

INDECK

answers

When The Storm Strikes, Will You Be Ready?

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*Is your Plant's Natural Disaster Preparedness Plan
Leaving your Site Vulnerable?*

Throughout the life of your plant's boiler, there will inevitably be a need for temporary steam. Out of the many reasons a plant needs a rental boiler, natural disasters are undoubtedly one of the more stressful causes. With any unplanned outage or power deficit, time lost is money lost. In the wake of a natural disaster, it is critical to restore your plant's operating capacity as quickly as possible. Although every Plant Operation Manager hopes their facility is out of the path of Mother Nature, an optimistic outlook is insufficient in protecting your facility against extreme weather and other geologic events.

With the assistance of Indeck's Emergency Rental Services, facilities equipped with a comprehensive and well-practiced Natural Disaster Preparedness Plan are able to efficiently and safely restore their plant's power capacity after a natural disaster occurs.

Incorporating the guidelines below will help ensure your plant's Natural Disaster Preparedness Plan is comprehensive, so that you can quickly and safely bring your plant on-line after Mother Nature strikes.

KNOW YOUR EMERGENCY PLANS

The most effective time to prepare for a natural disaster is before one occurs. When it comes to reducing plant downtime, having staff well-versed in your facility's Natural Disaster Preparedness Plan is just as critical as the plan itself. Emotions can run high in times of crisis, and keeping a checklist of items that need to be addressed is highly effective in ensuring there are no oversights in your facility's pre and post-emergency event procedures.

A Natural Disaster Preparedness Plan with a limited scope often overlooks smaller tasks like securing objects to minimize debris from high winds, and unplugging all non-essential electronic equipment to reduce the potential for power surges within a plant's contingency uninterrupted power supply (UPS).

For critical equipment, it does not hurt to double check if

protection procedures have been properly implemented. Where applicable, the enclosure around your plant's boiler(s) should be reinforced to prevent any damage from debris, downed power lines, ash, extreme temperatures, etc. With severe weather that brings high winds and flooding, the best practice is to house your boiler in a place that is less exposed to flooding or standing water.

A natural disaster can be anything from a hurricane, earthquake, blizzard, or even a wildfire. Different natural disasters require different procedures to ensure your plant is properly protected. Even though Emergency Preparedness Plans may look different from region to region, all exhaustive Emergency Preparedness Plans will include steps to safely and effectively manage your plant's operations before, during, and after an emergency event.

TALK WITH YOUR STEAM POWER PROVIDER EARLY

The underlying goal of a facility's natural disaster plan is to bring the facility online as quickly as possible. If your plant is in a region highly susceptible to seasonal events like hurricanes or wildfires, your Natural Disaster Preparedness Plan should include conversations with your steam power provider to build an emergency rental package before storm season begins.

If you purchased your equipment from a single-source steam/hot water provider like Indeck, they will have a detailed history of your plant's equipment. From this information, they will be able to build out a flexible emergency rental package that is easily amended to match the exact steam/hot water deficit caused by the storm.

Open communication is key in delivering the correct equipment needed. During severe weather seasons, both you and your provider should keep an eye on the storm's progress. Most emergency rental boiler providers can deliver trailer-mounted boilers (superheat or saturated steam) in a few days. Effective Emergency Preparedness Plans have protocol in place that allow for quick identification and communication of a plant's temporary power requirements to their temporary steam provider.

Additionally, partnering with a single-source steam and hot water provider allows for integrated emergency service scheduling with their in-house transportation and rental departments. (cont'd)

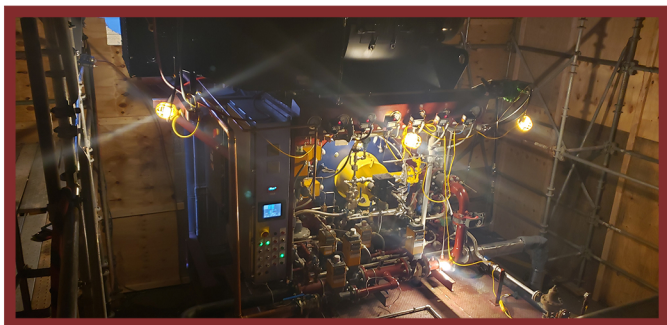
With designated service technicians for each of our clients' accounts, Indeck can seamlessly adjust service start times based around our clients' schedules; if the storm forecast changes, and equipment delivery needs to be pushed forward or backwards, our Emergency Service Department can accommodate these changes without creating any scheduling conflicts.



TRAILER-MOUNTED WATERTUBE BOILERS

PREPARE YOUR SITE FOR TEMPORARY STEAM

Prior to a temporary boiler arriving on site, certain steps need to be taken to ensure the plant can safely host the temporary boiler. Trailer-mounted and skid-mounted boilers need to sit on a clear, level area that has not been structurally compromised from flooding, ash, debris, etc. The designated on-site location must also be structured to meet safety and ventilation requirements of the region/country.



INSIDE A TEMPORARY BOILER ENCLOSURE

Comprehensive Natural Disaster Preparedness Plans will typically have a predesignated area for emergency power equipment. This area is usually the on-site location least susceptible to structural damage, weathering/erosion, standing water, etc. Additionally, if high winds have created debris or ash, this location is easily cleared out in time for equipment arrival.

As a single-source steam power provider, Indeck provides its clients with a contingency planning quotation that includes a forecast of installation and utility requirements, which allows our clients to proactively prepare their site. With this resource forecast, Indeck's clients can account for the required tie-ins, so the emergency boiler installation and start-up process runs as quickly and smoothly as possible.

ESTABLISH A TIMELINE FOR RECOVERY

Depending on the nature of the natural disaster, your facility may be performing on-site generation anywhere from a few days to upwards of a month. In the wake of a natural disaster, geographic areas are still highly susceptible to the elements –leaving the region's buildings and infrastructure exposed when they are most vulnerable.

Earthquakes bring with them the potential for aftershocks; fires can cause ash to linger in the air for weeks, and after a hurricane, severe storms and flooding are almost an inevitability. During this time, it is critical that regular audits are performed to ensure your temporary boiler is operating to your facility's needs, and your site's permanent boiler(s) recovery is on track.

Be sure to monitor weather forecasts and make any adjustments necessary to your plant's recovery timeline.

Keep in mind, during this time, your facility may be short-handed. Employees who work at your facility almost certainly were personally impacted by the storm. Consequently, they may be unable to return to work immediately. A plant's post-disaster recovery timeline will account for a reduced labor force, as well as post-event vulnerabilities. This, in turn, will allow a plant's Operational Manager to set realistic expectations as to when all permanent equipment will be fully operational.

BEFORE STARTING YOUR BOILER BACK UP

Like the start-up of your emergency temporary equipment, ensuring your permanent boiler(s) can be turned on safely is key. If your steam power equipment is housed inside a thermal plant, make sure the foundation nor any of the boiler settings have been compromised from water or debris.

If there is risk that your boiler was exposed or submerged in water, the boiler casing should be removed, cleaned and thoroughly dried. If, during casing removal, compromised insulation is found, it should be replaced. A thorough check and cleaning of your boiler's internal components for water damage or sediment/dust/ash should be conducted as well. All fixed components should be confirmed to be level.

Boiler components like pressure valves, temperature gauges, water shut-off valves, etc. should be cleaned, repaired and dried where applicable. If any of your boiler's parts need to be replaced, contact a steam power provider like Indeck for replacement parts. If you purchased your boiler from a single-source provider, boiler part replacement may be covered under warranty through their in-house boiler parts store.

If there is reason to believe any digital or electrical components of your control system were impacted by water damage, consult with the manufacture to run a program reset/diagnostic report prior to operating. Indeck's service technicians are happy to assist with this process for all previously purchased Indeck equipment.

CONCLUSION

When a natural disaster strikes, it comes at a great expense –financially, physically and emotionally. Having a Natural Disaster Preparedness Plan is key in reducing time lost and minimizing physical damage when an unexpected outage occurs. An easy-to-follow, well-practiced contingency plan addressing how to safely prepare your plant is critical to quickly and safely bring your plant's equipment back on-line.

Partnering with a full-service steam and hot water provider to create a comprehensive emergency temporary steam package for your facility can bring peace of mind to plant operators and added value to a plant's Emergency Preparedness Plan.

With Indeck's comprehensive in-house services that include emergency boiler rentals, expedited transportation and emergency start-up services, plant operators can rest easy knowing the support Indeck brings not only minimizes plant-downtime even further, but brings their facility and their community one step closer to being whole in the wake of a natural disaster.



**INDECK SERVICE TECHNICIAN PERFORMING
SYSTEM DIAGNOSTICS**

Aaron Naylor is the Service Manager for Indeck Power Equipment Company. Aaron began his 20+ year career in the steam power industry as a U.S. Navy Boiler Technician where he operated and maintained fleet propulsion and waste-heat boilers. Following his service, he obtained his Power Plant Operating Engineer First Class license, and spent time inspecting co-generation plants for various hospitals in the Chicagoland area. Aaron joined the Indeck team in 2013, and currently manages the Service Department for Indeck Power Equipment Company.