Entergy Phasor Project Update

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NASPI North American SynchroPhasor Initiative

Acknowledgment and Disclaimer

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Project Specifics

- PMU installations Across Arkansas, Mississippi, Louisiana, and East Texas
  - 14 New PMU's installed in 2011
  - 21 New PMU's Installed by EOY 2012
  - 10 New PMU's installed by EOY 2013
  - 45 Total DOE Co-Funded PMUs
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  - 66 PMUs at Entergy by 2013 (with 21 Existing PMU's)
- 28 PMU's $\geq$ 345 kV
- 38 PMU's < 345 kV

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Project Specifics(cont)

- **Module One E-Learning Training completed by <u>Over 600</u> Entergy staff and Project Members**
- **Training & Education Plan 2012/13**

- Beta Applications:
  - Phasor Gateway - Testing & Evaluation
  - WSU Oscillation Monitoring – Testing & Evaluation
  - EPRI Wide-Area Voltage Stability Monitoring – Testing & Evaluation
  - NEU Synchro-Phasor Assisted State Estimator (SPASE) – Testing & Evaluation
  - UNO Pattern Recognition – CART installed, functional plans and processes have been completed and analysis begun
  - WSU Local-Area Voltage Stability- Dec 2011 delivery
  - Space Time Insight - Preliminary Visualizations Applications

- OSIsoft Pi Historian installed 2007
- GPA openPDC installed June 2011, second 2012
- Deployment of DOE Approved Cyber Security Plan is in progress and on schedule

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& Everything Else

- Entergy and MISO will be testing the use of NERCnet for the exchange of Phasor data
  - Gateway to Gateway, PDC to PDC
  - Metrics for the tests will include data quality, data delivery, security of data exchange, etc.
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& Everything Else

- Things take longer than you think
- Guidelines for Visualization components and shared visualizations (colors, symbols, refresh rates, etc)
- Agree on Common Training & Education materials
- Talk Often, Meet Regularly, & Know Where You're Going

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Entergy Services, Inc.

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