PA PUC – AERS & Metropolitan Edison Company Site Visit

Scott Lowry
Director-Operation Services, Met-Ed

Andrew Zulkosky
Manager-Engineering, Met-Ed

Curt Christenson
Manager-York Customer Operations Center, Met-Ed

Steve Iseman
Manager-Customer Service, Met-Ed

Shayne Smith
Advanced-Customer Service Specialist, Met-Ed

October 26, 2010

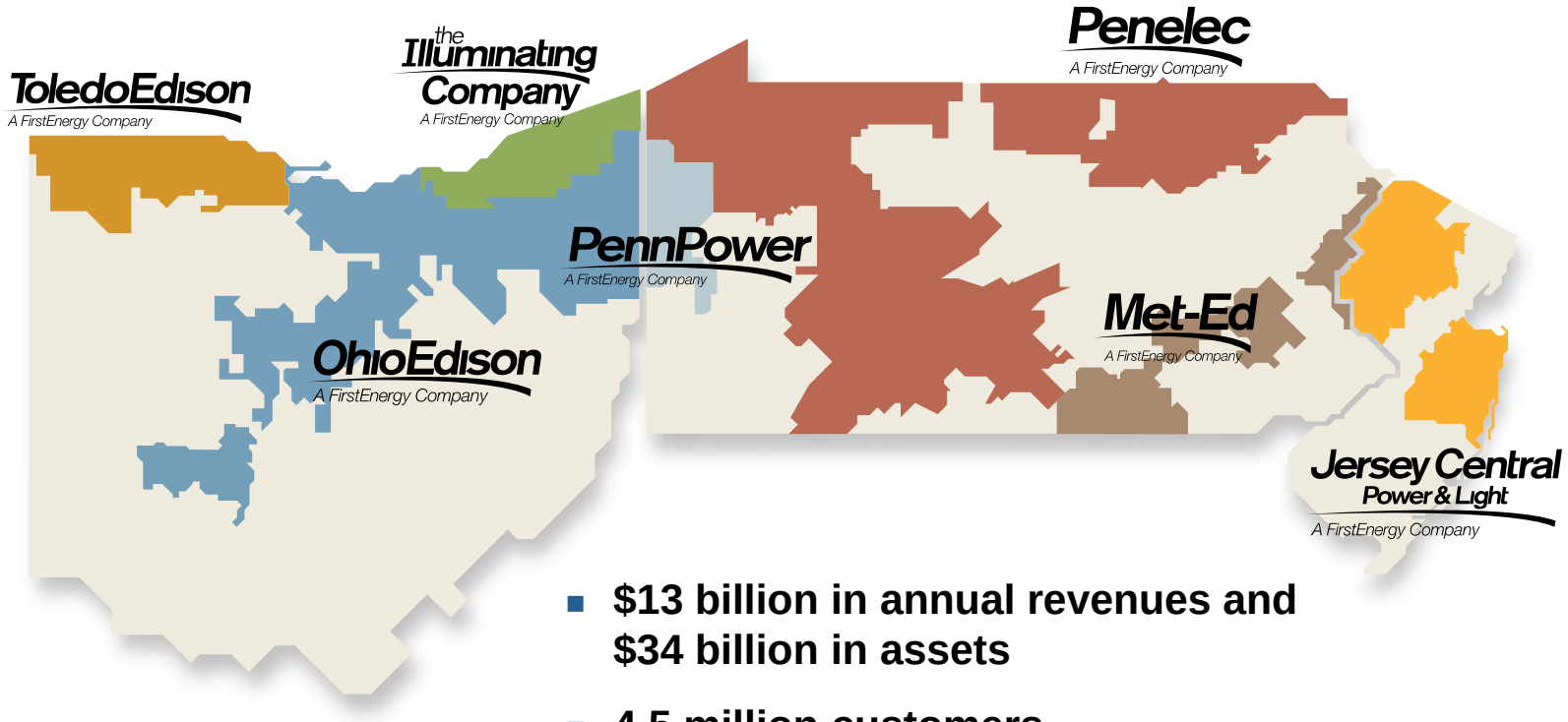
Agenda

- **Welcome & Introductions**
- **FirstEnergy & Met-Ed overview**
- **Reliability Standards & Reliability Performance at Met-Ed**
- **Met-Ed Reliability Improvement Initiatives**
- **FirstEnergy Storm Restoration Process**
- **York Smart Grid Project**
- **Tour – Harley Davidson**
- **Field Tour – Met-Ed Reliability Initiatives**

FirstEnergy Corp.

- **Headquartered in Akron, Ohio**
- **Seven electric utility operating companies**
- **5th largest investor-owned electric system in the U.S. based on 4.5 million customers served**
- **Ranked 179 among Fortune 200 companies in 2010**

FirstEnergy Summary Profile

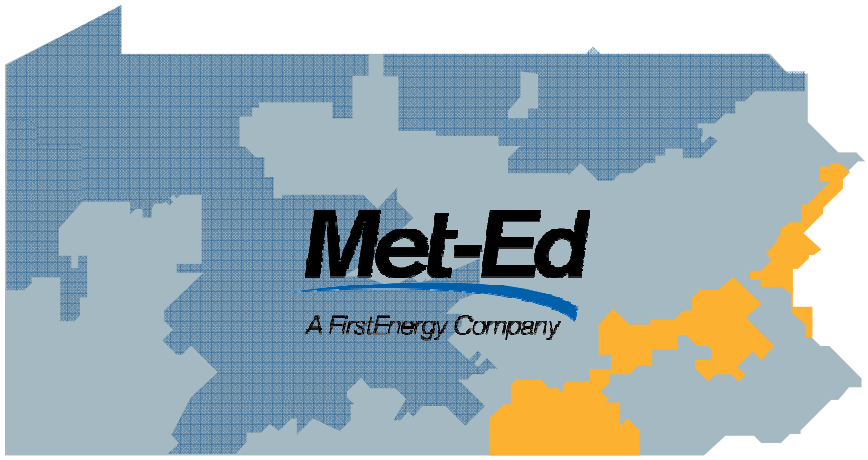


- **$13 billion in annual revenues and $34 billion in assets**
- **4.5 million customers**
- **17 generating plants; nearly 14,000 MW**
- **Approx. 133,000 transmission and distribution circuit miles**
- **Approx. 13,500 employees**

Metropolitan Edison Company

Company Facts

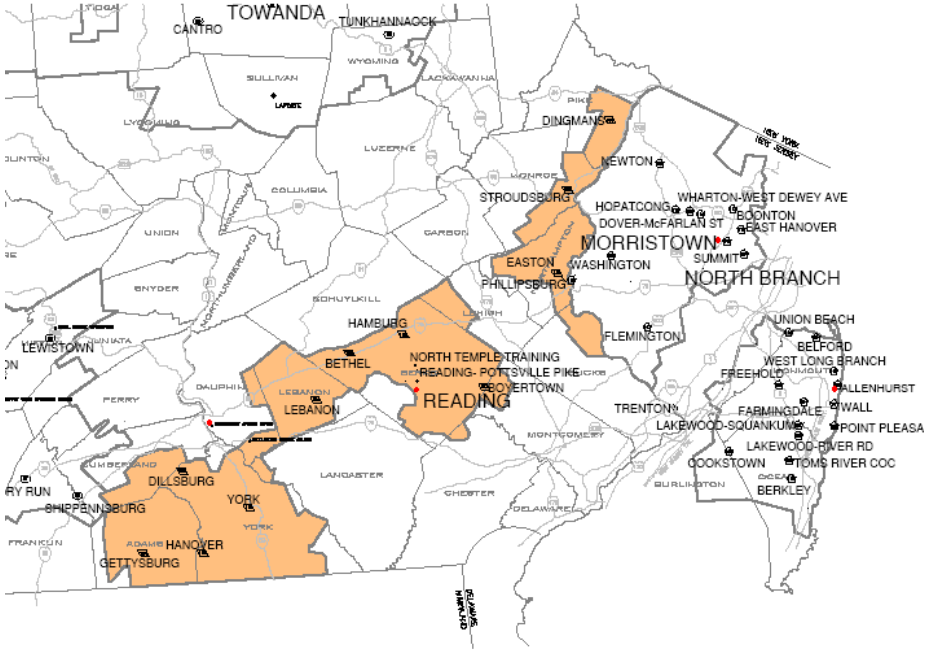
- **549,000 customers**
- **3,300 square miles**
  - 14 of 67 PA counties
- **13,607 million KWH delivered (2009)**
  - 40% Residential
  - 34% Commercial
  - 26% Industrial/Streetlight
- **$1.4B assets net of depreciation**
  - 14,678 distribution circuit miles
  - 1,422 transmission circuit miles



Met-Ed System Overview

- System Voltage
  - Transmission: 500, 230, 115 KV
  - Sub transmission: 69, 34.5 KV
  - Distribution: 34.5, 13.2, 4.8 KV
- 216 Substations (physical locations)
- 762 Distribution Circuits
- 16,336 Circuit / pole miles
  - 1,415 Transmission pole miles
  - 14,921 Distribution circuit miles

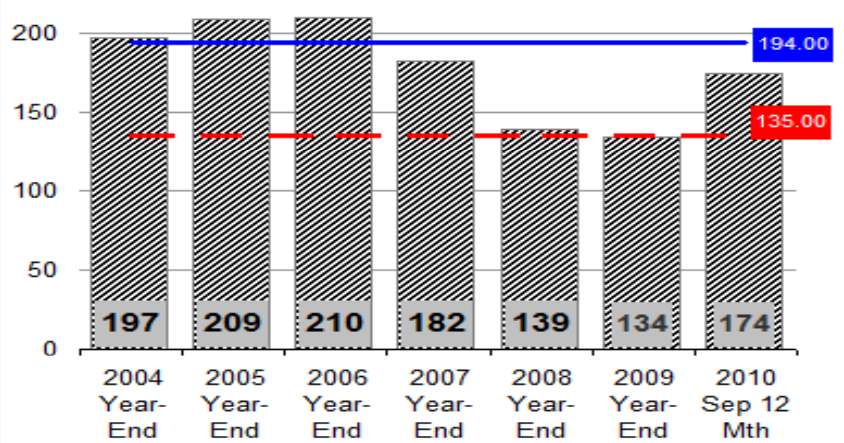
Met-Ed



Met-Ed Performance

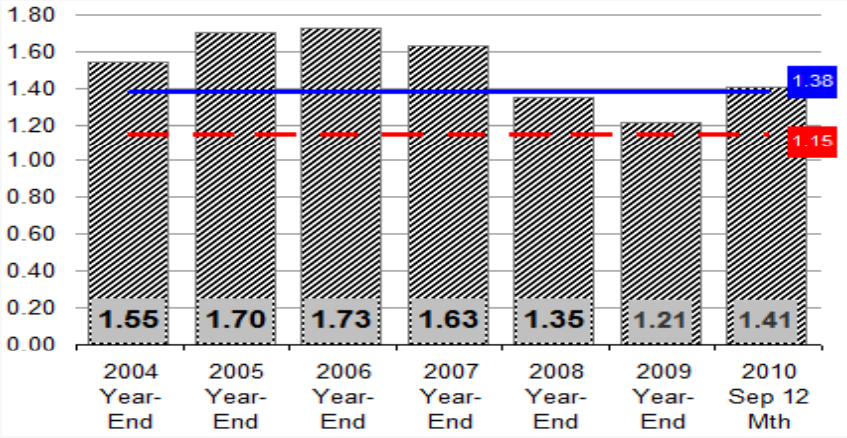
PaPUC Benchmark
PAPUC Standard

Reliability: SAIDI



* 12 Month Rolling as of September 2010

Reliability: SAIFI



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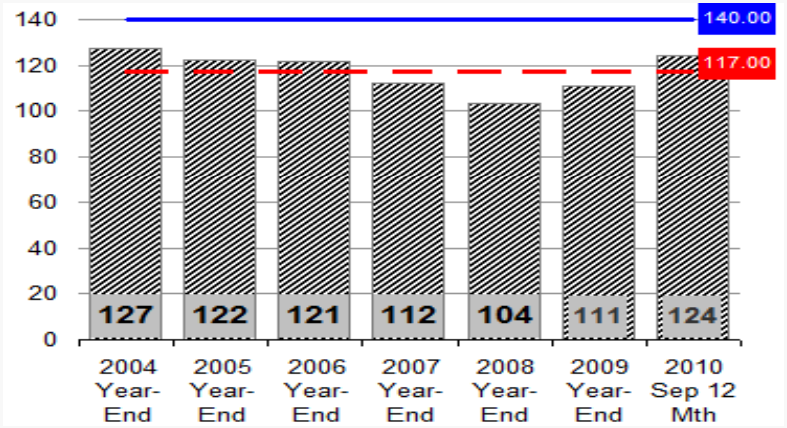
Reliability: CAIDI



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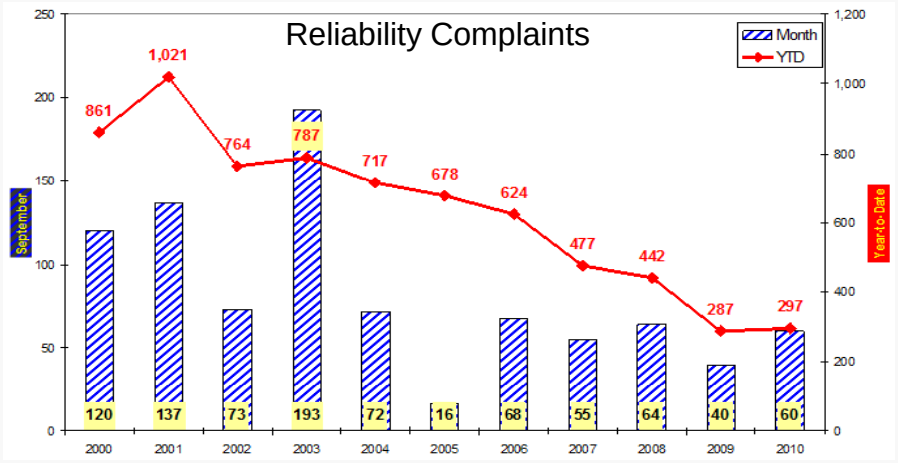
Customer Satisfaction



September

Met-Ed Focused Reliability Audit - 2007

Consultant's View of Met-Ed

- **90% of reliability statistics are Distribution Caused Outages**
- **Storm-proof the 3-phase Distribution Backbone**
  - Addition of Fuses & Reclosers
  - Off-Corridor Priority / Danger Tree Program
  - Additional Lightening Protection
- **Prompt restoration of service (in particular the 3-phase backbone)**
- **Proactively manage Worst Performing Devices & Customers Experiencing Frequent Interruptions**

2007 PA Focused Reliability Audit Recommendations

- **8 <u>Primary Impact</u> Recommendations**
  - Fuses/Reclosers, Priority / Danger Tree program, Lightning Protection, Lightening Mitigation, Partial Restoration, Emergency On-Shift Staffing, Call-Out Response, Pager Notifications

- **10 <u>Secondary Impact</u> Recommendations**
  - Reduce Substation CM backlog, Develop Mobile Transformer Installation Plans for Selected Substations, Investigate Causes/Remedies of Car Pole Accidents, Redirect OH Line Inspections Program to Worst Performing Circuits, Develop Solutions to Capacity Challenges in Stroudsburg Area, Proactively Manage Situations where Customers Experiencing Frequent Interruptions, Establish Back-up Plan for 28 MVA Spares, Develop Plan to Implement Adaptive Relaying, Improve Restoration Time Reporting, Hire 15-23 Linemen Annually/10 years

Power of Protection

Reliability Improvement Results from the Fusing & Recloser Initiative

	Approximate SAIDI Savings	Circuit Lockouts Prevented
2007	25	26
2008	48	72
2009	58	82

Met-Ed 2010 Reliability Strategy

- ❑ Enhanced Vegetation Management
- ❑ Circuit assessments
- ❑ Recloser Inspections
- ❑ Distribution Capacitor Inspections
- ❑ Distribution Regulator Inspections
- ❑ Wood Pole Inspections
- ❑ Priority Pole replacements
- ❑ Radio Controlled Switch Maintenance
- ❑ Switch Battery Checks/Replacements
- ❑ Condition Item Backlog
- ❑ Radio Controlled Switch Installations
- ❑ Regulatory Commitments Internal Preferred Practices
- ❑ Smart Grid / Energy Efficiency Initiatives

- ❑ Install Fuses
  - ❑ Expand Off-Shift Staffing
  - ❑ Condition Item Backlog Prioritized
  - ❑ Targeted Fault Finder Application
  - ❑ Quarterly Serviceman Meetings
  - ❑ Abnormal Equipment Tracking Repair
  - ❑ Monthly Reliability Review Meeting
  - ❑ Targeted Fault Finder Installations

FirstEnergy Storm Restoration

Storm Process Goals

- Provide safety to our employees and the public
- Provide for prompt assessment of damage and identification of resource requirements
- Provide for prompt restoration of service to our customer
- Provide for accurate reporting of restoration progress to company personnel, customers, media contacts and regulators.

FE Storm Restoration – Distributed Dispatching

Restoration Priorities

HAZARDS

- Eliminating verified safety hazards is always top priority
- Once hazard has been cut in the clear the priority of the hazard is reduced

OUTAGE RESTORATION

- Transmission and Substation Outages
- Distribution Outages – priority function of number of customers affected & type

Consider following customers as priorities:

- Hospitals without emergency generator backup
- Critical life support customers
- Telephone exchanges without emergency generator backup
- Water supply & pumping stations
- Sewage treatment system
- Police departments
- Fire departments
- Correctional institutions
- Radio & TV stations and newspapers
- Hospitals with emergency generator backup
- Telephone exchanges with emergency generator backup
- Rural Electric Cooperatives (REC's) / Rural Electric Associations (REA's)

FE Storm Restoration – Distributed Dispatching

Restoration Priorities

OUTAGE RESTORATION **continued**

- Other Outages
  - Single-phase outages
  - Transformer outages – Industrial, Commercial, and Residential (in that order)
  - Secondary outages
  - Service outages
  - Street light outages
  - Foreign companies
  - Customer-owned equipment

FE Storm Restoration – Distributed Dispatching

Process Sequence

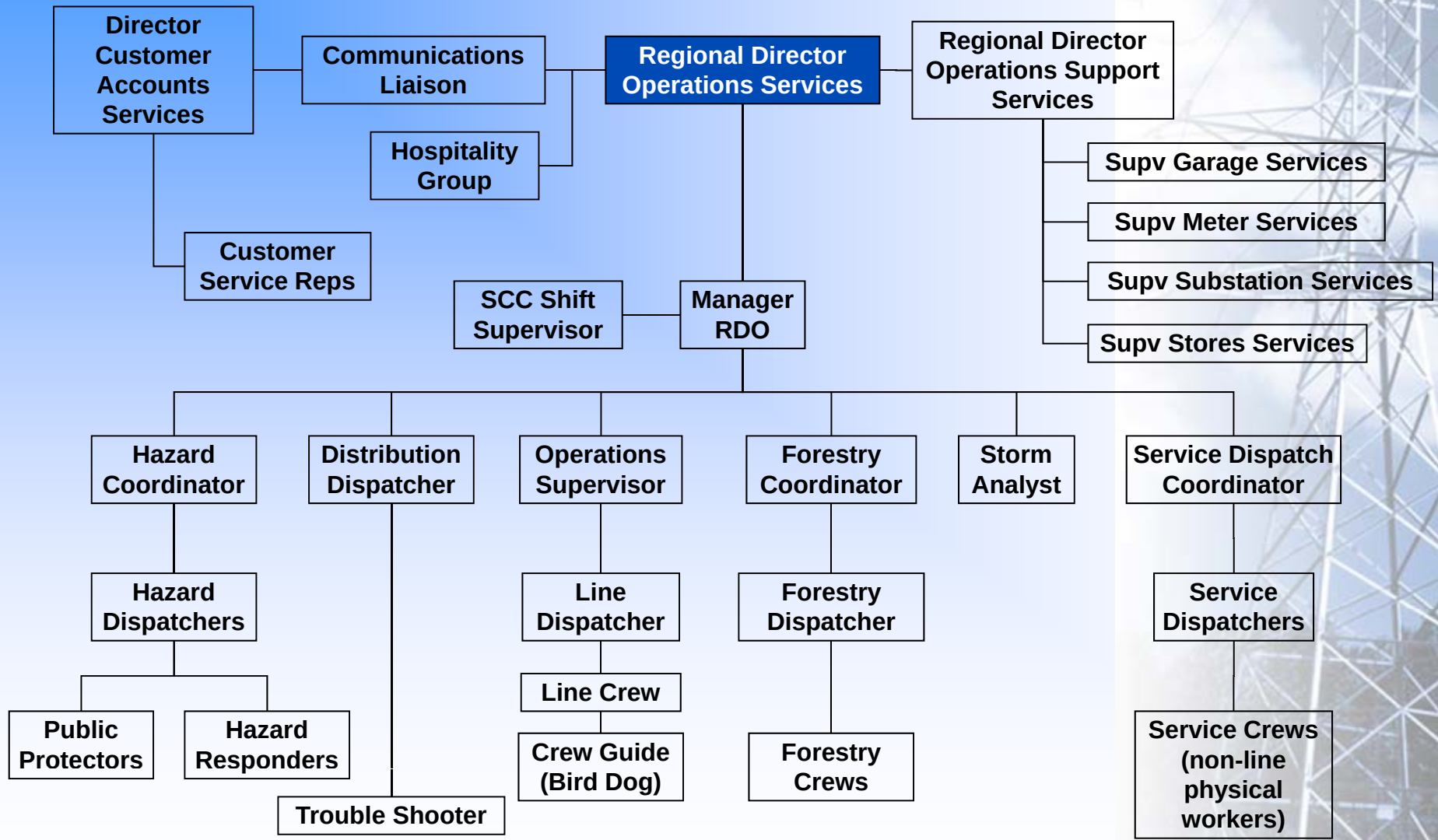
Relative Storm Time Line
Field Personnel Work Assignments

Storm Start

Storm End

TROUBLEMEN	**Circuit Outages Hazards**	**Recloser & Fuse Outages**	**Smaller Isolated Outages**	**Service Drop Work & Clean-up**
LINE	**Trouble & Hazards under RDO direction**	**Primary outages**	**Secondary outages**	**Service Drop Work**
SUBSTATION	**Circuit Outages**	**Hazard Responder**	**Service Drop Work / Misc Line Support**	
FORESTRY	**Tree Work needed before Line Crews**	**Tree Work needed concurrently or after Line Crews**		
METER	**Hazard Responder**	**Service Drop Work**		
ENGINEERING	**Hazard Dispatch / Hazard Responder / Damage Assessment / Single Customer No lights**			
	Assist RDO with duties as assigned: Storm Analyst, Load transfers, Call-backs, etc.			
Customer Services Revenue Ops & Misc Depts	**Hazard Responder / Public Protector / Crew Guides**			

FE Storm Restoration
Organization Chart



Metropolitan Edison Company
Smart Grid Modernization Initiative

Project Overview:
Distribution Automation
Volt Var Control
Direct Load Control

Smart Grid Modernization Initiative

Met-Ed
A FirstEnergy Company

Cross-Cutting Technologies		Met-Ed ($30M)	
Distribution Automation		✓	
Volt / VAR Control		✓	
Integrated Distributed Energy Resource Direct Load Control		✓	

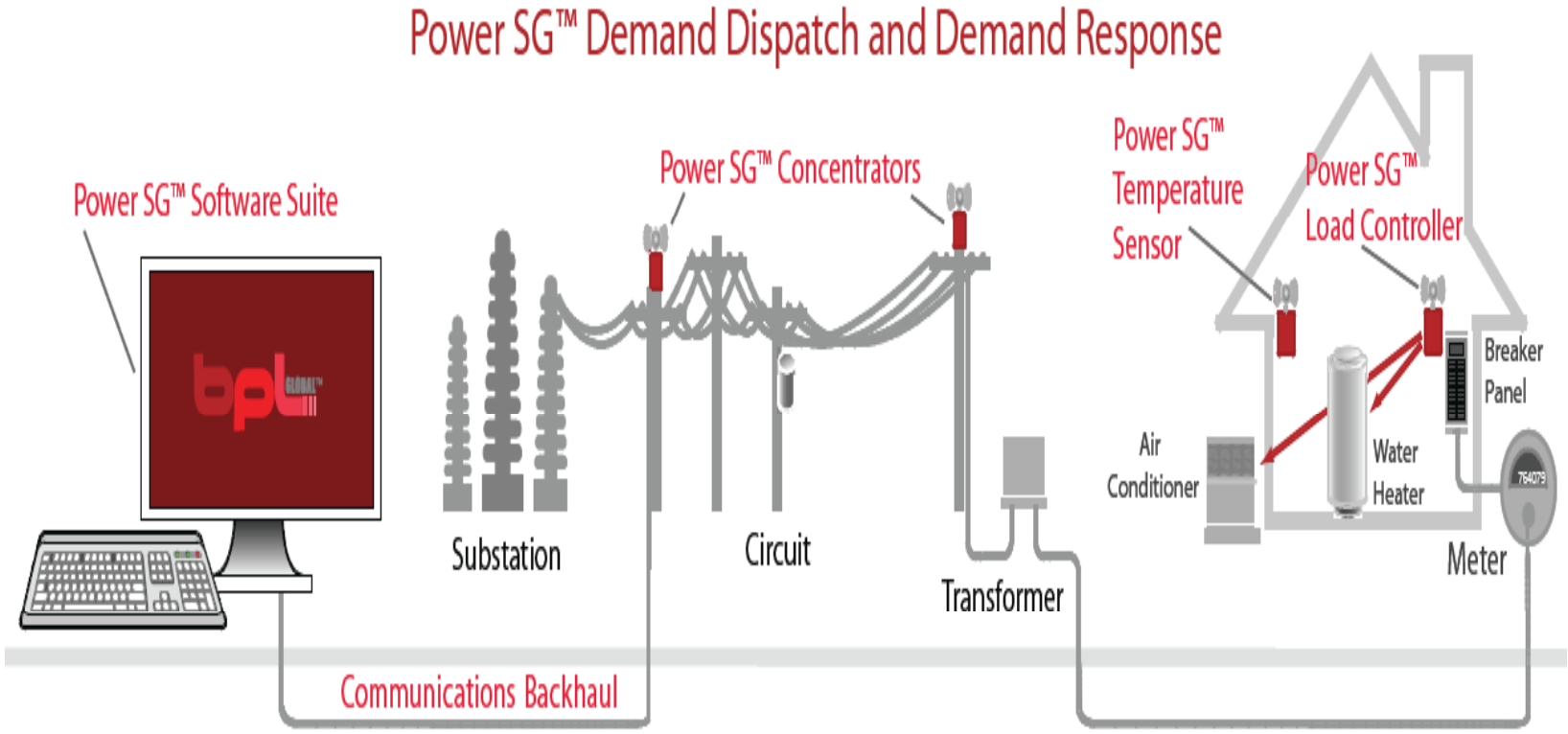
- Period of performance = 60 months
  - Clock started 6/2/10 with signed DOE Agreement
- Implementation = 36 months & data collection for balance of period

Smart Grid Modernization Initiative

SGMI Technology	Application / Scope	Qty
Distribution Automation	Substations	11
Distribution Automation	Feeders	26
Distribution Automation	Customers	26,000
Circuit Breakers	DA	8
Line Reclosers	DA	61
Volt/Var Control	Feeders	22
Volt/Var Control	Customers	12,000
Capacitor Controller	VVC	43
Voltage Regulator	VVC	6
Voltage Sensor	VVC	100
Direct Load Control	Customers	23,000
Direct Load Control	Reduction (MW)	28.8

Estimates as submitted to DOE, subject to revision

Direct Load Control Summary



Direct Load Control Summary

Data Concentrators / Repeaters

AC Controller / Temp Sensors

DLC Summary

DLC Control Software