

# Smart Inverter Working Group

March 30, 2023

1:00 – 2:30 pm

# UPDATED Proposed Tariff Language for Topic B.2

## **Mm5 - OPTION 12: Limited Export with Limited Generation Profile Utilizing Certified Power Control Systems That are Approved for Scheduling**

### Applicability:

The following are minimum requirements for limited export with limited generation profile (LGP) systems that use certified power control systems (PCS) with an open loop response time (OLRT) of no more than two seconds to maintain a level of export that is lower than the nameplate rating. It should be noted that other factors relevant to the Interconnection Study process may necessitate additional technical requirements that are not explicitly noted here.

1. Use a PCS that passes the requirements of the 2019 Underwriters Laboratories (UL) Power Control Systems Certification Requirements Decision (CRD) test protocol. LGP systems may use a PCS that passes later published revisions to the CRD test protocol, or may use a PCS that is certified to the UL 1741 Supplement SE. The NRTL evaluation must have determined that the PCS conforms to the export limiting functionality using a schedule in accordance with the relevant CRD or UL published Standard.
2. Use a PCS that is certified to accept and execute a schedule.
3. Use a PCS that is certified with an OLRT of two seconds or less as provided in the PCS's specification data sheets.
4. The PCS must reduce export to the approved export limit, or less, within two seconds of exceeding the approved export limit. A PCS that is certified with an open-loop response time of two seconds or less, and a time to reach steady state of ten seconds or less, meets this requirement.
5. Set the PCS to not exceed the proposed level of export.
6. Use only UL 1741 listed grid-support Non-Islanding inverters as approved by this tariff.
7. Maintain voltage fluctuations at the limits specified in Electric Rule 2

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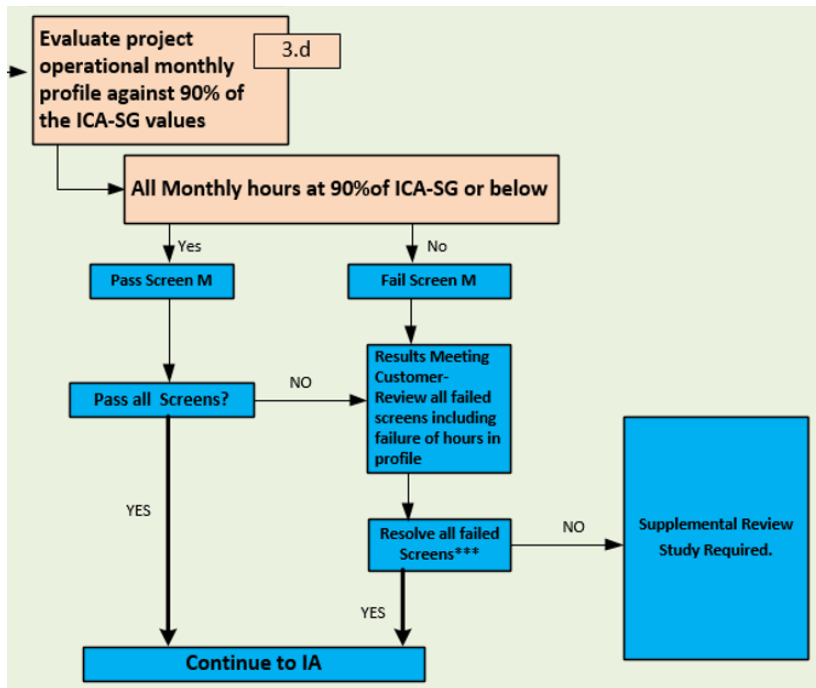
## Mm5 - OPTION 12: Limited Export with Limited Generation Profile Utilizing Certified Power Control Systems That are Approved for Scheduling

The evaluation of a limited generation profile (LGP) project requesting interconnection under this section shall:

1. Utilize the Generating Facility's Gross Nameplate Rating for screens F, F1, G, and H.
2. Is the maximum steady state value greater than 1% of the PCS controlled nameplate (as provided in the NRTL testing reports)? If so:
  - a. Screens D, J, K: Use the maximum LGP value plus the maximum steady state value of the PCS multiplied by the PCS controlled nameplate
  - b. Screen M: Use the requested LGP values plus the maximum steady state value of the PCS multiplied by the PCS controlled nameplate
  - c. Screen N: For LGP projects, Screen N (section G.2.a.i.) is considered a PASS if Screen M PASSED.
  - d. Screen O: Use the maximum LGP value plus the maximum steady state value of the PCS multiplied by the PCS controlled nameplate
  - e. Screen P: Use the Generating Facility's Gross Nameplate Rating for evaluations that use fault current calculations. For other evaluations under Screen P, use the maximum LGP value plus the maximum steady state value of the PCS multiplied by the PCS controlled nameplate
3. Is the maximum steady state value less than or equal to 1% of the PCS controlled nameplate (as provided in the NRTL testing reports)? If so:
  - a. Screens D, J, K: Use the maximum LGP value
  - b. Screen M: Use the requested LGP values
  - c. Screen N: For LGP projects, Screen N (section G.2.a.i.) is considered a PASS if Screen M PASSED.
  - d. Screen O: Use the requested LGP values
  - e. Screen P: Use the Generating Facility's Gross Nameplate Rating for evaluations that use fault current calculations. For other evaluations under Screen P, use the maximum LGP value
4. If any hour of the customer LGP profile is above 90% of ICA-SG profile, the project will fail screen M / Initial Review.
5. If Initial Review fails, then customer will be notified of Initial Review failure and offered an optional results meeting.
6. If modifications that can mitigate the initial review failure are identified during the optional results meeting as per section F.2.b. of Rule 21, Applicant must provide updated LGP within 5 BD :
  - a. Reduction at each hour of the updated LGP must comply with Table F.1. Each hour may not be reduced by more than 20% of the original request unless the update is due to outdated ICA results as determined by the IOU.
  - b. Where reduction of LGP impacts other failed screens (such screen D), the cost and time for the restudy will be based on Table F.1.
  - c. Increases in project size i.e., increases in project nameplate or LGP values are not allowed under Fast Track.
  - d. If modifications to the LGP are not received within 5 BD , the project will be deemed withdrawn and the applicant will have the option of re-applying based on LGP or nameplate.

# Resolving Topic C

Discussion below provides clarification on how customer will be given an opportunity to update the LGP values if one or more does not comply with 90%, the process, and timing of the communication with customer.



\*\*\*Screen M must be resolved. Otherwise, project will be withdrawn.

As discussed at Workshop 3, IOU's identified that section F(2)(b) of the tariff allows modifications that obviate the need for Supplemental Review. To be fair to all other Rule 21 projects (including those currently using ICA), IOU's propose failing Screen M in initial review whenever the LGP does not comply with 90% ICA-SG profile. Based on Workshop 3 feedback, IOUs added a special condition for projects failing Screen M when ICA values are outdated.

IOU's will allow LGP customers to provide an updated LGP as allowed under R21 section F(2)(b).

- Updated LGP must be provided 5 BD after Optional Initial Review Results Meeting
- Reduction at each hour of the updated LGP must comply with Table F.1. Each hour may not be reduced by more than 20% of the original request.
- **If IOU determines that the ICA results are outdated and the project would fail Screen M based on the updated ICA results, the Customer will be allowed to update their proposed LGP values with no restrictions on the amount of reduction.**
- Where reduction of LGP impacts other failed screens (such screen D), the cost and time for the restudy will be based on Table F.1
- Increases in project nameplate or LGP values are not allowed under Fast Track

# Update on Topic E

## Proposed Draft Tariff Language:

*For sites using a PCS that has not been certified to the latest UL 1741 CRD, a Real-time Automation Controller (RTAC) may be used in combination with an approved relay with directional overcurrent, power elements, and automation logic functions. For LGP projects, the applicant shall demonstrate the capability of the RTAC and relay to follow the agreed upon LGP schedule.*

## Continued Discussion on RTAC plus Relay Solution:

- Architecture Diagram of RTAC + relay solution.
- Additional Information from relay manufacturers.