PJM SynchroPhasor Technology Deployment Project

David Ulmer
ulmerd@pjm.com
NASPI Work Group Meeting
February 24-25, 2010
Production Quality System to Support 150+ Monitored Substations
PJMSynchroPhasorDeployment:ProjectSummary

• Installations at 90 substations
• 12 PJM Transmission Owners
• Cost share partners:
  - Quanta Technology
  - Virginia Tech
  - Electric Power Group (EPG)
**PJM SynchroPhasor Deployment: System Overview**

**PJM**

- Displays
- Event & Alarm Processor
- Data Processing
- Phasor Data Archive

**Super PDC**

- EMS/SCADA

**TO**

- PMU
- PDC
- Data Processing*

* TOs can optionally receive phasor data from PJM

Other Monitoring Entities (FERC/NERC, etc.)
PMU/PDC Devices:
Selected by Transmission Owners (collaborative project requirements)

PJM PDC:
Currently using TVA’s openPDC

Wide Area Situational Awareness/Data Analysis:
EPG’s Real Time Dynamics Monitoring System (RTDMS) and PGDA offline analysis tool

Data Archive:
Short-term – combination of PJM PDC and RTDMS storage
Long-term – OSIsoft PI System
## Projected Project Milestones

<table>
<thead>
<tr>
<th>System Component</th>
<th>Phase 1 - 2010</th>
<th>Phase 2 - 2011</th>
<th>Phase 3 – 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
<td>Q3</td>
</tr>
<tr>
<td>Number of PMUs at TO Sites</td>
<td>2</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Number of PDCs at TO Sites</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>TO PDC – PMU Telecom Links</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>TO PDC – PJM SPDC Telecom</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Super Phasor Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentrator at PJM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SynchroPhasor Data Mgmt &amp; Visualization Software</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chantal Hendrzak – Project Sponsor
hendrc@pjm.com

Mahendra Patel – Subject Matter Expert
patelm3@pjm.com

David Ulmer – Project Manager
ulmerd@pjm.com