AEP/EPRI Smart Grid Demo
Virtual Power Plant Simulation
Project Overview

Smart Grid Advisory Meeting
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AEP Overview

- 5.4 Million customers
- 11 States
- 39,000 MW Generation

AEP Service Territory
- 38,953 miles Transmission
- 212,781 miles Distribution
- $45.2 billion Assets (2008)
- $14.4 billion revenue (2008)
- 20,861 Employees
Virtual Power Plant Simulation Project Objective

Assess the functionality, performance and benefits of a fully integrated and robust smart grid as a Virtual Power Plant, from end-use to RTO, by leveraging real system and device information and data with a comprehensive modeling and Simulation tool.
VPPS Foundational System
South Bend, Indiana

Distribution Automation
- 8 Circuits
- 18 Reclosers

VAR Automation
- 24 Capacitor Banks

AMI / AMR
- 10,000 Smart Meters

Columbus, Ohio
Integrated Volt VAR Control

- 6 Stations
- 17 Circuits

Two control schemes
Columbus, Ohio
Community Energy Storage

2 MW, 80 – 25 kW units
Preliminary Results – Colfax 21 Circuit Plot

Preliminary Results – Colfax 21 Real Power

date

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