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**Assessment of Impact of Rule  
Amendment on Consumers re Prices,  
Reliability and Quality of Electricity  
Service**

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This form is used to document the *IESO's* assessment of the impact of a proposed *market rule amendment* on the interests of consumers with respect to prices and the *reliability* and quality of electricity service. Please complete all parts of this form.

Terms and acronyms used in this Form that are italicized have the meanings ascribed thereto in Chapter 11 of the *Market Rules*.

**PART 1 – MARKET RULE INFORMATION**

Identification No.:	MR-00445-R00
Title:	Performance Requirements

**PART 2 – ASSESSMENT**

The following is the *IESO's* assessment of the impact of the proposed *market rule amendment* on the interests of consumers with respect to prices and the *reliability* and quality of electricity service.

**Impact on Prices**

None

**Impact on Reliability of Electricity Service**

The proposed amendment will improve *reliability*.

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. Therefore, the *IESO* is proposing to extend the applicability of the ride-through and frequency response requirements to all units by removing the 10 MW minimum size threshold for distributed energy resources. This proposed change is aligned with the latest standard *CSA<sup>1</sup> 22.3 No. 9: Interconnection of Distributed Energy Resources and Electricity Supply Systems*.

Moreover, inverter-based units behave differently than conventional *generation units*. For example, inverter-based units could stay connected but cease current injections during and for a period of time after system disturbances, until which time they return to pre-disturbance levels at a slow ramp rate. On the other hand, a conventional *generation unit* immediately responds to disturbances by providing voltage and frequency support for grid recovery. To address this issue, the *IESO* is proposing updates

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<sup>1</sup> Canadian Standards Association

## PART 2 – ASSESSMENT

to Appendix 4.2 Category #1 “Off-Nominal Frequency Operation” and Category #3 “Voltage Ride-Through” to clarify required behavior for inverter-based *facilities* during and immediately following disturbances. This update is consistent with the latest NERC<sup>2</sup> PRC-024: *Generator Frequency and Voltage Protection* standard.

The inadvertent tripping of large loads for out-of-zone faults poses a *reliability* risk to the *IESO-controlled grid* as it can result in excessive voltage levels, voltage collapse or equipment overloading. To address this issue, the *IESO* is 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.

### **Impact on Quality of Electricity Service**

None.

**Date Assessment Prepared:** July 30, 2020

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<sup>2</sup> North American Electric Reliability Corporation