Enhanced Inverters

Key Work Activities

- Review inverter-related standards
- Review potential solutions
- Determine rule changes to implement potential solutions
- Require coordination with state agencies in development of proposed solutions

6 meetings, February – October, 2014

Applicability

- Applicable to PJM connected FERC jurisdictional inverter based generators which are defined as asynchronous generation in the PJM footprint that either have an ISA (Interconnection Service Agreement) or a WMPA (Wholesale Market Participation Agreement)
- Not applicable to merchant transmission facilities or HVDC inverter-converter facilities
- Not applicable to existing generation or generation in new service queue
- Not applicable to Attachment BB projects

Design Components

Design Components	Package A
Active Power Control - automatic	Must have the capability to : 1) Have an automated reduction in active power in response to high system frequency with droop characteristics 2) Have an automated increase in active power in response to low system frequency with droop characteristics when resource has additional power available
Reactive Power Support / Power Factor Control	Must have the capability to autonomously provide dynamic reactive support within a range of 0.95 leading to 0.95 lagging at inverter terminals unless system impact study or TO establishes a need for more conservative limits
Voltage Ride-Through	Must adhere to NERC PRC-024 standard irrespective of generator size
Frequency Ride-Through	Must adhere to NERC PRC-024 standard irrespective of generator size
Ramp rate control	Must have the capability to limit ramp rates
Implementation Timeframe	Effective date will apply to new queue requests

Poll Results

- 69 responses
- Question: Do you support Package A?
- Poll results: 98.55% voted in favor of Package A

YES	NO	ABSTAIN
68	1	0

Next Steps

- 12/18 MRC Vote (first read held on 11/20)
- 1/22/2015 MC Vote
- Target FERC Filing in Feb 2015
- Monitor IEEE 1547A standard development
- Continue coordination with states