

THE HVAC FACILITY CONNECTION

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FOR COMFORT AND EFFICIENCY IN YOUR BUILDING

PREPARING FOR CATASTROPHIC FAILURE Cooling Contingency Planning for Your Facility



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Being prepared for the unexpected is good management practice. In addition to the daily operational management plans in place it is just as important to have contingency plans that are ready to help manage the consequences of such operational interruptions or system failures as a power outage, fire, computer failure or chemical spill.

Advance planning in the case of a possible catastrophic building system failure is particularly critical. A failure of the heating, ventilation and air conditioning system quite literally could represent a life and death situation. But a well-crafted up-to-date cooling contingency plan can reduce such risks, add to or improve component redundancy, and prepare the facility for the rapid deployment of temporary equipment needed to sustain critical operations in the event of an emergency and to recover from a disaster.

The benefits of such a plan can include protecting or minimizing operational emergencies, promoting the health and safety, and

otherwise managing or reducing the economic, legal, and other long-term implications that could spawn from the negative results of a major HVAC system failure.

Crafting the Plan

To begin crafting a cooling contingency plan, first start by addressing the possible consequences of a major HVAC outage and ask the following questions: How dependent are critical and ongoing operations, equipment, and advanced technology, facilities, information systems, and other resources on comfort cooling or process chilled water? What effect would there be on such operations if the cooling system failed or needed to be shut down for unplanned service? What would be the cost of not having cooling for an hour, a day, or a week? Qualify and quantify the impact and related costs.

In addition, determine which individuals understand the consequences of a failure. Who thoroughly comprehends the interplay and dependence between the facility's critical operations and the environmental system? Who

has in-depth expertise in and experience with the details of the facility's HVAC systems—and the available alternatives? The answers to these questions will help create the outline of what is to be included in the plan and identify the players who need to be involved.

The critical success factors in the development of a cooling contingency plan are leadership buy-in and support; understanding "critical needs" versus current needs; preparing for a "worst case" scenario; developing, filing, and practicing a formal plan; and keeping the plan current.

Key Components

Realizing the need for a plan, like any initiative, is the first critical step of the process. The second is assembly of the team that will develop the plan. A successful team will have covered all the bases in terms of knowledge and experience—leveraging

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Trane Company Equipment can be used to support Contingency Plans. In the picture to the right, Trane Chillers and Pumps are ready to ship. Below is a Trane Air Handling Unit with heating, cooling and filtration.



Preparing for Catastrophic Failure continued

expertise from both on-staff personnel and outside experts, such as insurance providers, system and control manufacturers, and consulting engineers.

Key components of the plan should include provisions to:

- Document the current HVAC equipment in use, ranging from critical HVAC system information to component details.
- Identify potential sources of failure, the probability of failure, and document the cooling required to maintain critical areas.
- Match specific equipment and all required connection components needed to support critical areas. Determine required response time frame and budget.
- Determine the appropriate location for the temporary equipment and the logistics required to set it in place, as

well as electrical and water connection points. Additionally, assignments will need to be made for what roles and responsibilities each entity will undertake.

- Determine how to adopt the existing system and controls to better prepare the facility for the use of a temporary solution.
- File, review, train staff and update the response plan and system specifics on a regular basis.
- Conduct periodic cooling contingency drills.

While examining the HVAC system during contingency-plan development, the team may find areas to improve the system's operation, reliability, or energy efficiency.

For instance, if the critical components are aged or have become unreliable,

it may be prudent to overhaul or repair them. There also may be substantial benefit in upgrading or replacing existing components with reliable, more energy-efficient solutions. These opportunities are worth investigating as they could provide significant and immediate gains in performance, while providing a strong return on investment.

For hospitals and other 24-hour facilities, the successful implementation of a cooling contingency plan immediately and seamlessly upon demand quite simply is "mission critical."

In terms of risk management, the advance planning and preparedness involved in developing and providing ongoing support for a cooling contingency plan clearly is a smart investment against the very real risks that an interruption could bring to human life and well-being. A cooling contingency plan is a strategic investment well made. 🏢

Introduction to Performance Contracting

Energy Savings Performance Contracting enables building owners to use future energy savings to pay for up-front costs of energy-saving projects, eliminating the need to dip into capital budgets.

An Energy Service Company (ESCO) develops and installs projects designed to modernize infrastructure and improve the energy efficiency and reduce maintenance and operating costs for facilities.

ESCOs serve as developers for a wide range of tasks and assume the technical and performance risk associated with projects. In a typical project they will develop, design and install energy efficiency projects. They will commission and maintain the performance of the equipment and systems installed. The company will measure, monitor and verify the project's energy and related cost avoidance or savings. They also assume the project risk that the project will save the amount of energy guaranteed.

There are numerous practical benefits of Performance Contracting (PC). No up-front funding is a major benefit

to most organizations that seek a Performance Contract. The job allows for modernization and replacement of outdated equipment. It helps define and acquire O&M Services. PC gives owners solutions to problems with guaranteed performance, eliminating technical and financial risks. The organization can use future energy and operational cost avoidance now while they prepare for commodity purchases.

If you are an organization looking for cost reductions in energy, operations, maintenance and energy procurement, then a performance contract may be for you. It would be a one stop solution that would address energy use reduction, project financing and environmental solutions.

Using an ESCO with expertise can benefit you with a professional survey, analysis, design and modern technology applications. They provide professional project management, installation, O&M Development and Measuring and Verification. They will prepare for energy procurement, secure the utility rebates and ensure you meet the state legislation. ■

Performance Contracting in North Carolina

Performance Contracting is not a new idea in North Carolina. Below are some of the Performance Contracting jobs that have been completed or are currently in process:

- NC Museum of Art
- Wayne County Schools
- University of North Carolina at Wilmington
- Durham Public Schools
- University of North Carolina at Greensboro
- City of Greensboro
- Charlotte Mecklenburg Schools
- Greensboro Coliseum

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