



**To:** New England Distribution Utilities  
**From:** Al McBride, Director Transmission Strategy & Services  
**Date:** February 14, 2018  
**Subject:** ISO New England Ride-through Requirements for Distributed Energy Resources

The quantity of distribution-connected generating resources, Distributed Energy Resources (DERs), that has connected to the New England electric system has increased dramatically in recent years. This increase, which is expected to continue into the future, has been driven by state policies and incentives, and by changes in technology and equipment fabrication costs. Given their growing share of the regional resource base, it will be essential that DERs do not jeopardize the reliability of New England's bulk electric system. For the past several years, ISO New England (ISO-NE) has been identifying the need to update state interconnection requirements to include ride-through requirements for voltage and frequency excursions. This need is especially critical for DER technologies that have or will have a significant penetration on the distribution systems in New England. Presently, the PV solar technology has a significant penetration and can impact transmission reliability.

To address its reliability concerns, ISO-NE has worked with the Massachusetts Technical Standards Review Group to develop a set of requirements ("ISO-NE Ride-through Requirements") that can be implemented in a timely manner to minimize the reliability impact of future solar PV installations. ISO-NE believes that these requirements are needed and is requesting that the requirements be placed into effect in all six New England states. These requirements are documented in the ISO-NE Inverter Source Requirement Document (which is posted on the Massachusetts TSRG website) and shall be implemented in Massachusetts as follows:

1. All inverter-based solar PV projects 100 kW or less with applications submitted on or after June 1, 2018 are subject to ISO-NE Ride-through Requirements.
2. All inverter-based solar PV projects greater than 100 kW with applications submitted on or after March 1, 2018 are subject to ISO-NE Ride-through Requirements.
3. Inverter-based solar PV projects with applications submitted prior to the above dates are encouraged to comply with ISO-NE Ride-through Requirements with the approval of the interconnecting utility.

To comply with ISO-NE Ride-through Requirements, inverters in solar PV installations shall be certified per the requirements of UL 1741 SA as a grid support utility interactive inverter, and have the voltage and frequency trip settings and ride-through capability described in the ISO-NE Inverter Source Requirement Document.

The requirements for inverters in solar PV installations to comply with UL 1741 SA is an interim step. A revision to IEEE 1547, Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces, has been approved and will be published this year. Work is ongoing on IEEE 1547.1 which is the standard for testing DER to ensure it meets IEEE 1547. ISO-NE will work with the state regulators to ensure that after IEEE 1547.1 has been revised, published, and entered into effect, all inverter-based applications shall be compliant with all utility-specific settings and with all applicable parts of the revised IEEE and UL standards. The adoption of these standards will help facilitate the continued growth of DERs on the distribution system, while also supporting the reliability of the bulk power system.

In order that the ISO-NE Ride-through Requirements are implemented efficiently, it is desired that, by August 1, 2018, inverter manufacturers create and put into production (for Massachusetts PV Solar projects) a standard “NE Regional Setting Group” that aligns with all default settings within the ISO-NE Inverter Source Requirement document.

ISO-NE would like to thank everyone involved for their work on this important reliability issue.