Transmission and Distribution Session

Presented by  Kevin Walsh
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<td>Illinois Institute of Technology</td>
<td>Using the PI System to Develop the Data Infrastructure for a Microgrid</td>
<td>Dr Mohammad Shahidehpour</td>
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<td>DTE</td>
<td>Improving Reliability with Smart Fault Indicators and the PI System</td>
<td>Cameron Sherding &amp; Mark Blaszkiewicz</td>
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<td>Hydro Quebec TransEnergie</td>
<td>Real-Time Monitoring of Energy Transportation Network Maintenance with PI WebParts and Event Frames</td>
<td>Nicolas Di Gaetano &amp; Michel Daigle</td>
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<td>China Southern Grid</td>
<td>An End2End Operationalized Pipeline Model for Predictive Analysis of the Intelligent Grid</td>
<td>Dr. Li Peng, Dr. Yun Zhao, Vijay Narayan</td>
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<td>Pepco Holdings, Inc.</td>
<td>The Ultimate Real-Time Data Infrastructure for EMS Data for both Inside and Outside the control Room</td>
<td>Ted Beglin</td>
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## Agenda - Afternoon

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<td>PJM Interconnection</td>
<td>Improving Grid Operator Situational Awareness with the Dispatch Interactive Map Application</td>
<td>Ed Kovler &amp; Frank DiCicco &amp; Erich Cline</td>
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<td>Southwest Power Pool</td>
<td>Building a Large Scale AF Model Enabling Operational Intelligence</td>
<td>Cody Parker &amp; Jeff Parker</td>
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<td>Meralco</td>
<td>Leveraging the PI System Analytics and Visualization to enable CBM</td>
<td>Raymond Herrera &amp; Rommel Rivera</td>
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<td>Washington State University</td>
<td>Oscillation Monitoring for Large Power Systems</td>
<td>Mani Venkatasubramanian</td>
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Exhibitors
Michael Greenhalgh
SMUD – Grid Assets
Project Manager II
Michael.Greenhalgh@smud.org

Powering forward. Together.
SMUD® About Us

Municipal Electric Utility
• Governed by a board of directors

610,000 Customers
• 540,000 residential
• 70,000 commercial

Summer-Peaking Load (Air Conditioning)
• Residential peak: 4-7p.m. June-September
• Peak load ~3300 MW, of which 400MW = 40 hours

Energy Mix
• 25% renewables
  • 15% Biomass & waste
  • 2% small hydro
  • 1% solar
  • 7% wind
• 20% large hydro
• 53% natural gas
• 2% wholesale market
SMUD®  Yesterday

- Set up independent PI System for AMI Metering
  - Isolated from Dist, Gen, and Trans system
  - Currently have millions of PI Tags managed at various frequencies
- Utilize the PI Smart Interface for Silver Spring Networks UtilityIQ (UIQ)
- Developed .NET solution to aggregate load to various levels of network (Hourly Residential & 15 min C&I)
- Meter association to network provided by GIS data stored in UIQ and passed to Asset Framework (AF)
  - Leverage PI System data in STI visualizations through GIS data
SMUD® - Today

• Utilize PI Analytics server for aggregation and calculations
  – Expected to be more fluid
• Use authoritative read files from Head End System (HES)
• Maintain network connectivity model in AF
• Parallel AF DB to re-configure the hierarchy of assets
• Create awareness for PI DataLink, Asset Analytics, and PI Coresight
• After testing, replace existing AF with rebuilt AF
• Asset Health – PI/Doble, Powerbase, PowerDB, SAVI
• Planning/Modeling with Synergi for expanded DER
• Transformer/Segment Loading
• Data convergence – Ops, Customer, Cost, Reliability, Planning – Customer segmentation
• Voltage Sag/Swell Analysis
• EV Heat Map
• Phase mapping (baseline voltage, switch phase, monitor voltage)
• Data integrity optimization
• Non-RTU substation load analysis from meter up
• PI System continuity (AF, Nomenclature, CIM, Data Governance)
Kevin P Walsh

kwalsh@osisoft.com

Industry Principal – T&D
OSIsoft, LLC

Michael Greenhalgh

Michael.Greenhalgh@smud.org

Project Manager II
SMUD - Grid Assets
Questions

Please wait for the *microphone* before asking your questions

State your *name & company*
THANK YOU