How to Prepare for Disasters and Rebuild Stronger After Them

Joseph Eaves
Director, Government Relations

The Association of Electrical Equipment and Medical Imaging Manufacturers
Electrification and Resilience in Ports

- Electrification can be essential to time and energy efficiencies for port operations
  - Cranes
  - Storage and Refrigeration
  - Service Vehicles (trucks and boats)
  - Energy Storage
  - Ship to grid
  - Upgrades to Port Infrastructure
How to Keep Electrons Flowing

• Smart Grid Solutions
• Microgrids
• Energy Storage
• Distributed/Backup Generation
• Water-Resistant Wiring and Components
• Relocating Equipment
• Disaster Recovery Planning
Smart Grid Solutions

• Technologies
  ▪ Smart Meters
  ▪ Advanced Sensors
  ▪ Reclosers/Circuit Breakers

• Functionality
  ▪ Fault Location, Isolation, and Service Restoration (FLISR)
  ▪ Demand Response
Microgrids

- Disconnect from the grid during a disaster to keep power flowing to critical loads
Energy Storage

• Backup power
• Reduce strain on grid during outages and startup
• Black start
Distributed/Backup Generation

• On-site generators can ensure reliable power supply during emergencies if they are properly sited and maintained.

• During Sandy, some diesel pumps flooded, leaving generators without fuel.
Water-Resistant Wiring and Components

• The New Jersey Seaside Park boardwalk fire was caused by saltwater-damaged wire, a year after Superstorm Sandy
Relocating Equipment

- Flooded basements can prevent generators and fuel pumps from functioning and can short-circuit other electrical equipment
Disaster Recovery Planning

- Restore critical services first
- Inspect electrical systems before re-energizing
- Conduct a pre-crisis risk mitigation audit
- Train facility managers
- Know where you can get replacement equipment and certified technicians
- Plan for the failure of communication systems
- Install surge protection, arc-fault protection, and ground-fault protection to reduce risk of equipment damage, fire, and electrocution
- Upgrade equipment when replacing it
Federal Solutions

• Diesel Emissions Reduction Act (DERA)
  • Funding can be used for electrification projects

• Disaster Recovery Reform Act (DRRA)
  • Pre-mitigation funding program, work with states to make upgrades to protect against future storm damage
For More Information

Download the NEMA storm reconstruction guide:

www.nema.org/storm-reconstruction

Joseph Eaves
Director, Government Relations
joseph.eaves@nema.org
703.841.3221