

Memorandum

To: MARKETS COMMITTEE OF THE BOARD OF DIRECTORS
of the Independent Electricity System Operator

Presenter: Michael Lyle, Vice President, Legal Resources and Corporate Governance
Chair, IESO Technical Panel

Date: August 25, 2020

Re: Performance Requirements (Market Rule Amendment Proposal MR-00445-R00)

Purpose of Item: Recommendation for Approval to the Board

Executive Summary:

The IESO is seeking a decision from the IESO Board on a proposed market rule amendment that will revise the performance requirements for generators, wholesale customers and distributors connected to the IESO-controlled grid (MR-00445-R00). The Technical Panel unanimously recommended this proposal to the IESO Board for consideration.

Significant Issues, Risks and Opportunities:

The IESO is proposing to amend the performance requirements for generators, wholesale customers and distributors, as well as expand the applicability of several existing requirements to all distributed energy resources, regardless of their size. The proposed amendment also specifies the required behavior for inverter-based facilities during and immediately following disturbances to avoid these facilities ceasing to inject current during system disturbances. In addition, the language of several other performance requirements is being clarified in order to help market participants better understand these requirements. These changes to performance requirements are aligned with industry-wide standards (North American Electric Reliability Corporation (NERC) PRC-024 and CSA 22.3 no.9).

The lack of performance requirements for small distributed energy resources, combined with their increasing penetration levels, poses a risk to the reliability of the IESO-controlled grid as

these units continue to displace larger generation, while not always having the ability to provide the necessary grid support during and following significant system events.

There is also an opportunity to improve the clarity of some of the existing performance requirements and to make it easier for market participants to identify applicable performance requirements for their projects.

Background:

In recent years, there has been a gradual shift in the supply mix, moving from traditional synchronous generation facilities to increasing amounts of inverter-based generation (e.g. wind and solar generators, and, more recently, storage facilities), many of them being distributed energy resources. The IESO's 2019 Operability Study identified that the behavior of small distributed energy resources, combined with their increasing penetration levels, poses a risk to transmission system reliability as these units, along with other transmission-connected inverter-based generation, could cease producing power during and following significant system events, hence amplifying the effects of those events on the power grid.

Proposal and Analysis:

To act on the recommendations from the 2019 Operability Study report, the IESO is proposing to amend the generation facility performance requirements to expand the applicability of several existing requirements to all distributed energy resources, regardless of their size. The proposed amendment also specifies the required behavior for inverter-based facilities during and immediately following disturbances to avoid these facilities ceasing to inject current during system disturbances.

The IESO is also proposing to add a new requirement in Appendix 4.3 to ensure that equipment within a wholesale customer or distribution facility does not inadvertently trip for out-of-zone faults.

In addition, the IESO is proposing to consolidate the requirements for distributed energy resources in Appendix 4.3, together with the requirements applicable to wholesale customers and distributors, and to make improvements to the language of several other performance requirements that would help market participants more easily identify the requirements applicable to them and understand those requirements, and align these performance requirements with more recent industry-wide standards (North American Electric Reliability Corporation (NERC) PRC-024 and CSA 22.3 no.9).

In response to the Technical Panel call for stakeholder comment, Ontario Power Generation (OPG) submitted an evaluation of the proposed amendment providing recommendations to the IESO. The IESO agreed with all recommendations provided by OPG and updated the proposed amendment in line with the recommendations prior to the technical panel voting to recommend the proposed amendment.

At the August 11, 2020 Technical Panel meeting, the panel voted unanimously to recommend this proposed market rule amendment to the IESO Board.

Next Steps / Implementation:

I recommend that the Board accept the unanimous vote and recommendation of the Technical Panel to approve market rule amendment MR-00445: Performance Requirements with an effective date of September 21, 2020.

Michael Lyle

Cc: IESO Records

Encls.

- a. Market Rule Amendment Proposal form
- b. Technical Panel Materials
 - i. Memo to Technical Panel from IESO staff
 - ii. TP member Rationale
- c. Stakeholder feedback summary, stakeholder engagement and Technical Panel
- d. Consumer Impact Assessment
- e. Draft Board Resolution