs of lower-queued interconnection customers.⁹⁵

a. PSCo's Compliance Filing

53. PSCo proposes the following definition of permissible technological advancement:

Permissible Technological Advancement shall mean modification to equipment that (1) results in electrical performance that is equal to or better than the electrical performance expected prior to the technology change, (2) does not cause any reliability concerns, (3) does not degrade the electrical characteristics of the generating equipment (e.g., the ratings, impedances, efficiencies, capabilities, and

⁹³ *Id.* P 534. The Commission set the default deposit amount at \$10,000 but stated that a transmission provider may propose a reasonable alternative deposit amount in its compliance filing and include justification supporting this alternative amount. *Id.*

⁹⁴ *Id.* P 522.

⁹⁵ Order No. 845-A, 166 FERC ¶ 61,137 at P 155.

performance of the equipment under steady-state and dynamic conditions) and (4) does not have a material impact on the cost or timing of any Interconnection Request with a later queue priority date, and is therefore not a Material Modification. A Permissible Technological Advancement is a change in equipment that may achieve cost or grid performance efficiencies that may include turbines, inverters, plant supervisory controls or other devices that may affect a generating facility's ability to provide ancillary services but does not include changes in generation technology type or fuel type.

PSCo maintains that this proposed definition complies with the directives in Order No. 845, by including modifications of equipment that results in equal to or better performance while not causing reliability concerns.⁹⁶

54. PSCo's revisions in Section 4.4.6 of the LGIP provide that the process for evaluating permissible technological advancements starts by the interconnection customer's request for the modification and provision of evidence that the modification meets the definition of permissible technological advancement, any time prior to the return of the signed interconnection facilities study agreement. If PSCo determines from the data provided in the interconnection customer's request that the modification meets the definition of permissible technological advancement, then the requested modification is incorporated into the interconnection request. If the information provided by the interconnection customer is not sufficient to determine whether the proposed change meets the definition of permissible technological advancement, PSCo proposes to inform the interconnection customer of additional information required to complete a study that evaluates if the proposed change meets the definition of permissible technological advancement. In this study, PSCo proposes to evaluate the request by: (1) representing the new equipment in the study models; (2) rerunning any completed studies; and (3) comparing the new study results with the study results prior to the change. If the proposed technology fails to meet the definition of a permissible technological advancement, then the request is deemed to be a material modification. In such cases, the study report shall provide an explanation regarding why the technological advancement is a material modification. The interconnection customer can choose to abandon the request and retain its queue position or choose to proceed with the request and reenter the queue with a new queue position.

55. PSCo's proposed Tariff revisions indicate that the interconnection customer will provide a study deposit of \$10,000 if the information provided by the interconnection

⁹⁶ PSCo May 15, 2019 Compliance Filing at 11.

customer is not sufficient to determine if the proposed changes meet the definition of permissible technological advancement, and a study is necessary for the determination. PSCo proposes that the study will be completed within 30 days of receiving the \$10,000 study deposit, and any necessary data as required to conduct the studies.⁹⁷ PSCo's proposed Tariff revision states that transmission provider shall either refund any overcharge or charge for any shortages for the costs of the study that exceed the deposit amount, and that this cost shall be billed separately from other interconnection studies. PSCo asserts that these proposed modifications fully conform to Commission guidance and should be approved as proposed.⁹⁸

b. Commission Determination

56. We find that PSCo's proposed LGIP revisions to incorporate a definition of a permissible technological advancement and a technological change procedure partially comply with the requirements of Order Nos. 845 and 845-A. Specifically, we find that PSCo's proposed definition of a permissible technological advancement meets the Commission's requirement to provide a category of technological change that does not constitute a material modification.

57. With regard to the deadline for completion of a technological advancement request, Order No. 845 provides that the determination of whether a change is a material modification must be made within 30 days of the initial request.⁹⁹ However, PSCo's proposed revisions to Section 4.4.6.3 of its Tariff provide that the study will be completed within 30 days of receiving the *study deposit*. Further, Section 4.4.6 of PSCo's Tariff contains an incorrect section reference to Section 4.4.4, which should reference to Section 4.4.6. Accordingly, we direct PSCo to file, within 60 days of the date of this order, a further compliance filing that revises the incorrect section reference and the proposed technological change procedure to provide that PSCo will determine whether or not a technological advancement is a material modification within 30 calendar days of receipt of the initial request.

⁹⁷ *Id.* at 12.

⁹⁸ *Id.* at 15.

⁹⁹ Order No. 845, 163 FERC ¶ 61,043 at P 535; Order No. 845-A, 166 FERC ¶ 61,137 at P 155.

The Commission orders:

(A) PSCo's compliance filing is hereby accepted, effective May 22, 2019, subject to a further compliance filing, as discussed in the body of this order.

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

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.