



## Maximized Cooling Efficiency Results in Greater Capacity and Cost Savings at Energy Company after KoldWorks Services

### Key Highlights

#### Customer:

Large electric company

#### Data Center Details:

3,200 ft<sup>2</sup> primary center; 2,100 ft<sup>2</sup> backup center

#### Needs:

The staff found it a constant battle to maintain cooling efficiency and was looking at the possibility of adding another data center.

#### Upsite Solution:

KoldCheck services

#### Results:

- Both data centers brought temperatures down from over 90° F at times, to the high 60s and low 70s.
- Underfloor static pressure increased from 0.02 to 0.045 inches in the backup center, and 0.015 to 0.030 inches in the main center.
- Average perforated tile/grate airflow grew from 350 to 500 CFM in the secondary site and from 350 to 600 CFM in the primary center.
- At the backup site, bypass airflow decreased from 31 to 20 percent, while at the main site, it decreased from 54 to 30 percent.
- The company maximizes the space in its two existing data centers, without having to add another data center or square footage. It also reduced its power consumption and costs.



505.798.0200  
upsite.com

**“With more even temperatures and airflow throughout the data centers, our cooling units don’t have to work as hard. We’re measuring lower power consumption, which translates to cost savings. At this time, we can continue without having to add another data center.”**

— Facilities Coordinator

## Customer

A large energy company entrusted with keeping electric power flowing to approximately 20 million customers.

## Data Center Needs

At the company, data center responsibilities are divided between a primary facility and a backup site. Mission-critical functions, such as power grid monitoring and utility market trading hinge on data center availability. Any outages could affect the delivery of power to customers, as well as take a large financial toll.

## Solution

The company engaged KoldWorks services from Upsite Technologies, Inc.™ to assess the cooling efficiency of both data centers. A consultant from Upsite performed a KoldCheck onsite evaluation, which included gathering extensive temperature, airflow, and cooling performance data.

As expected, Upsite found the backup center to be at the limit of its redundant cooling capacity. Airflow from one of the cooling units failed to reach a far corner of the room. As a result, air temperatures ranged from 63 to 83° F, while underfloor static pressure averaged 0.02 inches of water. At the primary center, a number of cooling units didn’t perform to specifications, leading to temperatures anywhere from 60 to 91° F.

Based on the findings and recommendations of Upsite, the data center staff took steps to improve cooling efficiency. They upgraded cooling units, altered the configuration of the data center, rearranged perforated tiles and grates to meet the power dissipation in individual cabinets, and implemented KoldLok Grommets to seal tile cut-outs. In the process, the staff gained valuable knowledge from Upsite about how to maintain its data centers.

With remediation complete, both data centers show significant signs of improved efficiency. In the backup

center, input air temperatures now remain under 74° F. With the raised floor sealed, the underfloor static pressure increased to 0.045 inches of water. In addition, average perforated tile/grate airflow grew from 350 to 500 CFM, while bypass airflow decreased from 31 to 20 percent.

In the primary center, air temperatures remain under 73° F. Plus, underfloor static pressure increased from 0.015 to 0.030 inches of water. Perforated tile/grate airflow even topped the backup center, increasing from 350 CFM to 600 CFM. Finally, bypass airflow decreased from 54 to 30 percent.

With these dramatic improvements, the company has been able to maximize the space in its two existing data centers, without having to add another data center or square footage. Plus, the power company can proudly say that it runs as efficiently as possible.

“With more even temperatures and airflow throughout the data centers, our cooling units don’t have to work as hard,” said the facilities coordinator. “We’re measuring lower power consumption, which translates to cost savings. At this time, we can continue without having to add another data center.”