

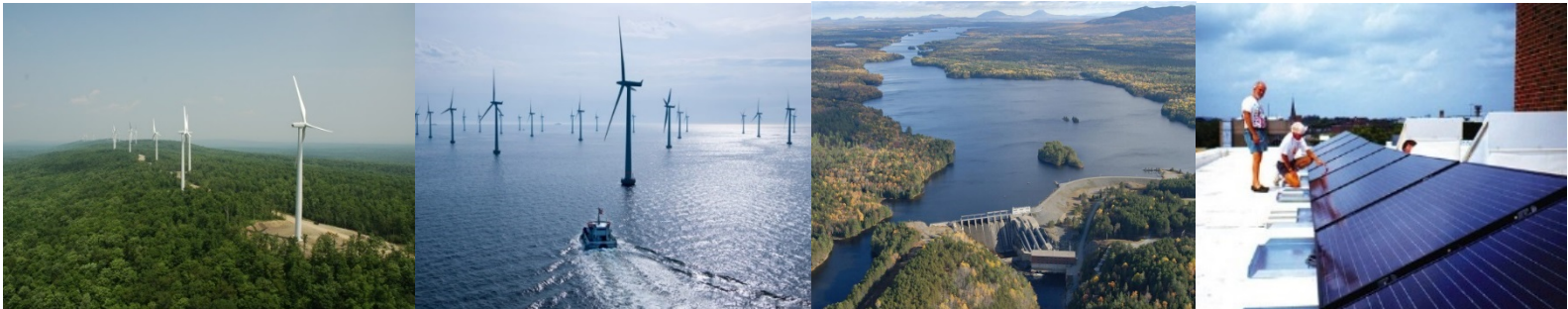


RENEW
Northeast

Amendment to Order 845/845A Compliance, Surplus Interconnection Service

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NEPOOL Transmission Committee Meeting



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About RENEW

An association of the renewable energy industry and environmental advocates united to promote renewable energy in the Northeast.



Background

- RENEW previously presented this amendment at the September 18, 2018 and March 27, 2019 TC meetings:
https://iso-ne.com/static-assets/documents/2018/09/a02a_renew_present.pdf
and
https://iso-ne.com/static-assets/documents/2019/03/a03b_tc_2019_3_27_renew_sis.pdf
- Order 845A made minor changes to the surplus interconnection service portion of Order 845, which were addressed in the March 27 presentation.

Surplus Interconnection Service Overview

- Order 845 calls for surplus interconnection service
 - to be made available for **any unneeded portion** of an existing generator’s interconnection service, either on a **continuous or periodic basis**,
 - to be made available for any new generator co-located with an existing generator **so long as no new Network Upgrades** would be required, and
 - to utilize an **expedited study process outside of the queue** to process such surplus interconnection service requests
- ISO’s proposal is inconsistent with the Order on these two points
 1. restricts surplus interconnection service to a continuously available MW quantity, not allowing periodically-available service as ordered, and
 2. restricts surplus interconnections to non-material modifications to existing generators, a different technical standard than O845A calls for.
- RENEW offers this amendment to make the proposal consistent with Order 845/845A on these two points.

Surplus Interconnection Service Overview

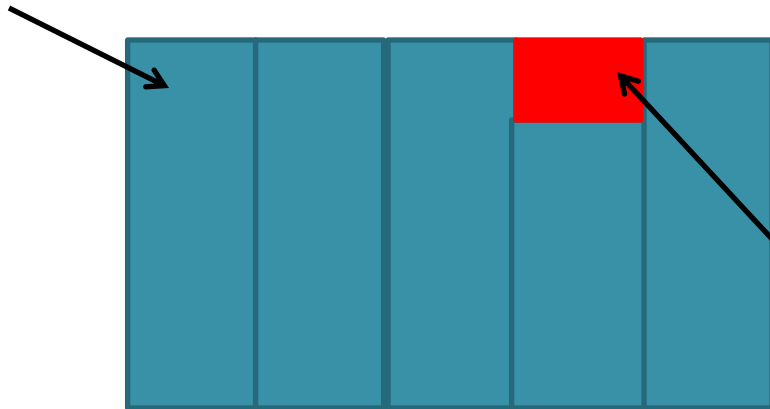
- RENEW recognizes that ISO's co-location process enables the interconnection of co-located generators that share interconnection service on a periodic basis.
 - To achieve this under ISO's proposal, a new Interconnection Request is required and the request would be processed through the standard interconnection queue procedures.
 - Order 845/845A explicitly call for this precise situation to be made possible through an expedited process outside of the queue.
- The fact that this end-result is possible to achieve through the queue process does not eliminate the requirement FERC set forth in its Order for there to be **an expedited process outside of the queue** to process such requests.
 - RENEW is not conflating the Surplus Interconnection Service reform with Reform #7 (Interconnection Service below Generating Facility capability)

1. Quantity of Surplus Interconnection Service

Creation of Surplus Interconnection Service

“We clarify that surplus interconnection service is created because generating facilities may not operate at full capacity **at all times.**”

Interconnection Service Used by Existing Generator



Unneeded portion of Interconnection Service,
Available for Surplus Interconnection Service
Customer

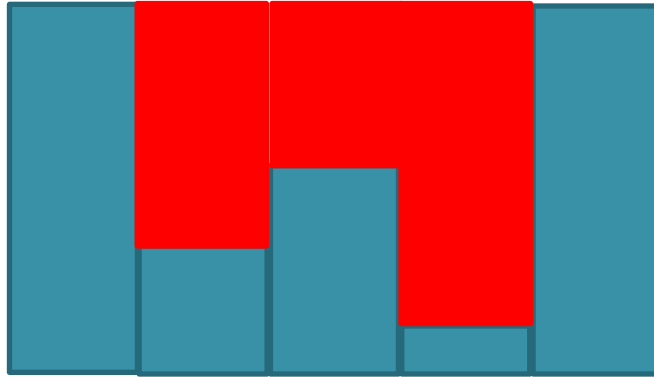
Creation of Surplus Interconnection Service

“This would include situations where existing generating facilities operate **infrequently**, such as peaker units...”



Creation of Surplus Interconnection Service

“...or operate **often** below their full generating facility capacity, such as variable generation.”



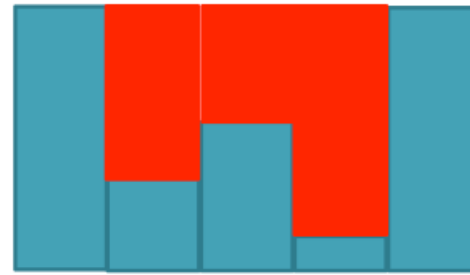
Creation of Surplus Interconnection Service

*“...this Final Rule will allow an existing interconnection customer to make a specified and limited amount of surplus interconnection service available...under a variety of circumstances, including, for example, on a **continuous basis** (i.e., a certain number of MW of surplus interconnection service always available for use by a co-located generating facility), **or** on a scheduled, **periodic basis** (i.e., a specified number of MW available intermittently)...”*

Continuous Basis



Periodic Basis



Quantity of Surplus Interconnection Service

- Order 845 very clear that surplus interconnection service may be for
 - a continuously available quantity or
 - a periodically available quantity.
- ISO definition limits surplus interconnection service to a fixed MW quantity in each season
 - The difference between the most recent SCC and interconnection service level

Quantity of Surplus Interconnection Service

- Order 845 proposed definition:
 - **Surplus Interconnection Service** shall mean any unneeded portion of Interconnection Service established in a Large Generator Interconnection Agreement, such that if Surplus Interconnection Service is utilized the total amount of Interconnection Service at the Point of Interconnection would remain the same.
- ISO proposed definition:
 - **Surplus Interconnection Service** shall mean a form of Interconnection Service that allows an Interconnection Customer to use any Unused Capability of Interconnection Service established in an Interconnection Agreement for an existing Generating Facility that has achieved Commercial Operation, such that if Surplus Interconnection Service is utilized the total amount of Interconnection Service at the same Point of Interconnection would remain the same.
 - **Unused Capability** shall mean: (i) in the case of NR Interconnection Service at an existing, commercial Generating Facility, for Summer, the Summer NR Capability minus the latest Seasonal Claimed Capability for Summer as corrected to 50 degrees F, and, for Winter, the Winter NR Capability minus the latest Seasonal Claimed Capability for Winter as corrected to 0 degrees F; and (ii) in the case of CNR Interconnection Service at an existing, commercial Generating Facility, for Summer, the Summer CNR Capability minus the latest Summer Qualified Capacity, and for Winter, the Winter CNR Capability minus the latest Winter Qualified Capacity.

Surplus Interconnection Service Order 845/845A vs. ISO proposal

Order 845/845A calls for unneeded interconnection service under all of these scenarios to be made available through a Surplus Interconnection Service process:



The ISO proposal only allows unneeded interconnection service under a single scenario (continuous availability) to be made available through a Surplus Interconnection Service process:



By restricting the definition of Surplus Interconnection Service, the ISO's proposal misses opportunities to achieve the benefits envisioned by FERC of an expedited process for such requests.

Quantity of Surplus Interconnection Service

Amendment to LGIP § 1 and LGIA Article 1:

Unused Capability shall mean: (i) in the case of NR Interconnection Service at an existing, commercial Generating Facility, a continuous or periodic scheduled MW quantity as specified in an Interconnection Agreement, not to exceed the existing, commercial Generating Facility's NR Interconnection Service, for Summer, the Summer NR Capability minus the latest Seasonal Claimed Capability for Summer as corrected to the 50 degree F, and, for Winter, the Winter NR Capability minus the latest Seasonal Claimed Capability for Winter as corrected to 0 degree F; and (ii) in the case of CNR Interconnection Service at an existing, commercial Generating Facility, for Summer, the Summer CNR Capability minus the latest Summer Qualified Capacity, and for Winter, the Winter CNR Capability minus the latest Winter Qualified Capacity.

Quantity of Surplus Interconnection Service

Amendment to LGIP § 3.3:

The total output of the Original Interconnection Customer's Generating Facility plus the Surplus Interconnection Customer's Generating Facility behind the same Point of Interconnection shall be limited to the maximum total amount of Interconnection Service granted to the Original Interconnection Customer as established in the Interconnection Agreement for the Original Interconnection Customer's Generating Facility. The Original Interconnection Customer must stipulate the amount of Surplus Interconnection Service that is available for use by the Surplus Interconnection Customer's Generating Facility, designate when that service is available, and describe any other conditions under which the Surplus Interconnection Service may be used. Surplus Interconnection Service shall only be available at the preexisting Point of Interconnection of the Original Interconnection Customer's Generating Facility.

Quantity of Surplus Interconnection Service

Amendment to Att C to App 1, Surplus Interconnection Service Request Form:

To request Surplus Interconnection Service, the Surplus Interconnection Customer shall provide the following:

...

4. The type of Interconnection Service (i.e., CNR Interconnection Service or NR Interconnection Service), ~~and~~ the amount of Unused Capability at that Interconnection Service available for the the Surplus Interconnection Customer's Generating Facility, when that service is available, and a description of any other conditions under which the Surplus Interconnection Service may be used.

2. Remove Eligibility Limitation to Non-Material Modifications

Remove Limitation to Non-Material Modifications

- ISO presentations state intention to limit surplus interconnection service to cases where the addition of the new generator would be a **non-material modification** to the existing generator.
- They note that a change is material if it takes more than 10 Business Days to determine it does not cause an adverse impact
- PP5-6 Appendix E says a change is material unless:
 - modification provides similar or better
 - dynamic voltage and stability performance
 - dynamic performance (better damping, smaller angular swing)
 - PSCAD model performance
 - total impedance increases (unless impedance change is less than 10%, power factor requirement is satisfied, and there is no pre-existing voltage problem)
 - X/R ratio stays the same or decreases
 - short circuit duty stays the same or decreases

Remove Limitation to Non-Material Modifications

- Limitation is inconsistent with Order 845
- Only limitations in Order 845 are:
 - new generator must be co-located at the original interconnection customer's previously studied and approved point of interconnection,
 - total combined generating output at the POI for both original and surplus interconnection customer shall not exceed the maximum level allowed under the original customer's LGIA, and
 - surplus interconnection service is only available at existing, operational generating facilities and shall cease to be available when the original interconnection customer retires (with one limited exception).
- Order 845A adds one additional limitation:
 - surplus interconnection service is only available up to the level that can be accommodated without requiring new network upgrades

Remove Limitation to Non-Material Modifications

- In Order 845A, FERC recognized that surplus interconnection customer may have “significantly different electrical characteristics than the original interconnection customer”
 - And those differences may sometimes result in the need for new network upgrades
- Order 845A limitation against new network upgrades meant to “address concerns regarding the potential impact of differences in electrical characteristics” between the existing and new generator
- ISO imposition of Material Modification eligibility threshold goes far beyond technical eligibility limitation clarified in Order 845A.

Remove Limitation to Non-Material Modifications

O.845 and O.845A Proforma 3.3.1:

*...Studies for Surplus Interconnection Service shall consist of reactive power, short circuit/fault duty, stability analyses, and any other appropriate studies. Steady-state (thermal/voltage) analyses may be performed as necessary to ensure that all required reliability conditions are studied. If the Surplus Interconnection Service was not studied under off-peak conditions, off-peak steady state analyses shall be performed to the required level necessary to demonstrate reliable operation of the Surplus Interconnection Service. If the original System Impact Study is not available for the Surplus Interconnection Service, both off-peak and peak analysis may need to be performed for the existing Generating Facility associated with the request for Surplus Interconnection Service. **The reactive power, short circuit/fault duty, stability, and steady-state analyses for Surplus Interconnection Service will identify any additional Interconnection Facilities and/or Network Upgrades necessary.***

Remove Limitation to Non-Material Modifications

Amendment to LGIP § 3.3.1:

...Studies for Surplus Interconnection Service shall consist of reactive power, short circuit/fault duty, stability analyses, and other appropriate studies. Steady-state (thermal/voltage) analyses may be performed as necessary to ensure that all required reliability conditions are studied. If the original Interconnection System Impact Study is not available for the Original Interconnection Customer's Generating Facility, limited analysis may need to be performed associated with the request for Surplus Interconnection Service, which may include, but not be limited to, both off-peak and peak analyses, reactive power, short circuit/fault duty, stability, and steady-state analyses, ~~to confirm the Surplus Interconnection Service request can be accommodated without the need for additional upgrades and a new Interconnection Request.~~ The reactive power, short circuit/fault duty, stability, and steady-state analyses for Surplus Interconnection Service will identify any additional Interconnection Facilities necessary and confirm that no new Network Upgrades are necessary. Any analyses shall be performed at the Surplus Interconnection Customer's expense.

Questions

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