



Wisconsin Distributed Resources Collaborative and ComRent IEEE 1547 Tutorial

The Wisconsin Distributed Resources Collaborative and ComRent Load Bank Solutions present an in-depth review of the revised IEEE 1547 Standard

Topics will include the positive implications for all distributed generation systems, particularly solar PV, energy storage, and microgrids. This will have significant impact on the inverter market and industry practices. This standard draft has been submitted and was approved by the IEEE Standards Board in February 2018.

Speakers:

- **Mark Siira**, Director of Utility Compliance and Solutions, ComRent International
- **Wayne Stec**, Principal, Distregen

9:45-10:00 **Registration check in**

10:00-11:30 **IEEE 1547 History**

- Need and benefits
- Summary of changes
- Timeline moving forward

IEEE 1547 Revision Requirements – New Concepts

- Basic criteria for the use of IEEE 1547 as well as important requirements first introduced or considerably modified
- Review of Reference point of applicability; newly-introduced performance categories and their assignment to specific DER by an Authority Governing Interconnection Requirements (AGIR)

11:30-12:30 **Lunch**

12:30-1:30 **New Interconnection requirements**

- Response under normal operating conditions
- Voltage and reactive power control
- Response to abnormal conditions including voltage ride-through; ranges of adjustability for control settings as well as for voltage and frequency trip settings
- A new cease to energize performance requirement and entering service criteria that are critical to meeting the new ride-through requirements
- Power quality requirements, as well as islanding concepts
- Voltage regulation
- Interoperability requirements

1:30-1:45 **Break**

1:45-3:00

**Overview of the Important Concepts and Requirements Needed for Verification and Testing
Solar PV interconnected to the Grid**

- Determination of the reference point of applicability, full compliance and partial compliance
- Type testing, production testing, commissioning tests, and periodic testing
- New verification requirements for design evaluation and as-built evaluation



Mark Siira

ComRent International

Mark Siira is the director of Utility Compliance and Solutions for ComRent International, a leader in load testing solutions for utility-scale systems. Mark is the Chair of IEEE SCC 21. In this role, he leads the development of all interconnection and interoperability standards for photovoltaics, dispersed generation, and energy storage. He is vice-chair for IEEE P1547 Revision and also a member of the UL Standards Technical Panels 1741 (inverters), UL2200 (generators) and 6171 (wind farms interconnection). Mark has a bachelor of science degree in mechanical engineering from GMI Engineering and Management Institute (now Kettering University) and an MBA from Harvard University.



Wayne Stec

Distregen

Wayne Stec is principal at Distregen LLC, Carmel, Indiana, which he founded in 1999. Wayne's consulting roles include providing guidance for the interconnection of renewable energy, battery storage, and other DER to the electric power system. His clients include national laboratories, research organizations, electric utilities, equipment and service providers, and project developers. Wayne received his B.S. degree in electrical engineering from Illinois Institute of Technology in 1977 and his MBA from DePaul University in 1988. He has over 40 years of experience in the electrical transmission and distribution industry and in consulting including protection systems, distribution systems, transmission systems, generation systems, storage systems, and advanced metering systems. Previously he was director at R.W. Beck; manager of information technology and automation at ABB Power T & D; sales manager in protection, meters and power system studies at GE Energy; and project manager/application engineer/power systems engineer at General Electric. Wayne is a member of IEEE and currently is active in the development of several standards organizations:

- SCC21 - Technical expert in Standards Coordinating Committee 21 that oversees the development of standards in the areas of fuel cells, photovoltaics, dispersed generation, and energy storage
- IEEE 1547.1 – Sub-group chair and co-chair in IEEE 1547.1 interconnection test standard
- IEEE 1547.2 – Working group chair of IEEE 1547.2 application guide for IEEE 1547
- IEEE PSRC – Active contributor in several Power Systems Relay Committee standards and task force documents

Breaks and lunch are included in your registration fee.

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