

**PREP WORK for Sept. 14th TSG, #7
Test and Verification; Witness Test Protocol**

Subgroup members review agenda and provide the following to staff by 9/5/18.

- 1) Propose edits to the Regulated Utilities' TIIR Draft Proposal and/or flag topics for discussion. Send as red-lines and comments using track changes to the 7-26-18 Draft TIIR.**
 - a. Definitions in Section 3B
 - b. Test and Verification Requirements; Section 12
 - c. Clarification on RPA, PCC, PoC and Supplemental DER Devices; Annex B
- 2) Review and be prepared to reference IEEE 1547-2018 and one of its supporting documents**
 - a. Definitions in Clause 3.1
 - b. Test and Verification; Clause 11 (pages 76-94); unit vs. facility-level verification
 - c. Annex F (informative) Discussion of testing and verification requirements at PCC or PoC
 - d. UL 1741 CRD (attached and sent to TSG on 8/3 as Power Control Systems CRD Draft 20180731 and ECL-UC-v.2.4)
- 3) Review and be prepared to reference the 2018 MN DIP leveraging the [August 13, 2018 Order \(MN DIP\)](#) and the proposed DGWG subgroup edits to MN DIP Attachment 5 (attached to email)**
 - a. Inspection, Testing, Commissioning and Authorization; Section 5.7
 - b. Certification Codes and Standards; MN DIP Attachment 4
 - c. Certification of Distributed Energy Resource Equipment; MN DIP Attachment 5 (consider email attachment version)
- 4) Please provide input to the below, slides are encouraged**
 - a. How does 1547-2018 change the type of testing and verification required of an individual DER unit or multiple DER units in a DER facility, including option to witness? Does that apply to all DER or how should we consider different requirements for different DER? If you answer yes to either of the following, please include edits to the Draft TIIR:
 - i. Are there any concerns due to the addition of testing for interoperability since 1547.1-2005?
 - ii. Are there unique circumstances in MN that would indicate MN TIIR should take exception to any of the test and verification guidance in 1547 Clause 11? If yes, what and why?
 - b. Examples of testing and verification being used today and how that has worked from different perspectives.
 - c. Are additional definitions needed in the TIIR to provide clarity for parties implementing DER Interconnection in MN? If yes, please propose edits to TIIR

Section 3, 12, or both and be prepared to provide overview during TSG meeting. Consider the following phrases.

- i. DER evaluation (explained in IEEE 1547 subclause 11.2.4 and also discussed in 11.2.1 and 11.3)
- ii. Full conformance test (not defined, rather guidance given in IEEE 1547 subclause 11.3 and further discussed in Annex F)
- iii. Partial conformance test (not defined, rather guidance given in IEEE 1547 subclause 11.3 and further discussed in Annex F)
- iv. Compliance (used interchangeably with conformance in Clause 11?)
- v. Witness test
- vi. Periodic test and verifications (guidance given in IEEE 1547 subclause 11.2.6, including criteria for mandatory reverification)
- vii. Equipment package (referenced in proposed DGWG edits to MN DIP Attachment 5)

-----End Of Prep Work -----

Technical Subgroup Meeting 7 DRAFT AGENDA

Friday, September 14th

9:30am – 12:30pm Central Time

[Join WebEx meeting](#)

Meeting number (access code): 741 336 029

Meeting password: TBD

+1 206-596-0378 US Toll

844-302-0362 US Toll Free

Proposed Agenda

9:30 – 9:40 Welcome, Intros, Overview of Agenda, Recap

9:40 – 10:00 The Role of the Reference Point of Applicability (Draft TIIR Annex B)

10:00 – 11:30 Testing and Verification (Draft TIIR Sec. 12)

11:30- 12:00 Options to witness Testing

12:00 – 12:20 Check in on Sept 21 In Person Meeting

12:20 – 12:30 Next Steps

Phase II Technical Subgroup Roster

Craig Turner, Dakota Electric	Robert Jagusch, MMUA	Patrick Dalton/John Harlander/Alan Urban, Xcel Energy
Lise Trudeau, Dept of Commerce	Kevin McLean/Jenna Warmuth, MN Power	
	Kristi Robinson, MREA	John Dunlop/Chris Jarosch, MNSEIA
Brian Lydic/Sky Stanfield/Laura Hannah – Joint Movants	Dean Pawlowski, Otter Tail Power	Commissioner Matt Schuerger; Michelle Rosier; Cezar Panait
Professor Mahmoud Kabalan, St. Thomas Affiliation		Technical Assistance*: Michael Coddington and Michael Ingram, National Renewable Energy Laboratory Tom Key, Jens Boemer, Nadav Enbar; Electric Power Research Institute Pam Johnson, DOE Solar Energy Innovator Fellow

*Technical assistance is not a participant or party to the docket and does not advocate for specific outcomes in the proceeding. The role of technical assistance is to support Commission staff in the process for these proceedings, and to provide an objective source of information or data, as requested, by Commission staff to understand areas of disagreement amongst participants.

Draft Meeting Topics Proposal

<u>Date</u>	<u>Topic</u>
3/23/18	Meeting 1 Scope/Overview** (Walk-through with explanations: Red-lined TIIR; List of topics in scope of TSMs; Definitions
4/13/18	Meeting 2 Performance Categories**, Response to abnormal conditions; MISO Bulk Power System
5/18/18	
6/1/18	Full DGWG Meeting Technical Subgroup update; Phase I Update/Next Steps
6/8/18	Meeting 3 Reactive Power and Voltage/Power Control Performance**, Protection Requirements
7/20/18	Meeting 4 Energy Storage**, Non-Export and Inadvertent Export**, Capacity**
8/3/18	Meeting 4 topics continued
8/24/18	Meeting 5 Interoperability** (Monitor and Control Criteria); Metering**, cyber security
9/14/18	Meeting 7; Test and Verification**, Witness Test Protocol
9/21/18	Full Day, In Person TSG Meeting – Power Quality; Follow up items; Review/Reconcile edits in the draft TIIR
10/19/18	References; Definitions*; 1-line diagram requirements; Agreements*, Frequency Ride-through
11/9/18	Full DGWG Meeting 7