

ComEd 2014 Summer Preparedness

Presentation to the Illinois Commerce Commission

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Looking Back at 2013

- 2013 was one of the best reliability performance years on record
 - SAIFI best performance on record with and without reportable storms; 0.99 and 0.72 respectively
 - CAIDI of 143 minutes was favorable to the five year mean of 207 minutes; without reportable storms CAIDI of 77 minutes was the second best performance on record
- Experienced 17 storms (8 reportable) resulting in 1.3M customer interruptions
 - Five year mean is 22 storms (11 reportable) resulting in 2M customer interruptions
 - Heavy rainfall and record flooding during April 17 storm
 - One tornado on June 24 and four tornadoes on November 17
- Peak load was 22,269 MW on July 18
- Best safety performance on record (OSHA Recordable 0.71)
- EIMA investments benefitted more than 1M customers, avoided 300,000 customer interruptions
- Restoration times improved for the second year in a row driven by process improvements from our Storm Task Force
- Overall customer complaint volume decreased 26% from 2012
- Customer reliability complaints are lowest on record



Prepared for Summer 2014

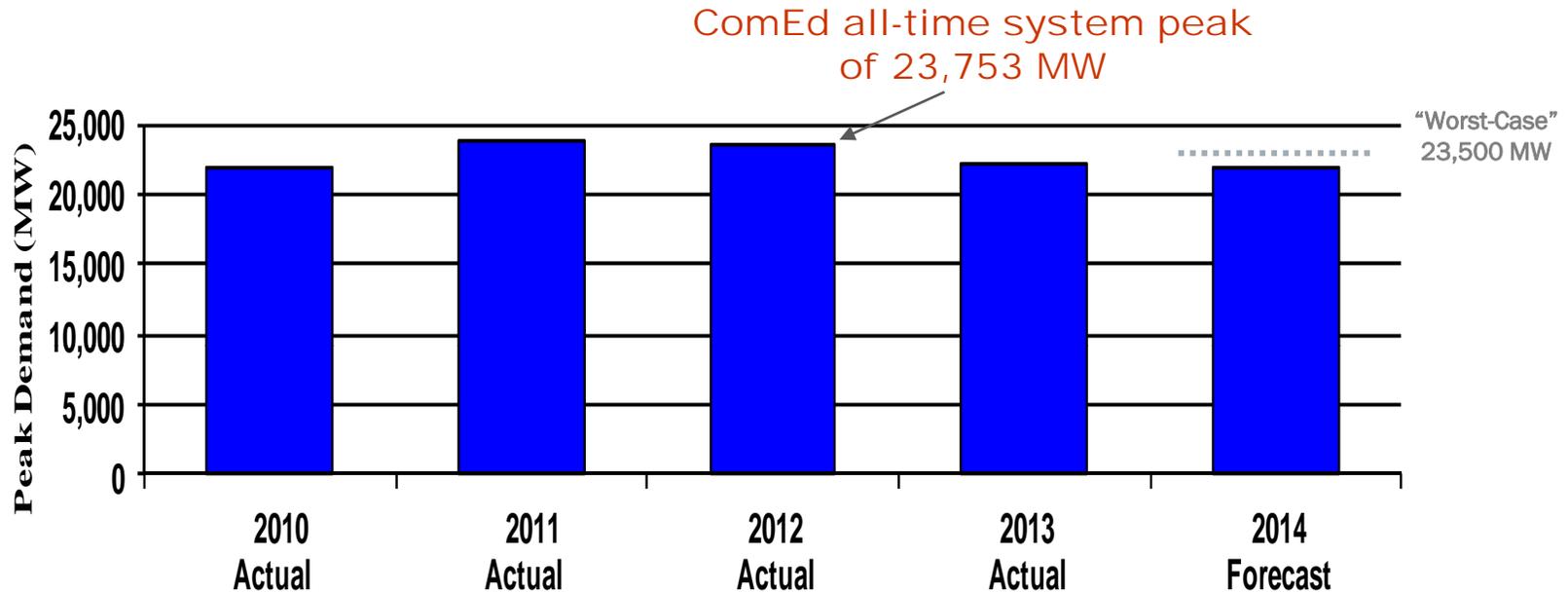
ComEd is well positioned to respond to significant threats to the grid during the summer months

- ComEd 90/10 summer peak load is forecasted at 23,500 MW
- Demand response programs are in place
- Transmission and Distribution Summer Capacity Expansion projects to complete by June 1
- Proactive annual distribution and transmission system maintenance to complete by June 1
- Significant investments in reliability and storm hardening continue driven by EIMA
- Storm Task Force is driving third year of continuous improvement
- Annual emergency response training and exercises are complete
- Variety of customer channels such as Facebook, ComEd.com, ComEd Mobile App, and text messaging offer improved outage reporting options and customer service
- Contingency plans, spare equipment, and flood mitigation plans are in place



Generation and Transmission Adequacy

Generation and transmission supply exceeds forecasted demand



- “Worst-case” expected peak load is assumed is 23,500 MW (90th percentile); 22,000 MW for normal weather (50th percentile)
- No transmission constraints are expected to compromise reliability
- Generation retirements have been mitigated

Demand Response

- Demand Response is estimated at 1,310 MW by 6/1

Annual System Capacity and Reliability



40MVA Replacement at Hanson Park in Chicago

Capacity Expansion

- 148 projects: 6 Transmission/Substation and 142 Distribution
 - 143 projects (97%) are electrically complete

Reliability Improvement Programs

- Lightning Enhancements; 13 of 18 circuits complete
- 1% SAIFI/CAIFI system performance; 35 of 62 circuits complete
- Distribution Cycle Trimming; 449 of 1,304 circuits complete
- Transformer monitoring technology decreased failures from 9 in 2012 to 1 in 2013

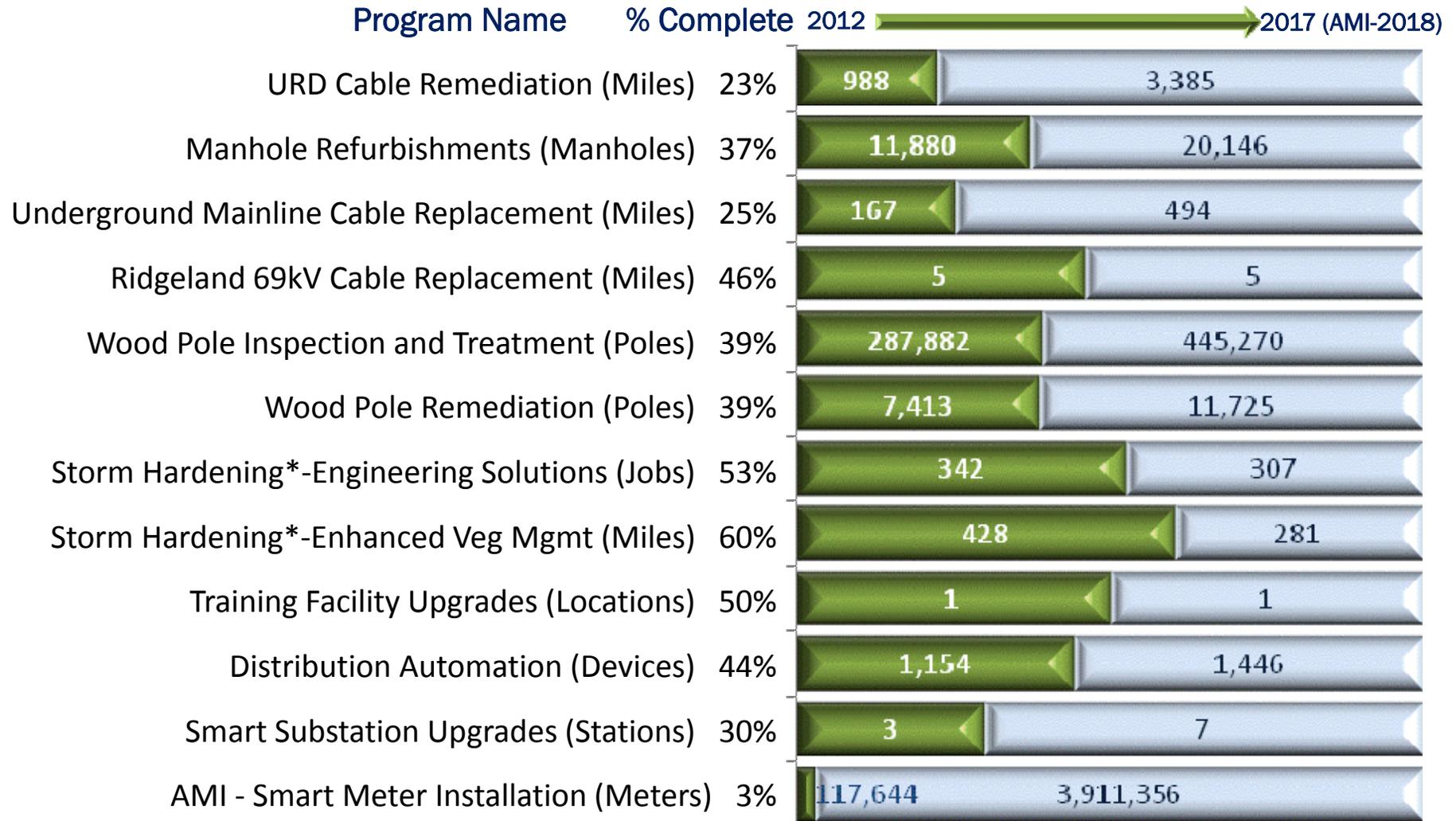
2014 Forecasted Load Performance

- No transmission facilities projected to be loaded above 100% of applicable ratings under normal summer peak scenarios
- No distribution substations projected to be loaded greater than 100% of applicable ratings under "worst case" summer peak scenarios
- No distribution circuits projected to be loaded greater than 105% of ratings under "worst case" summer peak scenarios

EIMA Investments Improving Service

37% of the program work is complete benefiting 1.3M customers through March 2014

 Completed
  Remaining



* Remaining scope are estimates – developed annually based on criteria

** AMI does not include the 127,857 meters installed via the pilot

URD = Underground Residential Distribution

EIMA Investments Improving Service

Storm Hardening continues in targeted areas

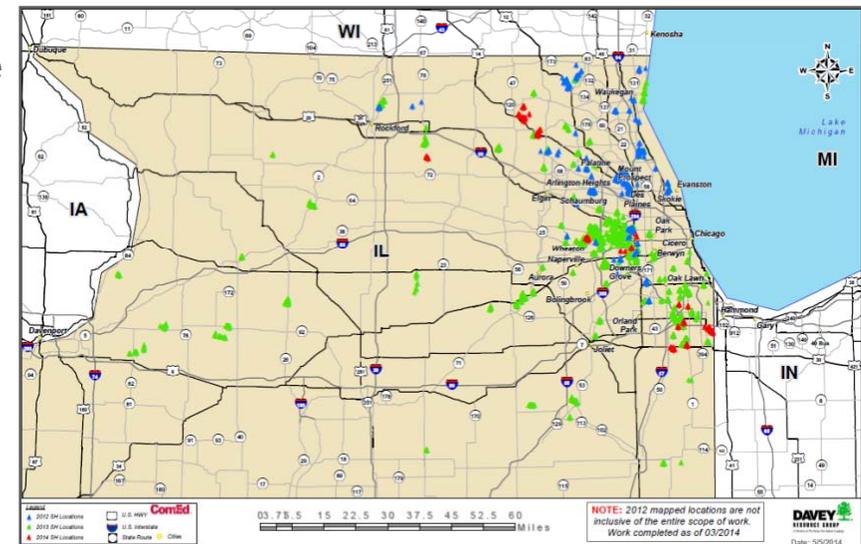
- Engineering Solutions - 53% of work completed
 - Overhead to Underground Solutions
 - 13 projects completed for 26,000 feet
 - 24 projects remaining in 2014 for 66,750 feet
 - Spacer Cable Solutions
 - 65 projects completed for 160,100 feet
 - 40 projects remaining in 2014 for 122,000 feet
 - Reconductoring, Reroute and Trip Savers Solutions
 - 16,000 feet completed; 239 trip savers installed
 - 2 projects remaining in 2014; planned for 2nd quarter completion
 - Benefits 227 municipalities



Before

After

- Enhanced Vegetation Management - 60% complete
 - Miles worked: 428; Circuits worked: 440
 - Trees Trimmed: 27,483; Removed: 23,428
 - More than 120 municipalities affected
 - Removed 46% of trees worked, which is a long term benefit to the system
 - Enhanced outreach to customers prior to and after tree trimming
 - Investments in vegetation management have increased by 20% over 2011



3 years of enhanced vegetation trimming/removals

EIMA Investments Improving Service

EIMA Benefits - Inception To Date Through March 2014

- Distribution Automation (DA) Programs
 - Avoided 270,000 Customer Interruptions
 - DA benefitting nearly 60% of customer base
- Mainline Cable Programs
 - Avoided 210 Cable Faults or 154,000 Customer Interruptions
 - 660 mainline underground faults in 2013 are best in a decade
- Underground Residential Distribution (URD) Cable Programs
 - Avoided 1,028 Cable Faults or 109,000 Customer Interruptions
 - 6,020 URD faults in 2013 are lowest in 3 years
 - Average number of customers affected per fault is best on record
- Storm Hardening Programs
 - Storm Hardening is designed to reduce long duration interruptions
 - Avoided 217,000 Customer Interruption Hours
- Advanced Metering Infrastructure (AMI)
 - Eliminated 281,379 Manual Meter Readings



IntelliRupter installation



Manhole rebuild

Improving Capacity and Reliability through System Investment

- Capacity Work and Major Reliability Upgrades

- New Veterans Substation in Lockport to complete June 2014
- Plano and Lisle Substation upgrades to complete June 2014
- Galewood transformer upgrades to complete June 2014
- On-going work at substations to harden O’Hare sources; two new underground 34kV lines to reduce overhead exposure were placed in service in March 2014
- Northwest Reliability Project – 138kV Algonquin Tap in service November 2013 (5.5 miles)



Waukegan



Burnham-Taylor

- Overhead Transmission Line Investment

- Tower raising for improved clearance and increased capacity on 36 transmission lines
- Utilizing new conductor, reducing tower modification costs
- Phase raiser system installed on energized H-frame structures

Generation Retirement Preparedness

- New Waukegan substation is on track to complete by June 2015; 345kV and 138kV yards livened April 2014
- Burnham-Taylor 345kV circuit upgrades placed in service in March
- New Prospect Heights Static Var Compensator is on track to be in service by June 2014

Emergency Preparedness

Mutual Assistance

- Participant in Edison Electric Institute (EEI) National Response Event process designed to enhance the process for sharing resources among utilities for a major, national event (i.e. Hurricane Sandy)
- Southeastern Electric Exchange (SEE) membership broadens our reach to seek additional resource assistance in response to major storms
- Participant in EEI Spare Transformer Equipment Program (STEP) to meet critical equipment demand during Department of Homeland Security Events

Storm Response Improvements

- Improved communication flow for Joint Information Center/Joint Operations Center and streamlined critical customer reporting
- Refined the structure of the Area Restoration process for heavily damaged areas
- Improved overall efficiency of vegetation crews
- Created inventory stocking strategy and added resources for material delivery
- Implemented technology to more effectively manage and track crew makeup, instituted a Productivity Manager, and optimized storm staffing
- Minimized multiple storm role assignments to increase employee satisfaction and expertise
- Increased regional dispatcher effectiveness



Mobile Incident Command Center

Emergency Preparedness Operational Exercises

Blackout Restoration Preparedness

- Multi-department exercise took place February 11 in conjunction with PJM system-wide exercise
- Benchmarking visit at SDG&E was held on March 20 to review 2011 Blackout

Emergency Preparedness Executive Storm Response Symposium

- ComEd and EEI co-hosted the May 1-2 event in Chicago
- 60 company leaders from 29 companies were in attendance
- Leaders discussed optimal approaches for major event restoration and shared best practices

City of Chicago Emergency Response Exercise – Scheduled for the Fall of 2014

- Focus will be on notifications and response to damage of electrical infrastructure inside the city
 - Scenario: Terrorist action initiates explosion/damage
 - Objectives include multi-agency coordination, communication and improved readiness
 - Partnering with City of Chicago OEMC and seeking participation from ChicagoFIRST, IEMA, FEMA, FBI, DOE, CTA, Chicago Fire, Chicago Police, Midway Airport, Cook County DHSEM, etc.

Feeder SPOC Task Force Exercise

- ComEd, BGE and PECO conducted the exercise in Philadelphia on April 1-3 with a Feeder SPOC Task Force team and EP Support personnel representing each company

Additional Preparedness Drills/Exercises: Flooding, Substation Event/Fire, Load Shed, and Joint Operation Center (JOC) Drills; Business Continuity Exercises; IEMA sponsored Earthquake Exercise; and EEI National Response Event (NRE) Exercise

Communicating with Our Customers

Estimated Time of Restoration (ETR) Strategy

- Communication strategy tailored to size and type of event

Call Center

- On-boarding underway for 96 temp CSRs to accommodate summer storm call volumes
- Two separate facilities for back-up during Business Continuity events

Reaching Customers through Technology

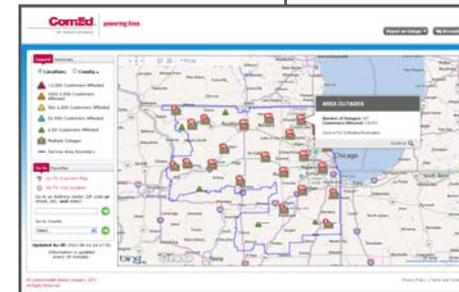
- Ability for customers to report outages without logging into ComEd.com – no need to create online account and remember logins/password
- ETRs available through Mobile App and Outage Maps
- Mobile App, with over 2M transactions in 2013, allows customers to manage aspects of their account such as bill pay, two-way text messaging and outage map
- Outage Alerts – in excess of 100,000 subscribers
- ComEd.com – *Contact Us* web improvement providing more line of site to customers for ease of reaching out to ComEd; over 365,000 hits since June 2013

Bill Redesign

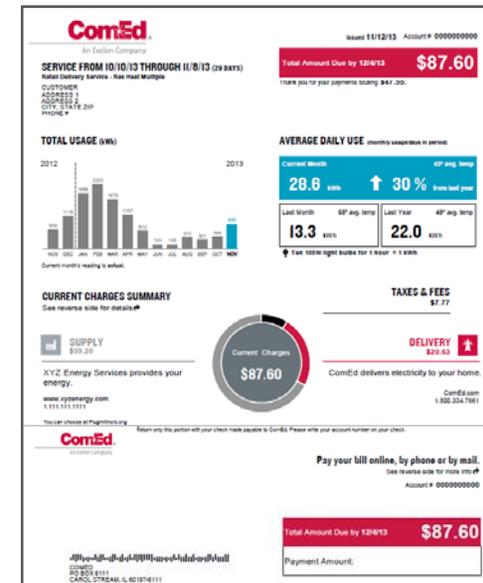
- Crowd sourcing utilized to produce a more user friendly bill design; rolled out March 2014



ComEd App



ComEd Outage Map



New ComEd Bill

Contingency Planning

Emergency Equipment Ready and Available for Storm Season

- Six Mobile Substations
- 2 MW Generators – 17 ComEd owned units, with additional generators on standby with vendor
- 29 Portable Generators (125kVA, 175kVA, and 250kVA)
- Spare substation transformer fleet includes:

Transformer Class	Units on System	Spare Inventory
33 MVA	26	4
40 MVA	576	9
50-60 MVA	132	6
75 MVA	11	3
200 MVA	27	2
300 MVA	85	3
1000 MVA	15	3



Portable transformer at substation deployment exercise

Supply Readiness

- Restocking Mobile Storm Trailers following every event – four major, four minor, and one safety
- Summer Readiness items (storm kits, transformers, wire/cable) verified at stocking levels and key suppliers have ramped up their ‘stock on hand’ for summer related items

Substation Flood Mitigation Plans

- Temporary flood mitigation measures are in place at flood-prone substations
- Permanent flood mitigation in progress