



An Exelon Company

SF₆ – A Utility Perspective on Sustaining Low SF₆ Gas Emission Rate

**USEPA
SF₆ Emission
Reduction
Partnership for
Electric Power
Systems**

**2014 Workshop on
SF₆ Emission
Reduction Strategies**

**May 6TH & 7TH, 2014
Long Beach, CA**





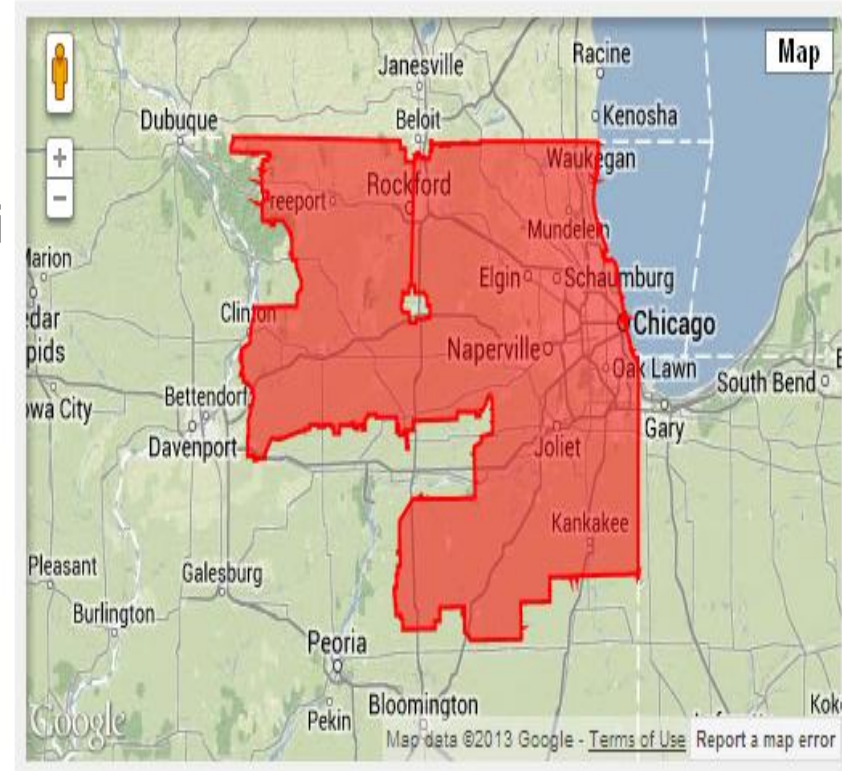
✓ Exelon Utilities

- **ComEd**
- **PECO**, Philadelphia Electric Co.
- **BGE**, Baltimore Gas & Electric Co.

ComEd by the Numbers

Electrical Distribution & Transmission

- ✓ More than 3.8 million customers
 - 70% of Illinois population
- ✓ More than 6,000 employees
- ✓ One of the largest landowners in Illinois
 - 11,000 square miles in territory
 - 30,000 acres of ROW land
- ✓ 531,000 Distribution Transformers
- ✓ 1.3 Million Distribution Poles
- ✓ 32,000 Underground Manholes
- ✓ 65,000 Distribution Circuit Miles
- ✓ 5,700 Transmission Circuit Miles
- ✓ 1,000 Substations
- ✓ 744 SF₆ Gas Equipment
- ✓ 120,000 lbs. of SF₆ Gas



Three Key Elements

- ✓ Road to Success
- ✓ How to Sustain Efforts
- ✓ Solutions to Challenges



Reduction Highlights

- ✓ ISO14001 certificated since 2008
- ✓ Transmission & Substation is a significant contributor in achieving the Exelon 2020 Environmental goal of reducing its greenhouse gas emissions.
- ✓ Leak Rate at 10% in 2005 to a current leak rate of:
 - 0.78% in 2014 with a target of 1%
- ✓ Annual targets and goals for SF₆ reductions are set as part our Environmental Management System plan.
- ✓ SF₆ reductions led the way of our Green House Gas reduction program.

First Phase of Leaker Replacements

765kV Bus-Tie Breaker Replaced: 2009 - 2012

Completed replacement of 12 first generation Gas Circuit Breakers

- 70% of the leaks, contained 20,450 lbs of SF₆
 - Equivalent to 488,755,000 lbs. of CO₂
- Emissions from 40,900 cars driven for one year



Before

Sustainability

ComEd T&S has enhanced its SF₆ management and leak reporting & repair by:

- ✓ PM Program: Maintenance Template & Leak Detection
- ✓ Leak Reporting
- ✓ SF₆ Handling Procedures & Training
- ✓ Employee Engagement
- ✓ Fill & Recovery Equipment
- ✓ Rigor on Cylinder Management

Strategy Enhancement of SF₆ Reduction

- ✓ Leak rates decreased each year

Next Effort - Second Generation GCB

345kV, Siemens 3AT2-362, Puffer Gas CB

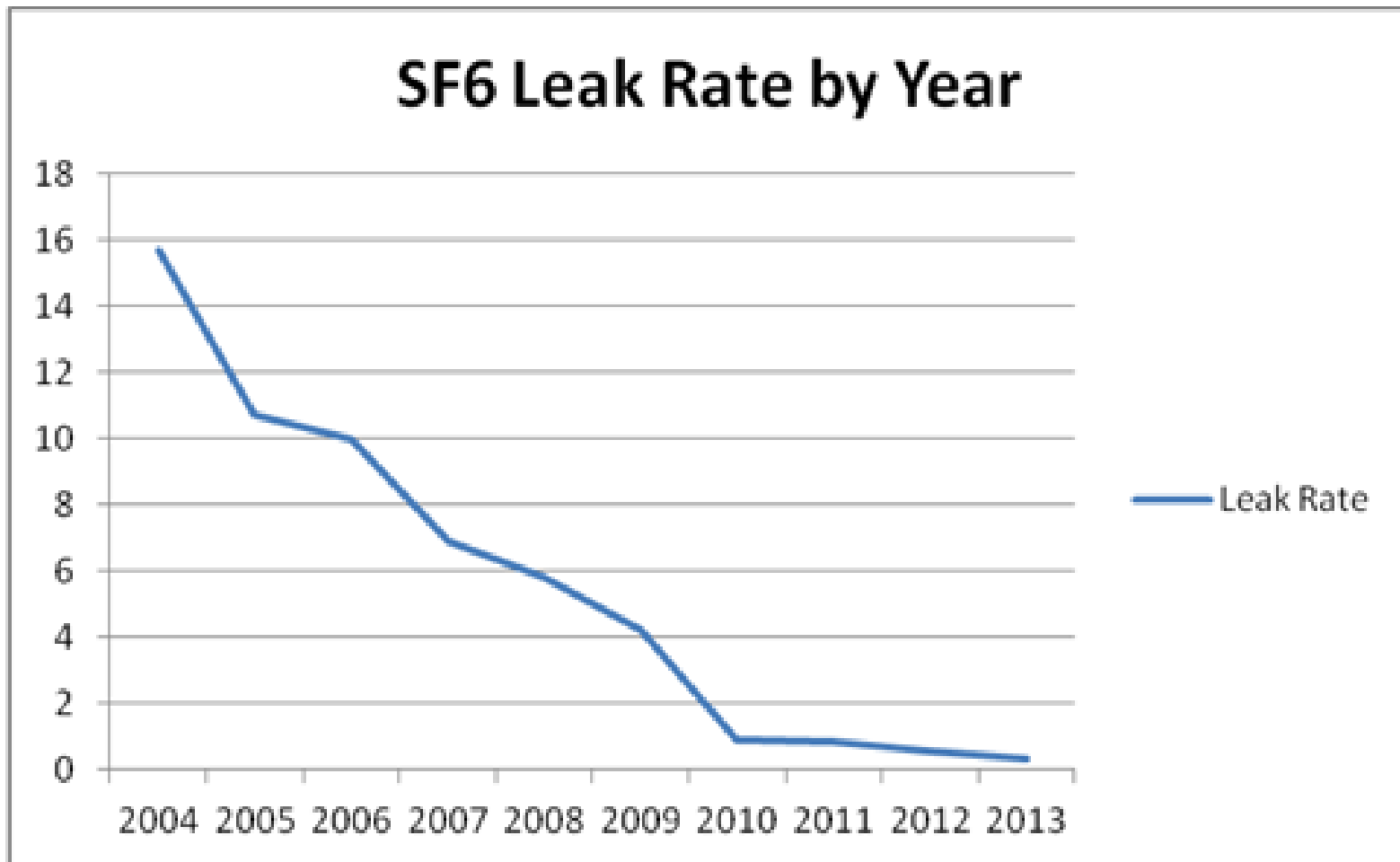


Challenges

- ✓ Cylinder Management
- ✓ Understanding Effects from Temperature Fluctuations
- ✓ Budget Constraints
- ✓ Equipment Health Index Prioritization
- ✓ Equipment Outage Timeline



Challenge: Leak Rate Target Expectation



Questions



We All Thank You!

