Flood evaluation and recovery plan

Disaster Prep

In this installment of Disaster Prep, we focus on flood evaluation and recovery planning to protect your electrical equipment and worksite in the event of a flood.

Incidents due to floodwaters can be especially destructive, particularly to electrical equipment. Water is destructive and the need to protect all equipment/machinery from a flood is critical — electrical equipment impacted by floodwaters may be damaged by chemicals, petroleum products and sea water that can leave corrosive residue. These contaminants can cause shock, fires or electrocution hazards upon reenergizing immediately — or develop into a hazard in the future.

Don't assume water-damaged electrical equipment can be simply dried, cleaned and reused. Instead, follow these tips to secure and recover your electrical equipment in the event of a flood.

Tips for post-flood evaluation and recovery

De-energize electrical equipment: As soon as safely possible after a flood, all sources of electricity must be disconnected and de-energized prior to reentering the worksite. (Have a risk management plan in place that includes steps for safely isolating and de-energizing electrical systems and equipment prior to an incident.) Ideally, electricity should have been safely de-energized before floodwaters reached your site, as part of the flood risk management plan.

We've created this Disaster Prep series to help you prepare for, protect against and respond to the effects of a natural disaster, such as a hurricane, flood or tornado. For more information, please review the resources in our Disaster Response Center or contact your local WTW client relationship director or risk control consultant.

See our other reports in this series:

Disaster Prep: Flood evaluation and recovery plan

Disaster Prep: Post-flood safety and security

Disaster Prep: Tornado preparedness and safety

Disaster Prep: Business continuity management

Note: Protective devices designed to prevent damage to electrical equipment or the people handling them can fail to provide protection after contact with or damage due to water. Steps to prevent reenergization after a flood include instructing utility companies to shut off power to the site. Utilities will also need formal authorization to restore service.

Communicate with your local electric utility provider as they are an important resource and should be relied upon to coordinate a safe renergization.

Consult qualified electrical personnel: Only qualified electrical personnel should isolate and de-energize supply sources, and perform post-flood equipment inspections and assessments. They should also be the only personnel to work on electrical equipment for removal, repair, installation, maintenance and testing. Consult equipment manufacturers to determine which electrical equipment can be restored and how, if at all, after being flooded. Emergency or temporary power for lighting during recovery should remain completely isolated from the site's normal power distribution system. Hazard assessments should be made to ensure that safety and compliance requirements are met.

Repair/Replace and test equipment: While electrical equipment damaged from fresh water may be restorable, equipment damaged by contaminated water, salt water, sewage or chemicals is likely to require replacement.

Other items likely requiring replacement will be:

- Molded case circuit breakers and electrical distribution equipment operating at 600 volts or less
- All fuses that were submerged
- General use dry-type transformers
- Cables and wiring

While some motors may be salvageable, complete disassembly should be required to replace oil and bearings contaminated with flood waters. Equipment refurbishment will likely require the services of a qualified electrical shop or the original manufacturer. Acceptance testing of equipment should be conducted, including functional testing of safety and protective devices.

Implement Business Continuity Plans (BCPs): A timely and incident-free recovery and restart of shuttered sites following a flood will depend on having a tested flood recovery plan in place. Many sites have a pre-flood plan in place that includes shutting down in advance of a severe storm threat, such as a hurricane. Often missing from BCPs are the post-flood steps necessary to address recovery of a flood-damaged electrical distribution system. Many components will require replacement. Those that can be refurbished are likely to impact staffing capacity in the parts and services supply chain as well as shop capacity due to the size of the event. BCPs that are annually reviewed and updated can help mitigate these threats to business continuity.

Consider storing spare parts and materials in areas not exposed to flood damage when possible so they are available to support post flood recovery.

For additional information on how to minimize damage from a flooded worksite, contact your Willis Towers Watson client relationship manager or:

The following resources also contain valuable information to help you protect and recover your equipment:

- Original equipment manufacturer safety instructions (keep these in a safe, readily accessible place)
- The National Electrical Manufacturers Association (NEMA) has some useful documents, including:
  - Evaluating Water-Damaged Electrical Equipment (uses tables to show which equipment likely needs replacement and which might be reconditioned per the manufacturers' guidance)
  - Storm Recovery Resources

Contact

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