Aid to Critical Infrastructure and Key Resources During a Disaster

Pete Grandgeorge
MidAmerican Energy Company
MidAmerican Energy Company

- Approximately 3,000 employees and 100 staffed facilities
- 1.4 million electric and natural gas customers in four Midwestern states
  - Iowa, Illinois, South Dakota, and Nebraska
- 7,094 MW net generating capacity
AN EVENTFUL FIVE YEARS
MIDAMERICAN ENERGY HAS RESPONDED TO 10 FEDERALLY-DECLARED DISASTERS AND EMERGENCY DECLARATIONS SINCE 2007
February-March 2007 Ice Storm

- 180,000 customers impacted by up to two inches of ice
- 1,500 poles replaced; 360 miles of line down
National Weather Service Radar Image
5:08 p.m. May 25, 2008, near New Hartford, Iowa
• Eight deaths were attributed to the tornado
• MidAmerican Energy loses a truck at an employee’s severely-damaged home
• 95% of electricity restored in 72 hours

Employees also were affected
New Hartford, June 2008
Three weeks after the EF5 tornado
Cedar Rapids, June 2008
Sandbagged to 18 inches of protection; flooded by 4 feet of water
Friday the 13th - Cedar Rapids

• 14% of the land area of the city was directly impacted by flooding
• 27 companies and 6,167 employees were flood-impacted
• Water usage and transportation were restricted
Cedar Rapids, June 2008
West bank of the Cedar River
Quad Cities, July 2008

• Derecho wind storms through Iowa and Illinois
• Nearly 100 mph straight-line winds in Illinois; extensive tree damage
• 185,000 customers without power and 800 poles replaced
Pieper lineman shows the ice accumulation in the Carroll area

Winter 2009-2010

- 50,000 customers impacted and 800 personnel worked during the Christmas holiday
- 100 miles of wire down and 80 poles replaced
Skunk River, Colfax, August 2010

Source: FEMA
Missouri River, Sioux City, June 2011
HESCO barriers near Sioux City, June 2011
Council Bluffs

30,000 people at risk behind 28.6 miles of levee
Council Bluffs
Temporary Facility
PROTECTING AND RECOVERING CRITICAL INFRASTRUCTURE
Be Prepared

• MidAmerican Energy’s goal is to be prepared for likely incidents
• We have a rigorous, internal lessons learned process
• We operate with significant state and federal regulations
Before Flooding Starts

• Evacuation priorities and process
• Utility disconnection
• Access to the areas

Sandbag pallets in Des Moines
Before Flooding Starts

• Planned utility protective measures
  – De-energizing electrical supply
  – Sealing gas mains
  – Protecting critical locations

HESCOs in Council Bluffs
During Flooding

- Resolving critical issues
- Regular information sharing during the flood
  - Protective measures
  - Rescue operations
  - Utility emergency access
  - Pump stations status
  - Other critical infrastructure status
Immediately After Flooding

• Community inspection process
• Resolve critical path issues
• Access to the area determines recovery
  – Missouri River-Roads and waterways were closed, so helicopters were used to move critical items and for inspections before the water receded
  – Missouri River-Iowa DOT and county road departments restored access in unbelievably short time frames
Mutual Aid - Hurricane Irene

- National mutual aid network for utilities was activated for Hurricane Irene
- Dispatched 140 personnel to support electrical restoration in New Jersey during the Missouri River flooding
- Drew personnel from non-flooded areas to maintain sufficient contingency staffing
Maintaining Safety

• Energy delivery requires consistent safety focus

• Central Iowa flooding – crews pumping an underground system had assigned police escorts due to traffic dangers

• Missouri River flooding – several utility vehicles struck by other cars and one utility worker had damaged line torn from his hand

• Missouri River flooding – non-company worker struck by earthmoving equipment at a South Dakota emergency levee project
Severe Weather

- When possible, we begin to prepare 36-48 hours ahead of the expected arrival of severe weather
- Have personnel available and rested
- Have key equipment staged and readied
- Maximize system stability
Rural and Urban Differences

• Rural restoration challenges
  – Low number of customers per mile
  – Generator safety
  – Travel challenges in severe weather
  – Housing for restoration crews

• Urban restoration challenges
  – Rear lot aerial lines and underground services
  – Other utilities and locates
  – Housing for restoration crews
Where We May Ask for Assistance

• Accessing areas for acute emergencies
  – Snowmobiles and plows in winter
  – Boats in flooding
• Traffic control for congested areas
• Movement of special equipment or materials, including across state lines
• Temporary staging and logistics areas
• Security for vehicles and supplies
Security Threats

• Call MidAmerican Energy to report suspicious incidents
• Copper theft continues to create significant safety threats to our staff and the criminals
• Coordination with fusion centers and the Law Enforcement Intelligence Network
  – Information about multiple suspicious events could be the key to preventing an incident
Health Threats

• Extensive pandemic planning prior to the 2009 pandemic
• Influenza vaccine clinics annually plus a series of planned responses if operations are impaired
• Flood-related vaccinations
• Infectious Disease – A worker at a restaurant near a MidAmerican Energy facility exposed thousands of people to an infectious disease, including utility workers; resulted a communitywide vaccination effort
SUCCESSES
2008 Siouxland Flood Exercise
Woodbury County EOC
Earthen Berms and HESCO Barriers

HESCO Training Session, March 2009
Council Bluffs - 1.5 feet of storm water on HESCO Barriers
Making NIMS Work

• National Incident Management System training for managers and supervisors
• Implemented organizational chart and ICS 205-like status reports
• Initially daily response periods, then transitioned to several days, then to a week
• Most incident concepts already existing, but the “planning P” cycle was the most difficult
Improving Predictions

• Improving interface with various federal agencies that provide predictive information

• Weather and hydrologic predictions continue to improve

Source: Fremont County