

SGIG Application Needs

Presenter

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The Roles of the NYISO



Reliable operation of the bulk electricity grid

- *Managing the flow of power nearly 11,000 circuit-miles of transmission lines from more than 300 generating units*



Administration of open and competitive wholesale electricity markets

- *Bringing together buyers and sellers of energy and related products and services*



Planning for New York's energy future

- *Assessing needs over a 10-year horizon and evaluating the feasibility of projects proposed to meet those needs*



Advancing the technological infrastructure of the electric system

- *Developing and deploying information technology and tools to make the grid smarter*

Disclaimer and Acknowledgment

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Project Goals

- ◆ Enhance situational awareness
- ◆ Implement voltage stability monitoring
- ◆ Post event analysis
- ◆ Calibration of existing operating models

Challenges

- ◆ New data source for Grid Operations
- ◆ Applications are somewhat immature
- ◆ An evolving standards and regulatory compliance landscape

Current Approach

- ◆ Worked with Grid Operations staff to develop use case documents for the applications
- ◆ Developed application's functional requirement specifications with key stakeholders

Current Assumptions

◆ Use Case Documents

- *Some strong feelings on both functions and UI elements*
- *Dashboard feature*
- *User configurable*
- *Ability to zoom into and out of specific areas to provide perspective of events*

Current Assumptions

◆ Dashboard components

- *Alarm panel*
 - Angle of separation
 - Voltage magnitude
 - Frequency instability
 - Oscillation/Damping
 - Interface MW flows
 - PMU MW/MVAR flows
- *2-D geographic map panel showing NYCA and surrounding ISO control areas*
 - PMU locations
 - Ability to zoom into and out of specific areas

Current Assumptions

◆ User Interface requirements

- *Ability to click on alarm for additional info*
 - Selecting alarm will change perspective of other panels in the display
 - Zoom into and out of area with graphic detail and appropriate trend, phasor diagram, scatter plot, spectral diagram, etc.
 - Provide user with location information on PMU/substation
- *Other PMU applications (angle of separation, voltage magnitude, frequency instability, etc.)*
 - User configurability / flexibility
 - Reference bus configurable by user
 - Color coding for status
 - Ability to trend multiple pairs of angles
 - Ability to change separation limits (user configurable)
 - Ability to activate and de-activate alarms and violation messages

Current Assumptions

◆ Reports

- *Daily report*
- *PMU performance monitor and report*
- *Alarms report*

Current Assumptions

◆ Data Archival System

- *Provide for a database of raw PMU measurements, application results, events and alarms*
- *Facility to enable additional (event specific and user specified) archiving and retrieval*

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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