Staff Subcommittee on Electricity and Electric Reliability

NARUC Summer Policy Summit

Staff Subcommittee on Electricity & Electric Reliability and Staff Subcommittee on Energy Resources and the Environment

Status of IEEE 1547

NARUC Summer Policy Summit

Status of IEEE 1547

Michael Coddington, National Renewable Energy Lab



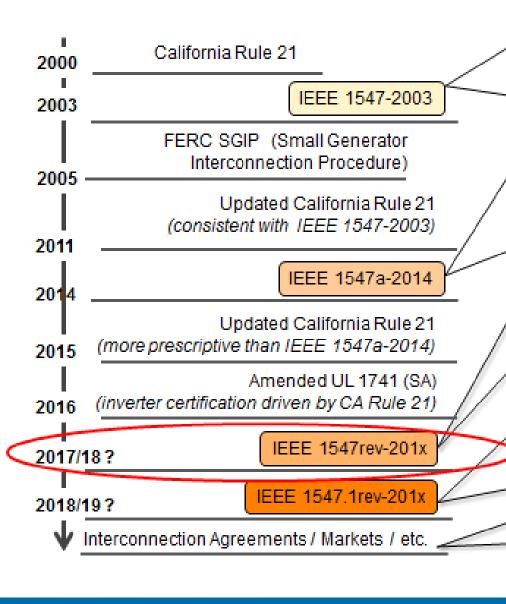
IEEE 1547 Update



NARUC Summer Meetings 2017

Michael Coddington

History of DER Inter. Standards in US

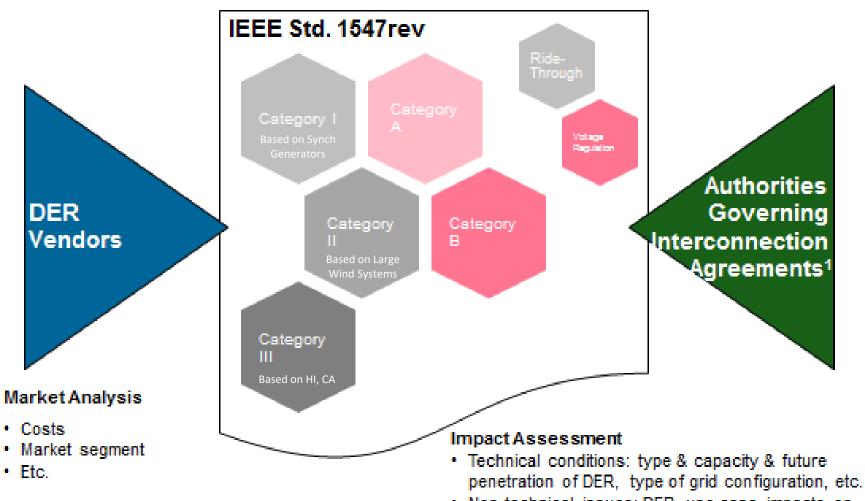


- Shall trip in response to abnormal voltage/frequency condition
- Shall not actively regulate voltage or frequency
- May ride through abnormal V/F
- May actively regulate voltage by changing real/reactive power
- May change real power in response to frequency deviations
- Shall ride through abnormal V/F
- Shall be capable of actively regulating voltage by changing real/reactive power
- Shall be capable of changing real power in response to frequency deviations
- Shall have communication interface
- DER Unit Level: Type Test, Production Test
- DER Facility Level: Design Evaluation, Installation Evaluation, Commissioning Test, Periodic Tests
- DER to provide ancillary grid services
 capability VS. provision

IEEE 1547 Full Revision – Topics

- Voltage ride-through & frequency ride-through capabilities
- Some technology-specific requirements
- Variable settings for grid support, including Volt/VAR, Volt/Watt, frequency/Watt, etc.
- Revised power quality settings and requirements
- Intentional island and unintentional-island provisions
- Secondary network interconnection guidelines
- Energy storage system integration
- Grid support functions and interoperability

NEW - IEEE P1547 DER Performance Categories



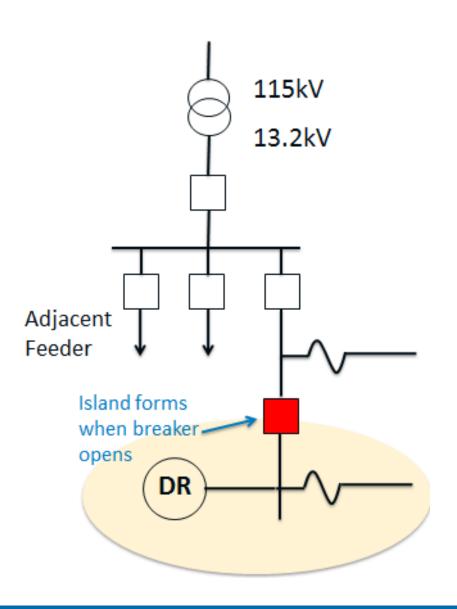
State Regulator, Area EPS or bulk system operator, etc.

 Non-technical issues: DER use case, impacts on environment, emissions, and sustainability, etc.

Unintentional Islanding Requirements

disconnection of DER in 2 seconds or less if an island is formed

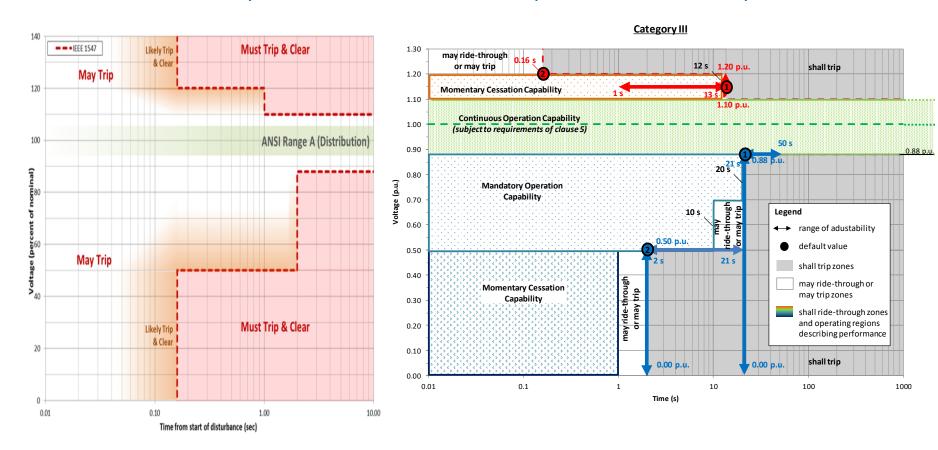




Requirements for Bulk System Reliability

IEEE 1547-2003 Requirements

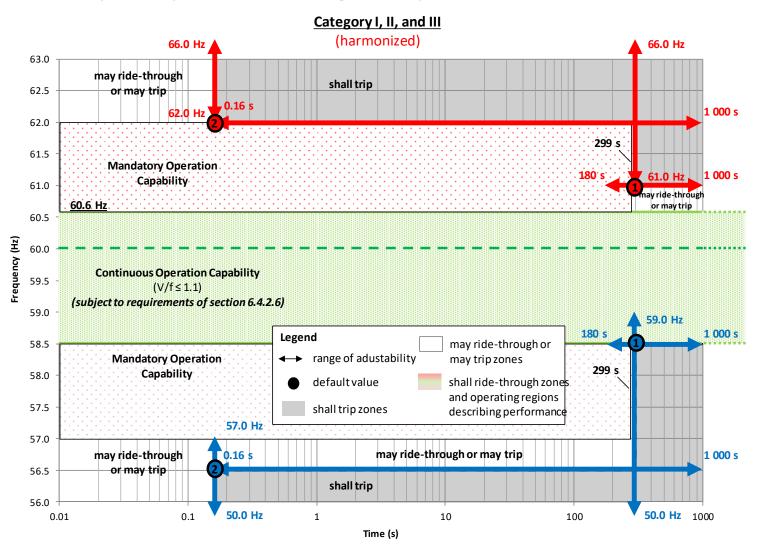
Proposed IEEE P1547 Requirements



Voltage-ride through is now mandatory, where it is optional in IEEE 1547-2003

Requirements for Bulk System Reliability

Frequency Ride-Through Requirements (IEEE P1547)



Status of IEEE 1547 Full Revision Balloting

- First Ballot passed >75% June 2017
- Over 1000 comments that must be addressed prior to next ballot
- Comments will be evaluated by 8 separate ballot review teams
- All comments are reviewed and either 1)
 Accepted, 2) Accepted in principle, or 3)
 Rejected
- Next ballot likely in late August 2017

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