Incorporating PMU Requirements into Tariff

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PJM Interconnection
The DOE Grant project will provide a highly reliable data collection network.

SynchroPhasor Measurement Devices at 82 Substations

Production Grade Data System to Support 150+ Monitored Substations
Challenges & Benefits:

- No Generator Buses with PMUs
- For generator model development and verifications, we need high resolution data (SynchroPhasor data) at generator buses
  - Potential On-line model testing instead of traditional off-line testing
  - Improve the accuracy of the generator model
  - Forthcoming NERC standards
- Generation Primary Frequency (Governing) and AGC Response Performance Monitoring
- Oscillation Monitoring and Detection
Work through the process

9/13/2012
• Problem/Opportunity Statement presented and approved
  • Seeking to make a policy change to the ISA and manuals to add explicit requirement of installing SynchroPhasor Measurement Units ("PMU") at new Generation Interconnections.

1/22/2013
• Final report reviewed
  • Seven meetings
  • Education on PMU-related issues covering eleven topics
  • Two packages proposed

• PJM MC endorsed the proposed Tariff language on 6/27/2013
• PJM submitted the filing to FERC on 10/28/2013
• FERC accepted PJM’s compliance filing on 2/27/2014
- Process is long;

- Teamwork and support from throughout the organization;

- Education is necessary.
Next Steps

- Working on manual languages for the details to support the new requirement in tariff;

- Phased approach for SynchroPhasor Deployment.
Test 1: Simulator was connected to PJM’s internal network in subnet where PJM’s SPCD is located.

Test 2: Simulator was sent to Generation Owner and PJM SPDC connected to simulator through PJMnet located at this site.

Test 3: Simulator was connected to a PJMnet Test Site located at PJM to test connections as if it were an external site. The PJM SPDC then connected to the simulator through PJMNet.