A Bigger Piece of the PI

Providing Tools to Improve the Distribution PI System

Presented by **Tim Amon**

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Orange & Rockland

Agenda

- About Consolidated Edison Company of New York
- PI System Overview
- Features and Tools
- Operational Example
- Growing and Improving the System
- Next Steps

Energy for New York City And Westchester

- **3.36 million electric customers**
- **36,000 miles of overhead transmission and distribution lines**
- **94,000 miles of underground transmission and distribution lines**
- **Record System Load: 13,322 MW**
- **1.1 million gas customers**
- **4,300 miles of gas mains**
- **1,700 steam customers**
- **105 miles of steam mains and lines**
- **690 MW of regulated generation**

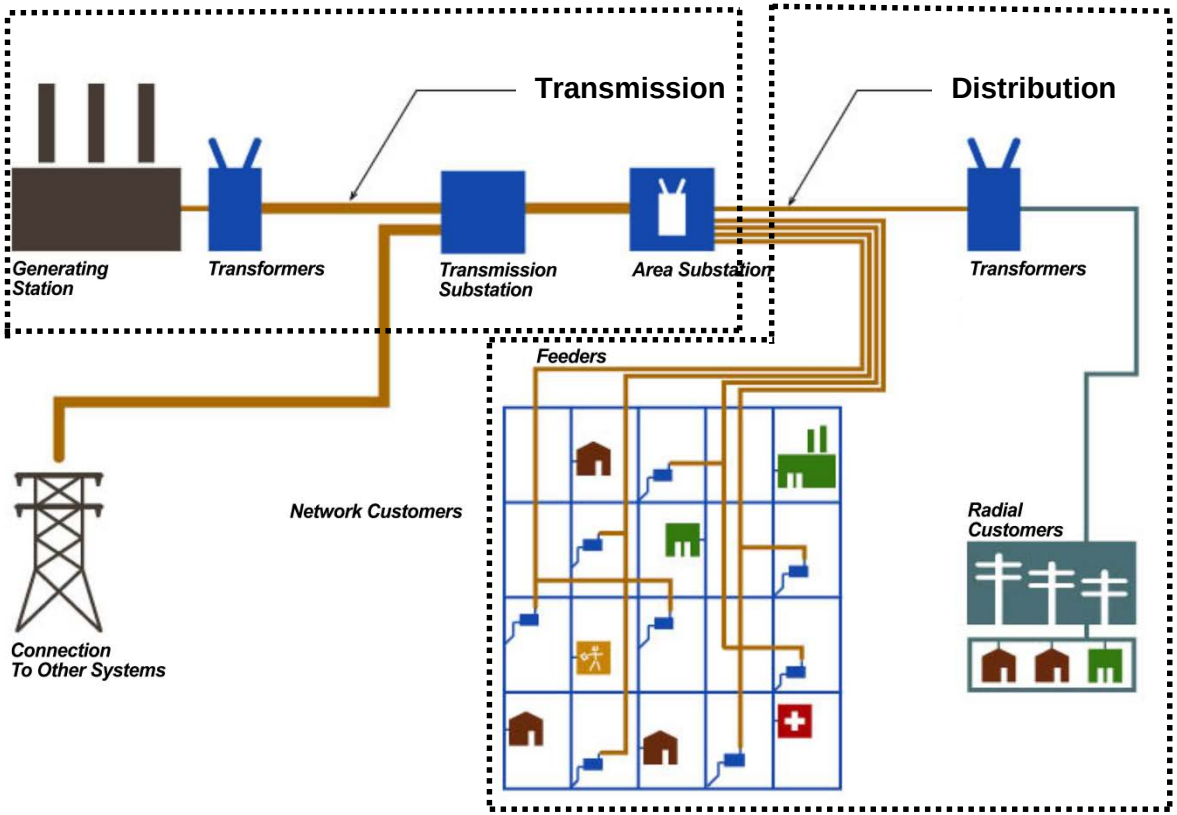
PI Systems Overview

Steam

Gas

Electric

PI Systems Overview
Electric



Distribution PI System
Quick Facts

- PI System Implementation
  - Phase 1: Completed April 2014
  - Phase 2: Asset Framework April 2015
- 1.5 Million PI Tags
- Data from SCADA Master and other legacy systems

Expansive Distribution System

- 2000 Overhead Reclosers
- 200 Underground Sectionalizing Switches
- 239 Unit and Multi-Bank Substations
  - 4kV Primary Grid System
- Others
  - Photovoltaic Sites
  - Network Protectors
  - Pole Top Voltage Regulators
  - Load Tap Changer Monitoring

Features and Tools
For Empowering Users

- Training and Customer Involvement
- Developing New Features
  - Improve User Friendliness
  - SCADA Mimic Displays
  - Email Notifications
  - Calculations and Formulas
- PI Coresight

Which Station is this?

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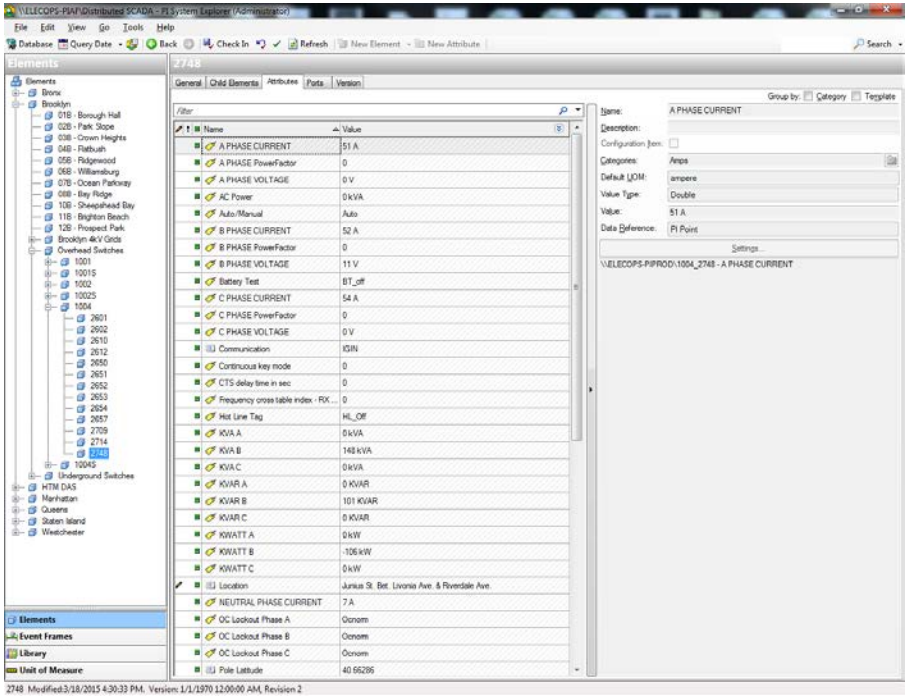
Ethelrige Station

PI Asset Framework (AF)

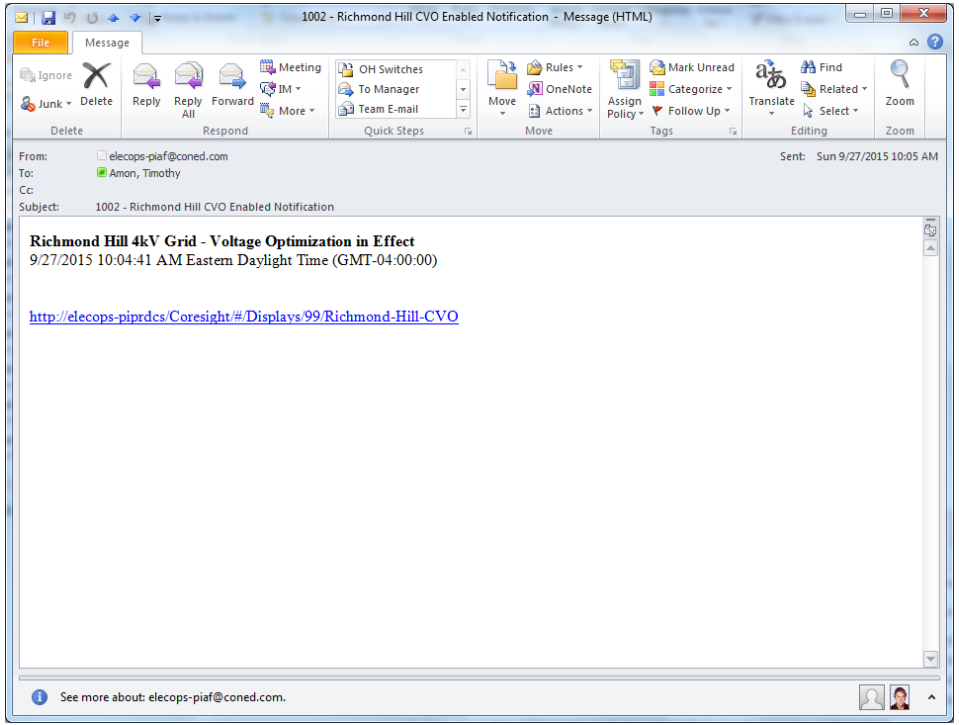
The Foundation

- Meaningful Station Names and Descriptions
- Intuitive Hierarchy
- Static Data
- Building-Block for Tools and Features



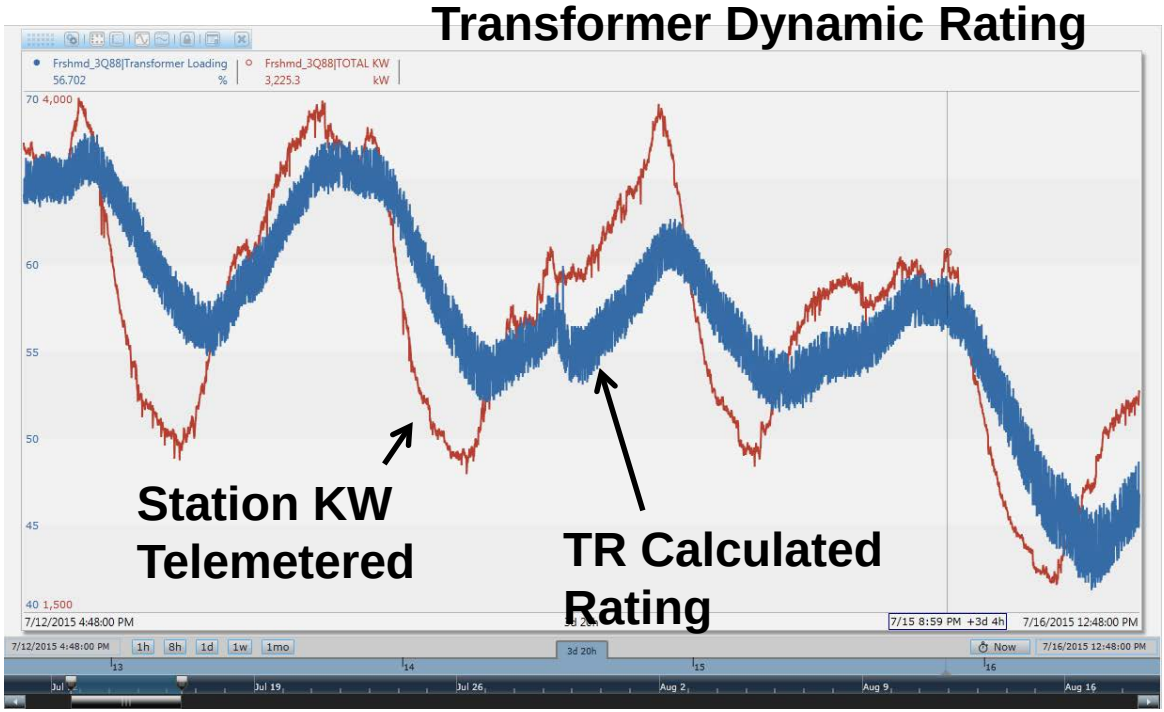
Email Notifications
For Real-Time Awareness

- Engineering and Maintenance Alerts
  - Breaker Status
  - RTU Offline
  - Battery Voltage
  - Current Imbalance
- Easily Configurable
- Template Based

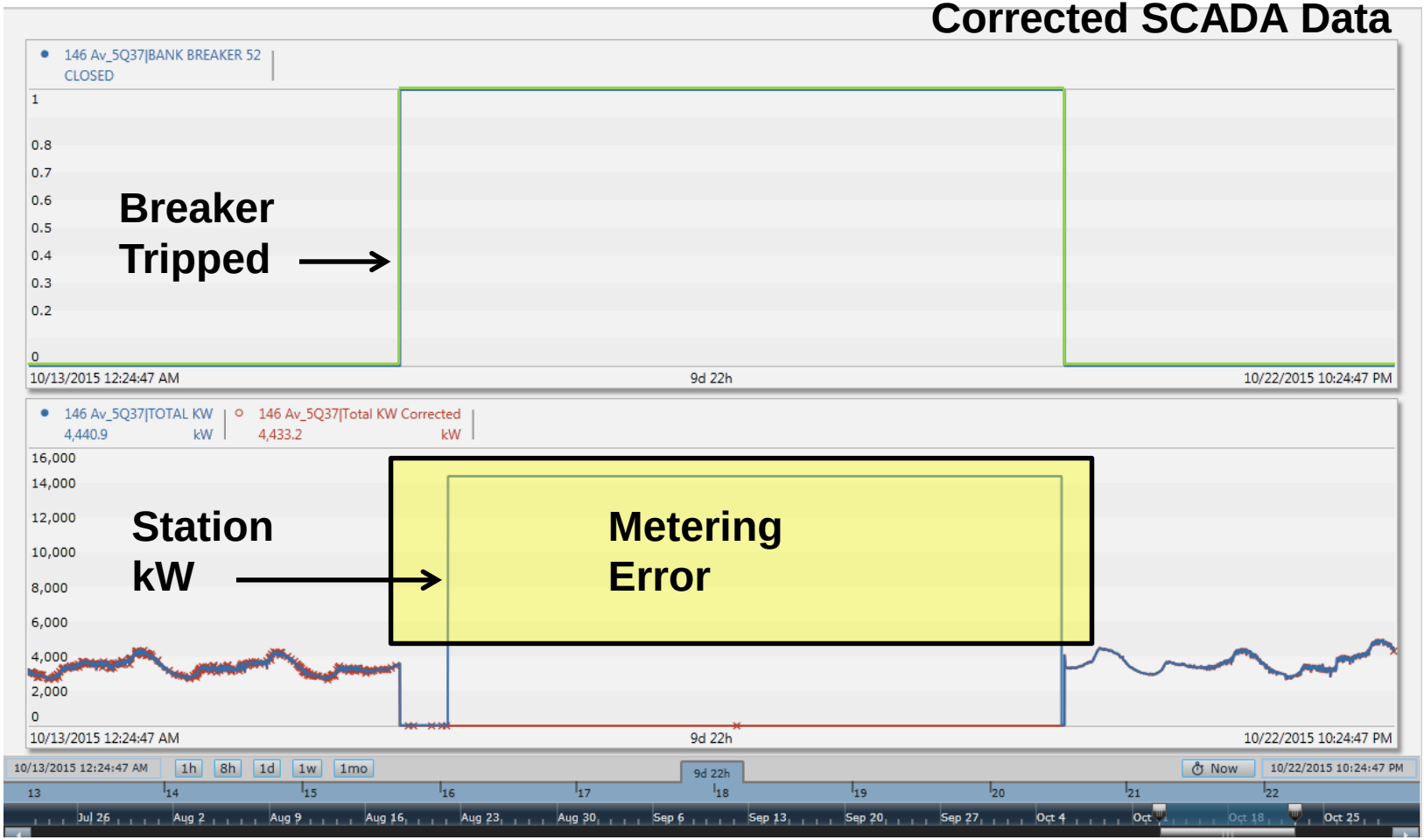


PI Calculations
For "Better" Data

- Transformer Dynamic Rating
  - Real-Time Transformer "Health" based on temperature
- SCADA Corrections
  - Correct for Metering Errors
- Total kW Loading
  - Monitor a Load Area and Detect Outages



Corrected SCADA Data

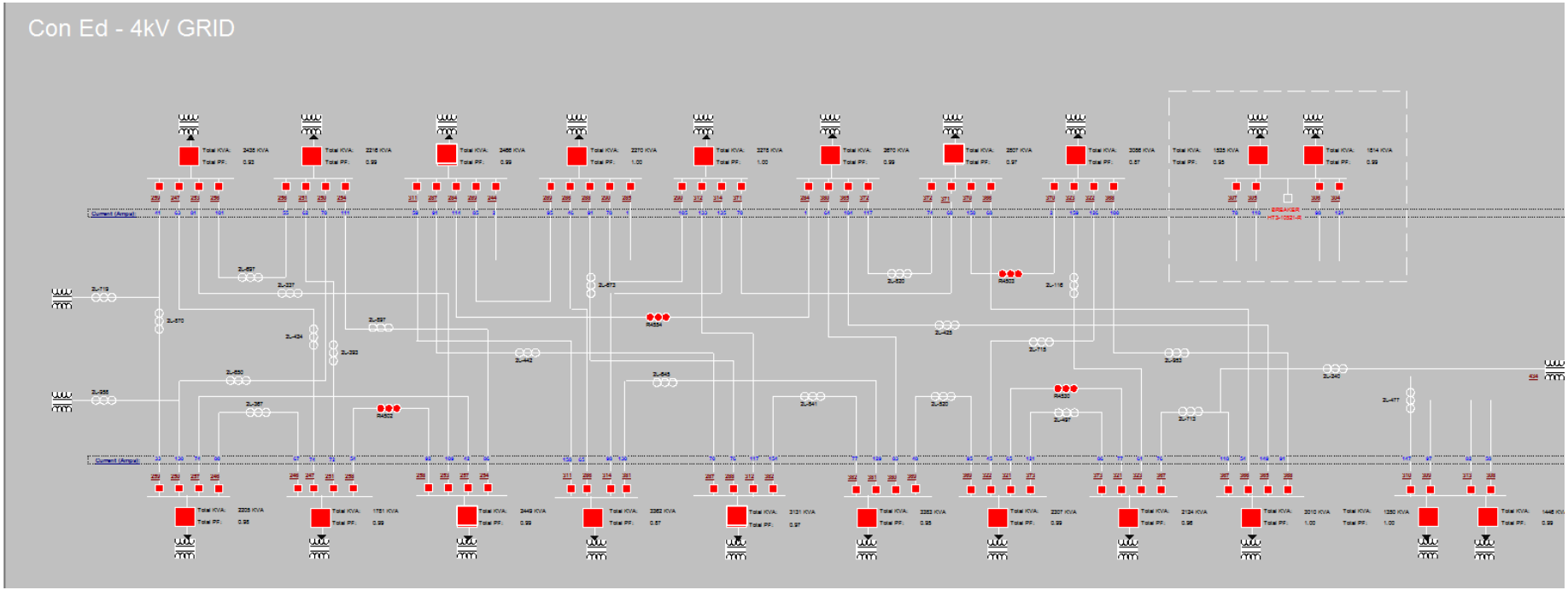


Total KW Loading

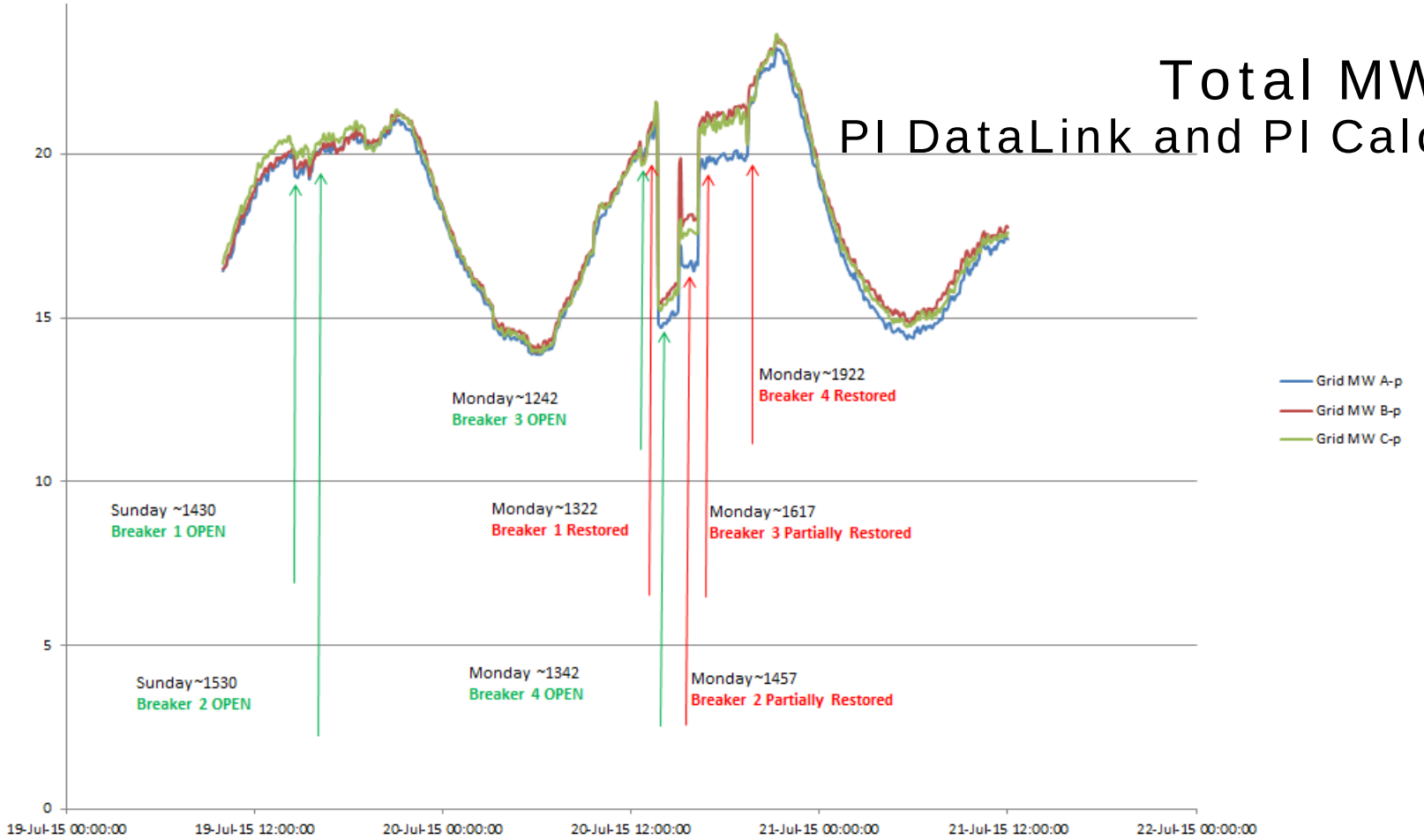
Heat Event 2015
The PI System for Operational Support

- DE Situation Room
  - PI ProcessBook Mimics
  - Real-time Event Analysis
- Post Event Analysis
  - PI DataLink
  - New Calculations and Alerts

Heat Event 2015
PI ProcessBook Display



Total MW
PI DataLink and PI Calc



Growing the Electric Distribution PI System

- Official Distribution Historian
- Replacing Legacy Systems
- One Source for Data Management and Information
- Used Extensively During our ICS and CERC Events

Next Steps

- Transition to latest PI System Applications
- Expanding and Growing
- Automating Display Update Process

The PI System as more than a Historian

COMPANY and GOAL

Con Edison is the Energy Provider for NYC and Westchester, and wanted to improve our data collection and management on the electric distribution system.

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CHALLENGE

Multiple Legacy SCADA and Data Collection systems that are not as flexible.

- Different systems managed by different teams
- Difficult to implement changes and limited tools available for users

SOLUTION

The PI System offered an easily configurable and flexible system to consolidate and improve these systems.

- PI Coresight allows information to be quickly and easily captured; empowering our users
- PI is a central data source, which can feed automatic notifications, calculations, etc.

RESULTS

The PI System tools and features allow us to do proactive and real-time response to system events.

- Email alerts allows immediate notification, and proactive response.
- Improve the way engineers and operations view and analyze data

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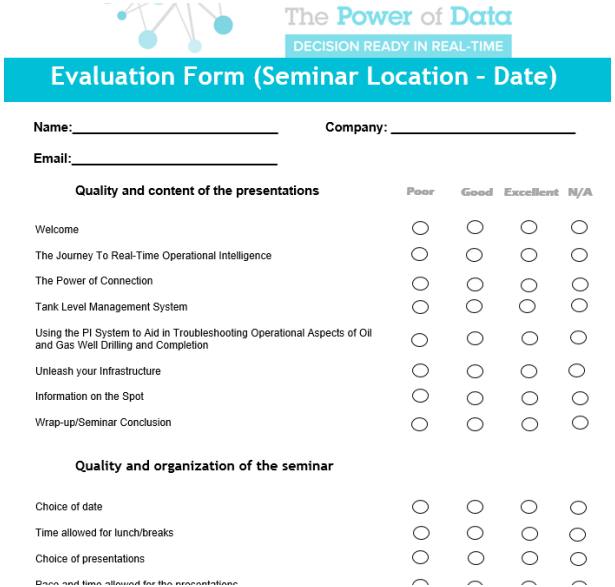
Questions

Please wait for the **microphone** before asking your questions

State your **name & company**

Please don't forget to…

Complete the Survey for this session



The Power of Data

DECISION READY IN REAL-TIME

Evaluation Form (Seminar Location - Date)

Name:_____ Company: _____

Email:_____

Quality and content of the presentations	Poor	Good	Excellent	N/A
Welcome	○	○	○	○
The Journey To Real-Time Operational Intelligence	○	○	○	○
The Power of Connection	○	○	○	○
Tank Level Management System	○	○	○	○
Using the PI System to Aid in Troubleshooting Operational Aspects of Oil and Gas Well Drilling and Completion	○	○	○	○
Unleash your Infrastructure	○	○	○	○
Information on the Spot	○	○	○	○
Wrap-up/Seminar Conclusion	○	○	○	○

Quality and organization of the seminar				
Choice of date	○	○	○	○
Time allowed for lunch/breaks	○	○	○	○
Choice of presentations	○	○	○	○
Pace and time allowed for the presentations	○	○	○	○

감사합니다

谢谢

Danke

Gracias

Merci

Thank You

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ありがとう

Спасибо

Obrigado