

Raychem Freeze Protection and Leak Detection Cooling Solutions for Elite North American Data Center Locations

Essential Performance for Data Centers



PROJECT DETAILS

**Location:**

Tier 4 and 5 Data Centers in North America

**Applications:**

- Leak Detection - Data Hall/Server Cabinet
- Freeze Protection - Chiller Piping

**Contract Scope:**

- Dedicated Project Manager & System Engineering
- Product Supply
- System Start-up and Commissioning

**Technology:**

- Raychem XL-Trace Pipe Freeze Prevention
- TraceTek Liquid Leak Detection

**Date:**

Project Start Date 2023
Completion Date 2024

KEY CHALLENGES

For areas susceptible to winter freeze, data centers have used freeze protection systems to protect their water, fire protection, and grease waste pipes. Now, the rise of AI and more powerful chips presents new water challenges unrelated to freezing. AI and powerful chip functionality produce higher workloads, power consumption, and heat generation in data centers, increasing the need for liquid cooling of chips.

An industry-leading data center owner/operator is running chill water supply piping throughout the data hall and recognizes the increased risk and consequences of coolant leaks. They need a reliable leak detection technology and solutions that quickly detect and locate leaks. The system must initiate immediate action to minimize damage and keep data center essential performance and operations running smoothly without disruption in the event of a leak.

SOLUTION

For many years, we've provided our data center owner/operator Raychem XL-Trace freeze protection solutions on other data centers, successfully keeping their CHWS/R systems operating year-round. So, this customer was familiar with our quality and reliability.

Now, with this new elite data center project and new leak detection requirements, the data center's MEP Engineering team, with input from Raychem design experts, designed a combined freeze protection and leak detection system. The freeze protection solution utilized Raychem XL-Trace pipe freeze protection cables and components with an ACS-30 power distribution and control system. The leak detection solution used Raychem TraceTek liquid coolant leak detection cables and point sensors controlled by a TT-TS12 control system. Designing and installing both freeze protection and leak detection solutions simultaneously led to reduced total installed and operating costs and reduced installation time, which was critical to meeting the client's aggressive timeline.

PROJECT FACTS

To meet the essential performance freeze protection and leak detection needs of this top tier data center, our Raychem solution included:

- Engineering design experts providing optimized design and support using TraceCalc Pro for Buildings software and customized CAD design specifications.
- Raychem XL-Trace self-regulating heating cables and the ACS-30 advanced power distribution and control system.
- Raychem TraceTek TT-1000 and TT-1100-OHP leak detection cables, point sensors, SIMS (Sensor Interface Modules), and TT-TS12 control panels.
- Raychem Project Management and Engineering throughout the project.
- Raychem on-site Field Service for installation training, system commissioning, and owner training.

BENEFITS

We successfully met the customer's essential performance design objectives for reliable and efficient freeze protection and coolant leak detection solutions. Raychem was awarded the system engineering and product supply for this project based on our prior successful freeze protection projects with this client. Our solutions have been in service since 2024 and have performed flawlessly this past winter, exceeding expectations. We are now in the design phases for additional freeze protection and leak detection projects with this client. Raychem looks forward to working closely with this team and other data center providers on their new projects being planned and built to meet the world's increasing need for advanced top-tier data centers.



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