

## PECO Accelerates Storm Outage Response with Intergraph



With the implementation of InService and FRAMME, PECO was prepared when 440,000 homes lost power and had the lights back up and running for 95 percent of customers within 24 hours

### NEW OUTAGE MANAGEMENT SOLUTION PREDICTS, DISPATCHES, AND REPORTS FOR PECO

#### THE CHALLENGE:

The worst summer outage event in PECO history occurred on the evening of Tuesday, July 18, 2006. A storm rolled through southeastern Pennsylvania, knocking out power for 440,000 PECO customers. The most outages PECO customers ever suffered occurred as a result of an ice storm in January 1994, which cut power to 550,000 PECO customers.

Preceding the July 18 storm, PECO had met record demand for electricity during a head wave that saw 98-degree weather, surpassing the previous record 164.1 million-kilowatt hours. Following the storm, the company raced to restore power to residents who lost electricity after the hurricane-like mix of wind, rain, and lightning pummeled PECO's service area. The storms had wind gusts of up to 75 mph and produced more than 5,400 cloud-to-ground lightning bolts, resulting in 100 breaker events in just minutes. Downed trees, spans of fallen lines, broken power poles, blown transformers, and circuits were scattered throughout the region, with the largest numbers in Chester, Montgomery, and Bucks Counties.

Within a half-hour, PECO had received over 16,000 service calls. Fortunately, PECO field crews and hundreds of support personnel restored power to 95 percent of those affected within 24 hours. As PECO dispatched crews and teams from outside the area traveled to assist in the recovery, secondary storms hit the area. PECO relied on the InService Suite from Intergraph to facilitate response as the utility opened regional dispatch centers, identified and mapped compromised breakers, and cut them for repair.

#### THE SOLUTION:

PECO has employed Intergraph's FRAMME and InService, an integrated outage management system (OMS). One of the largest distribution companies in the United States, PECO began its competitive evaluation for an outage management system shortly after Hurricane Floyd hit its service territory in September 1999. This intense storm resulted in outage to over 440,000 PECO customers.

#### PROFILE:

**Name** – PECO

PECO is a unit of Exelon Energy Delivery, responsible for safe, reliable electric and natural gas distribution and customer service for residential business and institutional consumers in southeastern Pennsylvania.

**Web site** – [www.exeloncorp.com/ourcompanies/peco](http://www.exeloncorp.com/ourcompanies/peco)

**Size** – PECO is Pennsylvania's largest utility operating and maintaining a network with 550 power substations, 21,000 miles of distribution and transmission lines, 27 gas gate stations, and 6,000 miles of underground gas mains.

The company serves approximately 1.5 million electric customers in the City of Philadelphia as well as Bucks, Chester, Delaware, Montgomery, and York counties and 460,000 natural gas customers in the areas outside the city. About 90 percent of its customers are residential and the remaining 10 percent are small commercial and industrial customers.

#### KEY BENEFITS:

- Proven rapid recovery from widespread outages
- Offers dispatchers a map view of the electrical network and customer call locations integrated with comprehensive outage data, promoting more informed and intuitive dispatching for safe and effective outage restoration
- InService ease-of use allows effective engagement of non-operations personnel during severe and widespread outage restoration

#### PRODUCTS USED:

- InService
- FRAMME

PECO used Intergraph's FRAMME to create a GIS facilities model that provides electrical connectivity data to the InService OMS.

InService receives incoming calls from PECO's Customer Information System regarding power outages and automatically associates these calls with the landbase and electric facilities network model. An inference engine within InService groups these calls together and predicts the electrical device that is the probable cause of failure. The system provides dispatchers with a geographical view of the electric network and customer call locations, as well as comprehensive data views to manage calls and dispatch crews and resources for quick and safe restoration of power.

At 7:30 p.m., the entire display area was filled with breaker events, all of which occurred within a ten minute span. At one point during the storm, the tremendous volume of calls overwhelmed the system, and the recall queues filled up. The recall process even had to be dismantled temporarily to allow the dispatch teams to address the outages reported earlier.

Breaker events that couldn't be addressed and analyzed by dispatchers in the central office were paged out and assigned to the regional dispatch subcenters. Several breakers had suffered multiple events, and many of the circuits were in heavily-treed areas. Screeners reported that there were downed wires everywhere, and crews moved to respond to each event, cut it clear, and restore as many as possible as quickly as possible.

PECO worked around the clock. Several shifts saw between 70 and 90 dispatchers responding to customer reports, and over several days crews worked to restore power.

PECO supplemented its work force with 250 contracted crews, the first of which began working Wednesday morning. The 1,000 PECO employees and the 1,000 contracted employees working to restore power to the area were joined Thursday by crews from utilities as far away as Florida. On Thursday and Friday, two smaller storms impeded restoration.

Power was restored to 100,000 over the next four days. All of PECO's customers who lost power as a result of the storm on July 18th were restored by Sunday at midnight. Only those who suffered outages as a result of the subsequent storms remained without power. The crews remained in the field worked in rotating shifts until PECO restored power to all its customers. They worked through the weekend, and many contractors stayed on subsequently to assist in patrolling and repairs.

In four days of 24-hours-a-day focus on customers' emergency needs, PECO's call center handled 405,310 customer calls. The July 18 storm came out of nowhere, and took days for total response. Hurricane Isabel took the same response time, but PECO was prepared for it well in advance.

The system PECO had before implementing Intergraph would have required more personnel and effort to match the performance of InService.

"PECO remains focused on reliability and customer needs especially when our system is impacted by weather events, and InService gives us a jump on the trouble," said Jeanmarie Lee, Manager, IT - OMS at PECO. "When we experience outages of this magnitude, InService is most effective. This was an all-hands event, and we benefited from the outage prediction capabilities, crew dispatch and management tools, and automatic report generator included with the OMS. InService helps us manage these events from start to finish."

For more information, visit [www.intergraph.com](http://www.intergraph.com).

---

## ABOUT INTERGRAPH

Intergraph Corporation is the leading global provider of spatial information management (SIM) software. Security organizations, businesses and governments in more than 60 countries rely on the company's spatial technology and services to make better and faster operational decisions. Intergraph's customers organize vast amounts of complex data into understandable visual representations, creating intelligent maps, managing assets, building and operating better

plants and ships, and protecting critical infrastructure and millions of people around the world.

