

Emergency
Response

Planned
Projects

HVAC & Power

Contingency Planning



Rental Systems

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What would be lost if a building's heating, ventilation, air-conditioning (HVAC) or power system were to break down for a lengthy period? Tenants, revenue, or even life!

HVAC and electrical power systems are such an integral part of our everyday life that even temporary shutdowns are unacceptable and often can have devastating results. While shutdowns may be most critical for computer rooms, laboratories or healthcare facilities, no tenant will be happy with the loss of heating, air conditioning or power. Liability issues make the thought of a long-term system breakdown even more frightening and real.

To be ready for any situation, building owners and managers should consider adding a contingency plan for HVAC failures to their emergency response programs. By following a simple process, the building owner or manager can develop an emergency response plan utilizing Carrier Rental Systems' rental solutions.



Developing an Emergency Response Plan

The first step in developing an emergency response plan is to identify the facility's critical equipment. Critical equipment is defined as any system or equipment that is considered a revenue producer or that has lives depending on it. Begin the analysis by assuming the worst-case scenario – the HVAC system breaks down on the hottest day of the year.

Think about each equipment component of the HVAC or power equipment and answer the questions, "What would happen if this component shut down (for a minute, an hour, a day, a week)? Is there a back-up system? What if it failed? Can the system or building function without it?"

The next step is to create a list of portable equipment required to replace the functions of the equipment identified. In compiling the list, consider the size of the space and configuration of existing equipment. Other building-specific information, such as water pressure and type of structure, should be factored into the equation. In addition to equipment, a list of other support services such as rigging, forklifts and cranes, mechanical contractors, electricians, pipe fitters and fuel services also should be identified before an emergency situation arises. Other key components include a detailed equipment layout to help facilitate quick installation and detailed directions for trucking companies.

A crucial action in developing an emergency response plan is for the building owner or manager to provide the piping and duct connections and electrical disconnects needed for temporary installation. Making these changes before an emergency (i.e. adding access valves in large pipes) can save valuable time and money.

To further help the quick response in a crisis situation, a list of in-house emergency contacts and phone numbers should be developed. In addition, create a plan to communicate with the building's occupants. Finally, all contract terms and conditions for renting emergency equipment should be agreed upon and signed before the need for services arises. Preparing now will save valuable time and reduce the expense and aggravation of an emergency situation.



Estimating the “Down Time”

After the critical and temporary equipment have been identified, the next step is to determine down time parameters. In the case of a system failure, building owners and managers need to consider how long it will take to repair or replace a piece of equipment vs. how long it will take for temporary equipment to be up and running. Having this knowledge in advance can save valuable decision-making time. If equipment can be repaired quickly, a temporary system may not be necessary. If repairs will take days or even weeks, portable equipment and services will be needed.

Being Prepared

Developing an emergency response plan can help save time and money should a system failure occur. A plan utilizing temporary equipment will help facilitate the quick and seamless response of all parties involved and enable building owners and managers to make decisions quickly in a potentially difficult situation.

Having a plan already in place also can help with any liability issues resulting from injury, occupant health, or equipment/computer malfunction. The emergency response plan also will document the actions taken to prevent the consequences of an HVAC breakdown. Building owners have a responsibility to their tenants and clients to prepare for the worst and have an emergency response plan in place.

Case Study

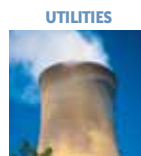
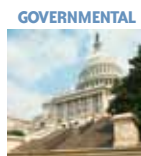
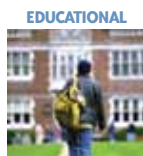
A 42-story office building experienced a condenser tube failure on one of their 1,200 ton chillers. Carrier Rental Systems was called to investigate the feasibility of setting up a temporary chiller. Since the outside temperature was getting cooler, a temporary chiller was not needed.

Working with the building management, Carrier Rental Systems designed a contingency plan should a failure occur during the heat of the summer. Due to the height of the building, the chilled water piping system had to be designed for 300 PSI water pressure. Carrier Rental Systems suggested the installation of access valves and piping to allow for a rapid installation of a temporary system.

The following spring the same chiller suffered a motor failure. The lead time to repair the motor was 6-8 weeks. The outside air temperature was getting warmer and a portable chilled water system was requested. It was a Thursday afternoon and the building management wanted additional chilled water capacity by the start of business the next Monday morning.

Based on the previous contingency plan, Carrier Rental Systems designed a portable system that would allow for the initial installation of 500 tons of cooling. The key to the system was a high pressure plate & frame heat exchanger that could produce 1,000 tons of cooling. The 300 PSI building water pressure was circulated through one side of the exchanger and a modular 500 ton chiller had to be added a few weeks later due to hot weather and remained in operation until the failed chiller was repaired.

Carrier Rental Systems has you covered. Any project. Any size. Anywhere.



...AND MORE

Helpful steps to follow when developing a contingency plan.

Identify critical requirements

- > Building-specific information (*pressures, electrical loads, type of structure*)
- > Identify support services (*mechanical contractors, electricians, pipe fitters, fuel services*)
- > Identify the required space for temporary equipment
- > Develop detailed directions and instructions for deliveries
- > Develop a list of in-house emergency contacts
- > Create a plan to communicate with the building's occupants
- > Install the piping and duct connections and electrical disconnects needed for temporary equipment installation
- > Have agreed upon contract terms and conditions prior to the need for services

Rental Solutions Include:

- Water-Cooler Chillers
- Air-Cooled Chillers
- Air Conditioners
- Air Handlers
- Cooling Towers
- Spot Coolers
- Dehumidifiers
- Heaters
- Boilers
- Generators



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CONTINGENCY PLAN WORKSHEET

The following worksheet was developed to help you create a contingency plan. By using the "steps to follow" section and other tips throughout this guide, you will save valuable decision-making time in a planned or emergency shutdown.

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24-Hour Hot Line
800-586-8336

CHILLED WATER DATA	CONDENSER WATER DATA									
	FLOW	W/C	SUPPLY	RETURN	W/C	WATER	FLOW	W/C	WATER	W/C
HOT WATER DATA										
STEAM DATA										
WATER										
HYDRULIC										
AIR DATA & HEATING										
SPECIAL CONDITIONS										
POWER										
TEMPERARY EQUIPMENT										

Do you need help developing a contingency plan? Contact Carrier Rental Systems today.