169 FERC ¶ 61,146
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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

Portland General Electric Company — Docket Nos. ER19-1927-000, ER19-1927-001

ORDER ON COMPLIANCE

(Issued November 22, 2019)

1. On May 22, 2019, as amended on July 8, 2019, Portland General Electric Company (Portland General) submitted proposed revisions to its Open Access Transmission Tariff (Tariff) in compliance with the requirements of Order Nos. 845 and 845-A,[1] which amended 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 Portland General's filing partially complies with the requirements of Order Nos. 845 and 845-A. Accordingly, we accept Portland General's compliance filing, effective May 22, 2019, and direct Portland General 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

[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.

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, 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 facilities[4] and stand alone network upgrades[5] 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

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[3] *Id.,* 163 FERC ¶ 61,043 at 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 article 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." *Pro forma* LGIA article 1 (Definitions).

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

[7] *Id.* P 3.

contingent facilities;[8] (2) required transmission providers to list the specific study 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 service[10] 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. Portland General's Compliance Filing

6. Portland General states that it proposes revisions to Attachment O and the applicable appendices of its Tariff as required by Order Nos. 845 and 845-A. Portland General requests that the proposed revisions to its Tariff become effective on May 22, 2019.

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[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 Interconnection Request or a reassessment of the Interconnection Facilities and/or Network Upgrades and/or costs and timing." *Pro Forma* LGIP Section 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." Order No. 845, 163 FERC ¶ 61,043 at P 459.

[11] *Id*. P 5.

III. Notice and Responsive Pleadings

7. Notice of Portland General's compliance filing was published in the *Federal Register*, 84 Fed. Reg. 24,770 (2019), with interventions and protests due on or before June 12, 2019. None was filed.

8. On June 13, 2019, Commission staff issued a deficiency letter that requested additional clarification regarding Portland General's procedure for allowing surplus interconnection service (Deficiency Letter). On July 8, 2019, Portland General filed its response to the Deficiency Letter (Deficiency Response), which included additional language to be added to its LGIP (July 8, 2019 Amendment). Notice of Portland General's Deficiency Response and July 8, 2019 Amendment was published in the Federal Register, 84 Fed. Reg. 33250 (2019), with interventions and protests due on or before July 29, 2019. None was filed.

IV. Discussion

A. Substantive Matters

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

1. Interconnection Customer's Option to Build

10. 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.[12] 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.[13] The

[12] *Id*. PP 85-87.

[13] *Standardization of Generator Interconnection Agreements and Procedures*, Order No. 2003, 104 FERC ¶ 61,103, at P 353 (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*

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."[14]

11. 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 provider does not consider a specific network upgrade to be a stand alone network upgrade;[15] and (2) clarify that the option to build does not apply to stand alone network upgrades on affected systems.[16] 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.[17] 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.[18]

a. Portland General's Compliance Filing

12. Portland General proposes revisions to Section 1 of its LGIP and articles 5.1, 5.1.3, 5.1.4, and 5.2 of its *pro forma* LGIA to implement the changes to the Commission's *pro forma* LGIA set forth in Order Nos. 845 and 845-A, without modification.

b. Commission Determination

13. We find that the option to build provisions that Portland General proposes to its *pro forma* LGIA and its *pro forma* LGIP comply with the requirements of Order

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of Regulatory Util. Comm'rs v. FERC, 475 F.3d 1277 (D.C. Cir. 2007), *cert. denied*, 552 U.S. 1230 (2008); *see also pro forma* LGIP Section 5.1.3.

[14] Order No. 845, 163 FERC ¶ 61,043 at P 85.

[15] Order No. 845-A, 166 FERC ¶ 61,137 at P 68.

[16] *Id*. P 61.

[17] *Id*. P 75.

[18] *Id*. P 33.

Nos. 845 and 845-A because Portland General incorporates the *pro forma* LGIA and *pro forma* LGIP provisions without modification.

2. Dispute Resolution

14. 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.[19] 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 arbitration after the conclusion of the non-binding dispute resolution process if they seek a binding result.[20]

a. Portland General's Compliance Filing

15. Portland General proposes revisions to its LGIP to add Section 13.5.5, which adopts the Commission's *pro forma* LGIP provisions as required by Order Nos. 845 and 845-A without modification.[21]

b. Commission Determination

16. We find that the revised dispute resolution procedures that Portland General proposes in its LGIP comply with the requirements of Order Nos. 845 and 845-A because Portland General has proposed to adopt Section 13.5.5 of the Commission's *pro forma* LGIP without modification.

3. Identification and Definition of Contingent Facilities

17. 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

[19] Order No. 845, 163 FERC ¶ 61,043 at P 133; *see also pro forma* LGIP Section 13.5.5.

[20] Order No. 845, 163 FERC ¶ 61,043 atP 139.

[21] Portland General LGIP Section 13.5.5.

need for restudies of the interconnection request or a reassessment of the interconnection facilities and/or network upgrades and/or costs and timing.[22] 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.[23] 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.[24] The Commission stated that this transparency will ensure that the method is applied on a non-discriminatory basis.[25] The Commission further required 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.[26]

a. Portland General's Compliance Filing

18. Portland General proposes to revise its LGIP to define contingent facilities as 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 interconnection request or a reassessment of the interconnection facilities and/or network upgrades and/or costs and timing. Portland General also adopts the LGIP Section 3.8 revisions that require it to include a method for identifying contingent facilities to be provided to the interconnection customer at the conclusion of the system impact study and included in the interconnection customer's *pro forma* LGIA.

19. In Section 3.8.1 of its LGIP, Portland General also proposes a five-step method for identifying and listing contingent facilities. The first step includes the transmission provider reviewing any applicable interconnection study associated with generating facilities that have a higher-queued request. The second step requires the transmission provider to make note that unbuilt interconnection facilities and network upgrades with

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

[23] Order No. 845, 163 FERC ¶ 61,043 at P 199.

[24] *Id*.; *see also pro forma* LGIP Section 3.8.

[25] Order No. 845, 163 FERC ¶ 61,043 at P 200.

[26] *Id*. P 199; *see also pro forma* LGIP Section 3.8.

higher-queued positions will be subject to further consideration during the performance of the interconnection customer's system impact study. The third step provides that, following the transmission provider identifying the system impacts of the proposed interconnection on the reliability of its transmission system, the transmission provider is to perform a further assessment to determine whether the interconnection customer's costs, timing, or study findings are dependent upon unbuilt interconnection facilities or network upgrades associated with higher-queued interconnection requests. The fourth step provides that each unbuilt interconnection facility or network upgrade that the interconnection customer's study findings are dependent on shall be referred to as contingent facilities. The fifth step provides that, in the system impact study, the transmission provider is to explain why each listed contingent facility was identified as such, and how it relates to the interconnection customer's interconnection request.

20. Additionally, proposed Section 3.8.2 requires that upon request of the interconnection customer, Portland General must provide the estimated costs of interconnection facilities and network upgrades, and estimated in-service completion times of each contingent facility identified in the system impact study. Portland General's revisions to Section 3.8.3 provide that any facilities identified at the conclusion of the system impact study as contingent to an interconnection request will subsequently be included in the interconnection customer's LGIA, to the extent they are still applicable.

b. Commission Determination

21. We find that Portland General's proposed definition of contingent facilities adopts the Commission's revisions to the *pro forma* LGIP and thus complies with the requirements of Order Nos. 845 and 845-A.

22. We find that the proposed LGIP provisions that identify and describe Portland General's method for determining contingent facilities partially comply with the requirements of Order Nos. 845 and 845-A. Portland General's proposed Tariff revisions comply with the requirements because they provide a step-by-step method for determining contingent facilities, and require Portland General to perform an assessment to determine whether the interconnection customer's costs, timing, or study findings are dependent upon unbuilt interconnection facilities or network upgrades associated with higher-queued interconnection requests. Further, the method includes an explanation for why each listed contingent facility was identified as such, and how it relates to the interconnection customer's interconnection request.

23. However, Portland General's proposed method partially complies with Order No. 845's transparency requirements. As specified in Order No. 845, transmission providers must include, in Section 3.8 of their LGIPs, a method for determining

contingent facilities.[27] 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.[28] The Commission also required that a transmission provider's method to identify contingent facilities be transparent enough to ensure that it will be applied on a non-discriminatory basis.[29] Portland General's proposed Tariff revisions lack the requisite transparency required by Orders No. 845 and 845-A because the proposed Tariff revisions do not detail the specific thresholds or criteria that Portland General will use as part of its method to identify contingent facilities.[30] Without this information, an interconnection customer will not understand how Portland General will evaluate potential contingent facilities to determine their relationship to an individual interconnection request.[31] Further, including provisions regarding specific thresholds or criteria in Portland General's LGIP will ensure Portland General's technical screens or analyses will be applied to interconnection requests on a consistent, not unduly discriminatory or preferential basis. Accordingly, we direct Portland General to file, within 60 days of the date of this order, a further compliance filing that includes the specific thresholds or criteria to achieve the level of transparency required by Order No. 845.

4. Transparency Regarding Study Models and Assumptions

24. 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 *pro forma* LGIP Section 2.3 also requires that "network models and underlying assumptions reasonably represent those used during the most recent interconnection study

[27] Order No. 845, 163 FERC ¶ 61,043 at P 199.

[28] *Id*. P 200.

[29] *Id*.

[30] The Commission 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. *Id*. P 220.

[31] *See pro forma* LGIP Section 3.8 ("The method shall be sufficiently transparent to determine why a specific Contingent Facility was identified").

and be representative of current system conditions."[32] 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).[33]

25. 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.[34] 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.[35] 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.[36]

a. Portland General's Compliance Filing

26. Portland General proposes revisions to its study model provisions in its LGIP to implement the changes to the Commission's *pro forma* LGIP set forth in Order Nos. 845 and 845-A without modification.

b. Commission Determination

27. We find that the revised study model provisions that Portland General proposes in its LGIP comply with the requirements of Order Nos. 845 and 845-A because Portland General adopts the provisions of the revised Section 2.3 of the Commission's *pro forma* LGIP without modification.

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[32] Order No. 845, 163 FERC ¶ 61,043 at P 236.

[33] *Id.*; *see also pro forma* LGIP Section 2.3.

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

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

[36] *Id*. P 88.

5. Definition of Generating Facility

28. 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.[37]

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.[38]

a. Portland General's Compliance Filing

29. Portland General proposes revisions to its LGIP and *pro forma* LGIA to adopt the revised definition of a "Generating Facility" in accordance with the changes in the Commission's *pro forma* LGIP and *pro forma* LGIA, set forth in Order Nos. 845 and 845-A without modification.

b. Commission Determination

30. We find that the revised provisions related to the definition of "Generating Facility" that Portland General proposes in its LGIP and *pro forma* LGIA comply with the requirements of Order Nos. 845 and 845-A because Portland General includes the definition set forth in the Commission's *pro forma* LGIP and *pro forma* LGIA without modification.

6. Interconnection Study Deadlines

31. 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

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

[38] Order No. 845, 163 FERC ¶ 61,043 at P 275.

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. 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.[39] 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.[40] 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.[41] 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.[42]

a. Portland General's Compliance Filing

32. Portland General proposes revisions to its LGIP to add Sections 3.5.2, 3.5.3, and 3.5.4 to adopt the sections added to the Commission's *pro forma* LGIP, set forth in Order Nos. 845 and 845-A, without modification except for minor edits for purposes of internal consistency and to populate the inserts indicated by brackets in the *pro forma* language. Portland General's proposed revisions insert the completion deadlines for the feasibility study, system impact study, and the facilities study consistent with the deadlines included in Sections 6, 7, and 8, respectively, of Portland General's LGIP.

b. Commission Determination

33. We find that the revised provisions that address Portland General's study deadline statistics and informational reporting requirements, as proposed in Portland General's LGIP, comply with the requirements of Order Nos. 845 and 845-A because Portland General proposes to include *pro forma* LGIP Sections 3.5.2, 3.5.3, and 3.5.4 without

[39] Order No. 845, 163 FERC ¶ 61,043 at P 305; *see also pro forma* LGIP Section 3.5.2 and 3.5.3.

[40] Order No. 845, 163 FERC ¶ 61,043 at P 305; *see also pro forma* LGIP Section 3.5.4.

[41] Order No. 845, 163 FERC ¶ 61,043 at P 307.

[42] Order No. 845-A, 166 FERC ¶ 61,137 at P 107.

modification, except for minor edits and to replace the bracketed placeholders with timelines that align with the timelines already in its Tariff.

7. Requesting Interconnection Service below Generating Facility Capacity

34. 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,[43] 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.[44]

35. 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.[45] 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 *pro forma* LGIP revised Section 3.1 that any necessary control technologies and/or protection systems be memorialized in the LGIA.

36. 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 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

[43] 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.

[44] Order No. 845, 163 FERC ¶ 61,043 at P 367; *see also pro forma* LGIP Sections 3.1, 6.3, 7.3 and 8.2, and *pro forma* LGIP Appendix 1.

[45] Order No. 845, 163 FERC ¶ 61,043 at PP 383 & 384.

studies and provide a detailed explanation of why the additional network upgrades are necessary.[46]

37. 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.[47]

a. Portland General Electric's Compliance Filing

38. Portland General proposes revisions to its LGIP that adopt the Commission's proposed reforms to Sections 3.1, 4.4.1, 4.4.2, 6.3, 7.3, and 8.2, and Appendix 1 to incorporate the language set forth in Order Nos. 845 and 845-A. However, Portland General's proposed Tariff revisions do not fully incorporate the *pro forma* LGIP language adopted by Order No. 845.[48] 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 of the system, with the study costs borne by the Interconnection Customer.[49]

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[46] *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.*

[47] *Id*. P 406; *see also pro forma* LGIP Section 4.4.1 and 4.4.2.

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

[49] 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 Portland General'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.

b. Commission Determination

39. We find that the revised provisions that allow an interconnection customer to request interconnection service below its full generating facility capacity, as proposed in Portland General's LGIP, partially comply with the requirements of Order Nos. 845 and 845-A because they incorporate most of the language required by those Orders without modification. However, as discussed above, Portland General's revisions to Section 3.1 of its LGIP omit some of the *pro forma* language required by Order No. 845.[50] Accordingly, we direct Portland General 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.

8. Provisional Interconnection Service

40. In Order No. 845, the Commission required transmission providers to allow all interconnection customers to request provisional interconnection service.[51] 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.[52] To implement this service, the Commission revised the *pro forma* LGIP and *pro forma* LGIA to add a definition for "Provisional Interconnection Service"[53] and for a "Provisional Large Generator Interconnection Agreement."[54]

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[50] *Id.* PP 347, 367, and Appendix B.

[51] Order No. 845, 163 FERC ¶ 61,043 at P 438.

[52] *Id*. P 441.

[53] *Pro forma* LGIP Section 1 (Definitions); *pro forma* LGIA article 1 (Definitions).

[54] *Pro forma* LGIP Section 1 (Definitions); *pro forma* LGIP article 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.

41. In addition, the Commission added *pro forma* LGIA article 5.9.2, which details the terms for provisional interconnection service.[55] 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.[56] The Commission stated that interconnection customers are responsible for the costs for performing these provisional interconnection studies.[57]

a. Portland General's Compliance Filing

42. Portland General proposes revisions to add the required definitions related to provisional service to its LGIP and *pro forma* LGIA, without modification. Portland General also adds article 5.9.2 to its *pro forma* LGIA to implement the changes set forth in Order Nos. 845 and 845-A. Portland General inserted language for the bracket in the *pro forma* article 5.9.2 providing that it will study and update the maximum permissible output of the generating facility under provisional service on an annual basis.

b. Commission Determination

43. We find that the revised provisions that establish provisional interconnection service, as proposed in Portland General's *pro forma* LGIA, comply with the requirements of Order Nos. 845 and 845-A because Portland General proposes to incorporate into its LGIP and *pro forma* LGIA the required definitions without modification, and incorporate article 5.9.2 of the Commission's *pro forma* LGIA without modification except to fill in the bracketed section to state that it will study and update the maximum permissible output of the generating facility under provisional service on an annual basis.

9. Surplus Interconnection Service

44. 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

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[55] *Id.* P 438; *see also pro forma* LGIP Section 5.9.2.

[56] Order No. 845, 163 FERC ¶ 61,043 at P 448.

[57] *Id*.

interconnection service at the point of interconnection would remain the same.[58] Surplus interconnection service enables a new interconnection customer to utilize the unused portion of an existing interconnection customer's interconnection service within specific parameters.[59] 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.[60] 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.[61] 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.[62] 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.[63] 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.[64]

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[58] Order No. 845, 163 FERC ¶ 61,043 at P 467; *see also pro forma* LGIP Section 1 (Definitions); *pro forma* LGIP article 1 (Definitions).

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

[60] Order No. 845, 163 FERC ¶ 61,043 at P 467; *see also pro forma* LGIP Section 3.3 and 3.3.1.

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

[62] Order No. 845, 163 FERC ¶ 61,043 at PP 455 & 467.

[63] *Id*. P 481.

[64] *Id*. P 499.

a. Portland General's Compliance Filing

45. Portland General proposes revisions to add Sections 1, 3.3 and 3.3.1 to its LGIP, and article 1 to its *pro forma* LGIA, to comply with the Commission's directives in Order Nos. 845 and 845-A. Portland General adopts the Commission's *pro forma* LGIP and *pro forma* LGIA revisions for surplus interconnection service as required by Order Nos. 845 and 845-A without modification.

46. Portland General proposes that a surplus interconnection service customer must first submit a request in writing that includes the amount of surplus interconnection service sought, when such surplus interconnection service will be available, and any conditions under which such surplus interconnection service may be used. Portland General proposes to process surplus interconnection service requests on an expedited basis and separately from other requests pending in its non-surplus interconnection queue. Following receipt of a valid request, Portland General will establish a date agreeable to the original interconnection customer and any affiliated or third-party surplus interconnection service customer for the scoping meeting, to occur within 30 calendar days of receipt of the request.[65]

47. Following the scoping meeting, and provided the original interconnection customer's system impact study is available, Portland General will determine if the original system impact study is sufficient to evaluate the request for surplus interconnection service. If the original system impact study is not available, or is available but insufficient to enable Portland General to evaluate the surplus interconnection service request, then the surplus interconnection customer must execute a surplus interconnection service system impact study agreement and provide a $50,000 deposit. Upon receipt of the executed surplus interconnection service system impact study agreement and deposit, Portland General will initiate the system impact study. The surplus interconnection service system impact study will consist of reactive power, short circuit/fault duty, stability analyses, harmonic analysis, and any other studies deemed appropriate by Portland General.[66]

48. Portland General proposes that it will utilize existing studies to the extent that all required reliability conditions are studied when performing the surplus interconnection service system impact study. The resulting surplus interconnection service system impact study report will identify any additional interconnection facilities and findings that would affect eligibility for surplus interconnection service. Portland General will use reasonable efforts to complete the surplus interconnection service system impact study and issue the report within 90 calendar days after receipt of the surplus interconnection system impact

[65] Portland General LGIP Sections 3.3.2 and 3.3.3.

[66] Portland General LGIP Section 3.3.4.

study agreement, all of the modeling data, and required study deposit. At the request of the surplus interconnection customer or at any time Portland General determines that it will not complete the surplus interconnection service system impact study report within 90 calendar days, it will notify the surplus interconnection customer and provide an estimated completion date and an explanation of the reasons why additional time is required.[67]

49. Portland General proposes that, if any interconnection facilities and/or control technologies are identified as necessary for the utilization of the surplus interconnection service, the surplus interconnection customer must execute a surplus interconnection service facilities study agreement, and that the interconnection customer will be responsible for the actual cost of the surplus interconnection service facilities study.[68] Further, the surplus interconnection customer must deliver the executed surplus interconnection service facilities study agreement with an additional $50,000 deposit to be used in preparation of the surplus interconnection service facilities study and report.

50. Portland General provides that, within 45 calendar days of tendering the surplus interconnection service facilities study, or the surplus interconnection system impact study if no additional interconnection facilities or control technologies are required, it shall tender a draft Amended and Restated LGIA, together with draft appendices completed to the original interconnection customer and the surplus interconnection customer that will be utilizing the service.[69] Portland General also explains that it shall file the Amended and Restated LGIA with the Commission, together with its explanation of any matters as to which the parties to the LGIA disagree, and support for the costs that it proposes to charge to the surplus interconnection customer under the Amended and Restated LGIA.[70]

b. Commission Determination

51. We find that the provisions regarding surplus interconnection service as proposed by Portland General in its Compliance Filing, as revised by the July 8, 2019 Amendment, comply with the requirements of Order Nos. 845 and 845-A because they include without modification the definition of surplus interconnection service in its LGIP and *pro forma* LGIA, and the provisions in Section 3.3 and 3.3.1 of the Commission's *pro forma* LGIP. Further, Portland General includes a process in Sections 3.3.2 through 3.3.6 for utilizing

[67] Portland General LGIP Section 3.3.5.3.

[68] Portland General LGIP Section 3.3.5.1.

[69] Portland General LGIP Section 3.3.6.1.

[70] Portland General LGIP Section 3.3.6.3.

and transferring surplus interconnection service consistent with the requirements of Order Nos. 845 and 845-A.

10. Material Modifications and Incorporation of Advanced Technologies

52. 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,[71] 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.[72] 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.[73]

53. 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.[74] 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

[71] 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.

[72] *Id.* P 518.

[73] *Id.*; *see also pro forma* LGIP Section 4.4.6.

[74] Order No. 845, 163 FERC ¶ 61,043 at P 519.

technological advancement request, and the procedure must specify the information that the interconnection customer must submit as part of that request.[75]

54. 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.[76] 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.[77] 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.[78]

55. 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. 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 the transmission provider's technological change procedure.[79] 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

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[75] *Id*.

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

[77] Order No. 845, 163 FERC ¶ 61,043 at P 521.

[78] *Id*.

[79] Order No. 845, 163 FERC ¶ 61,043P 534. The Commission set the default deposit amount to $10,000, but stated that a transmission provider may propose a reasonable alternative deposit amount in its compliance filing and include a justification supporting this alternative amount. *Id.*

interconnection customer regarding why the technological advancement is a material modification.[80]

56. 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.[81]

a. Portland General's Compliance Filing

57. Portland General proposes in Section 1 of its LGIP to define a permissible technological advancement as:

> any new, upgraded, updated, or modified technological advancement proposed by an Interconnection Customer for incorporation in the design, construction, or operation of generation facilities that will not change the electrical characteristics of the Interconnection Request and will not require extensive studies to determine whether such a proposed change constitutes a Material Modification, as that term is defined in this LGIP. Such permissible changes may include advancements to turbines, inverters, plant supervisory controls, or other technological advancements to equipment that will provide cost efficiency and/or electrical performance benefits, or, may affect a generating facility's ability to provide ancillary services. However, such Permissible Technological Advancements do not include any additions to

[80] *Id.* P 522.

[81] Order No. 845-A, 166 FERC ¶ 61,137 at P 155.

> or change in the generation technology or fuel type. For all Permissible Technological Advancements, Interconnection Customer must demonstrate that the proposed incorporation of the technological advancement would result in electrical performance that is equal to or better than the electrical performance expected with the technology originally proposed with the Interconnection Customer's Interconnection Request.

58. Portland General proposes to add Section 4.4.6 of its LGIP to set forth a Technological Change Procedure. Portland General proposes to allow an interconnection customer to submit a request for a technological advancement to its generating facility at any time prior to the return of the executed interconnection facility study agreement. Portland General proposes to use reasonable efforts to complete the procedure within 30 days after receiving a request for incorporation of a technological advancement that contains all of the requirements from the interconnection customer, including: (1) a written request describing the change; (2) a $10,000 deposit; (3) an updated version of the interconnection request; (4) an analysis demonstrating that the change would result in equal or better performance and not cause reliability concerns; and (5) to the extent applicable, updated modeling data. Once Portland General receives the deposit and data from the interconnection customer, it proposes to evaluate whether the advancement is a material modification. Portland General's Section 4.4.6 also states that if Portland General determines that the proposed technological advancement would not change any of the parameters in Appendix 1 of the LGIP, then no study will be necessary, the deposit will be refunded, and the advancement will be permitted.

b. Commission Determination

59. We find that the revisions Portland General proposes in its LGIP to incorporate a definition of a permissible technological advancement and technological change procedure comply with the requirements of Order Nos. 845 and 845-A, with one exception. Specifically, in Order No. 845, the Commission declined to allow transmission providers to use reasonable efforts to meet the 30-day deadline for the technological change procedure.[82] We find that Portland General's proposal to use "reasonable efforts" to achieve this deadline does not comply with Order No. 845. Accordingly, we direct Portland General to file, within 60 days of the date of this order, a further compliance filing that revises its proposed Technological Change Procedure to state that it will complete its assessment under Section 4.4.6 within 30 days.

[82] Order No. 845, 163 FERC ¶ 61,043 at P 535.

The Commission orders:

(A) Portland General'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) Portland General 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)

Kimberly D. Bose,
Secretary.