

Additions, changes and clarifications from IEEE Standard 1547

0 – 2 MW

2-10 MW Radial

2-10 MW Network*
Networked = Subtransmission
(looped) systems

4.1.1	Voltage Regulation	None.	As required or agreed to by parties. May also become a PJM Market consideration if VAR Market is established.	As required or agreed to by parties. May also become a PJM Market consideration if VAR Market is established.
4.1.2	Integration with Area EPS Grounding	AP, PPL and UGI Exception: AP, PEPCO, PP&L and UGI require a wye-grounded connection on the T.O. side of the DG step up transformer for all new installations. Other T.O.s within PJM will accept a delta or ungrounded wye connection, and the above TOs will accept delta or ungrounded wye if an existing transformer, provided that adequate protection is provided installed by the DG to detect a ground and limit any overvoltage to an acceptable level on the T.O system. This protection requires voltage monitoring on the high side of the DG transformer using phase to ground connected PTs.	Same as 0-2 MW	Same as 0-2 MW

	Also see Note ² for AEP additional requirement for isolating device.	Same. Chris Cook disagrees !	Same. Chris Cook disagrees ! ComEd to check for 138kV
4.1.3	Synchronization	None.	None.
4.1.4.1	Distribution Secondary Grid Networks (Under development)	See Note ¹ Interconnection to Distribution Secondary Grid Networks only allowed on an exception basis or where state commission regulations specify requirements.	N/A - Too large for sec. grid. Chris Cook to provide list of current connections to sec grids. Consider Jim Daley guidance language (white paper).
4.1.4.2	Distribution Secondary Spot Networks	Interconnection to Distribution Secondary spot Networks only allowed on an exception basis or where state commission regulations specify requirements.	Same as 0-2 MW. Consider Jim Daley Text ? Or add as whitepaper to define criteria for exceptions.
4.1.5	Inadvertent Energization of the Area EPS	None	None

4.1.6	Monitoring	<p>Local monitoring provisions are acceptable to meet 4.1.6 requirements. In addition see 4.1.2 additions and the following additions:</p> <p>(1) PJM requires real-time telemetering for Capacity Generating Resources able to set LMP.</p> <p>(2) Pepco and Conectiv require revenue quality metering with dial-up capability for all generators at 2 of the 3 locations metering locations as depicted on the single line drawing in Notes item #3. For facilities with multiple supplies and for generators less than 1MW, the requirements for metering will be determined on a case-by-case basis.</p> <p>(3) Conectiv may require real-time telemetering for certain interconnections above 1 MW.</p>	<p>(1) PJM requires real-time telemetering for all Capacity Resources, Energy Resources > 10 MW and any other Generating Resource able to set LMP.</p> <p>(2) should be eliminated</p> <p>Real time telemetring may be required for generation greater than 1 MW.</p>	<p>(1) PJM requires real-time telemetering for all Capacity Resources, Energy Resources > 10 MW and any other Generating Resource able to set LMP.</p> <p>(2) should be eliminated</p> <p>Real time telemetring may be required for generation greater than 1 MW.</p>
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		(4) PSEG may require real-time telemetering for any interconnection depending on location.		
4.1.7	Isolation Device	None.	Clarification. Drawout breaker, lockable in the withdrawn position with an indicator, satisfies the isolation device requirement.	Clarification. Drawout breaker, lockable in the withdrawn position with an indicator, satisfies the isolation device requirement.
4.1.8.1	Protection from EMI	None.	None.	None.
4.1.8.2	Surge Withstand Performance	None.	None.	None.
4.1.8.3	Paralleling Device Withstand	None.	None.	None.
4.2.1	Area EPS Faults	None ³	Note ³	See typical One Line for Network.

4.2.2	Area EPS Reclosing Coordination	None	Synch check or voltage checking may be required for source breakers and / or line reclosers.	Synch check or voltage checking may be required for source breakers and / or line reclosers.
4.2.3	Voltage	Clarification: In cases where the DG interface is via an ungrounded transformer connection at the PCC, the voltage sensing must be done on the T.O. side of the transformer. This voltage sensing must be Ph -Gnd. connected and be on all three phases.	Same as 0-2 MW.	Same as 0-2 MW.
4.2.4	Frequency	None	None	None
4.2.5	Loss of Synchronism	None	None.	None.
4.2.6	Reconnection to Area EPS (a) Voltage Requirement	None	None.	None.

	(b) Frequency Requirement	None	None.	None.
4.3.1	Limitation of DC Injection	None.	None.	None.
4.3.2	Limitation of Flicker induced by the DR	None	None.	None.
4.3.4	Harmonics	None. See PPL Exception - Less % harmonics allowed per individual interconnection	See PPL Exception - Less % harmonics than IEEE 519 allowed per individual interconnection	See PPL Exception - Less % harmonics than IEEE 519 allowed per individual interconnection
4.4.1	Unintentional Islanding	Note 6.	Same as 0-2 MW. Also - See typical one line for looped line interconnection. Add new note for typical one line.	Same as 0-2 MW. Also - See typical one line for looped line interconnection. Add new note for typical one line.
5.1	Design Test	None	None. 1547.1 acceptable.	None. 1547.1 acceptable.
5.2	Production Tests	None	None. 1547.1 acceptable.	None. 1547.1 acceptable.

5.3	Interconnection Installation Evaluation	None.	None. 1547.1 acceptable.	None. 1547.1 acceptable.
5.4	Commissioning Tests		None. 1547.1 acceptable.	None. 1547.1 acceptable.
5.5	Periodic Tests	See Attachment A <u>Exception for all:</u> – Periodic Testing is covered by PJM Tariff 55.1, 55.4, and ISA standard T&Cs which include the same PJM Tariff paragraphs.	See Attachment A <u>Exception for all:</u> – Periodic Testing is covered by PJM Tariff 55.1, 55.4, and ISA standard T&Cs which include the same PJM Tariff paragraphs.	See Attachment A <u>Exception for all:</u> – Periodic Testing is covered by PJM Tariff 55.1, 55.4, and ISA standard T&Cs which include the same PJM Tariff paragraphs.