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Comprehensive Leak Detection Systems for Sustainable Data Center Resiliency

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Introduction

Data centers are critical infrastructures that house and manage vast amounts of sensitive data. However, they also come with a range of risks that need to be addressed for smooth operations. One such risk is the potential for leaks which can cause significant damage to the equipment and compromise the integrity of stored data. To mitigate this risk, facility managers need to constantly monitor and check for leaks. However, given the scale and complexity of data centers, it is a daunting task for them to do so manually.

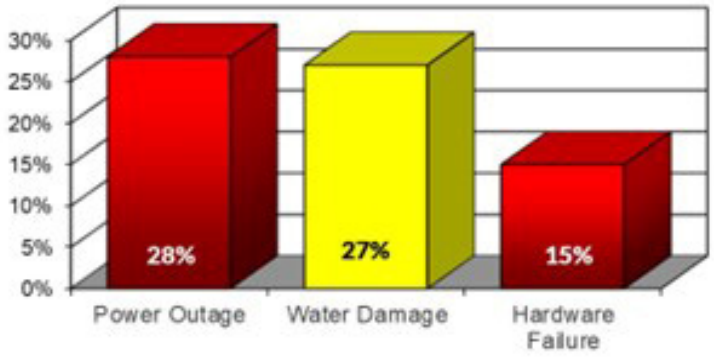
This is where RLE Technologies' SeaHawk leak detection equipment comes into play. RLE's leak detection equipment is engineered to detect even the smallest leaks in seconds, not hours or even minutes. In addition to RLE's liquid and water leak detection equipment, DP Guardian offers professional installation services to ensure that the system is implemented correctly and effectively. Their expertise in data center infrastructure and equipment installation ensures that the leak detection system is seamlessly integrated into the existing setup. By investing in RLE Technologies' leak detection cables and sensors, as well as DP Guardian's installation services, data center operators can significantly increase their sustainability and prevent risks associated with leaks.

Importance of Complete Coverage

Leak detection is an often overlooked or under-scoped component of a sustainable data center resiliency plan. Rather than implementing a dedicated system, many facilities rely on patchwork solutions which may lead to unexpected downtime. Possible sources of leaks are water supply & return lines (pipes, couplings, and fittings, valves) air conditioning units/chillers, plumbing fixtures, clogged drains, and storage tanks. Incorporating leak detection with direct alarm notification can result in timely resolution, potentially reducing business downtime by 27% *. The effects and costs of downtime can include any of the following:

- Hard costs for repairs
- Employee productivity and morale
- Redirection of efforts toward recovery
- Reputation (lost sales; current and future)

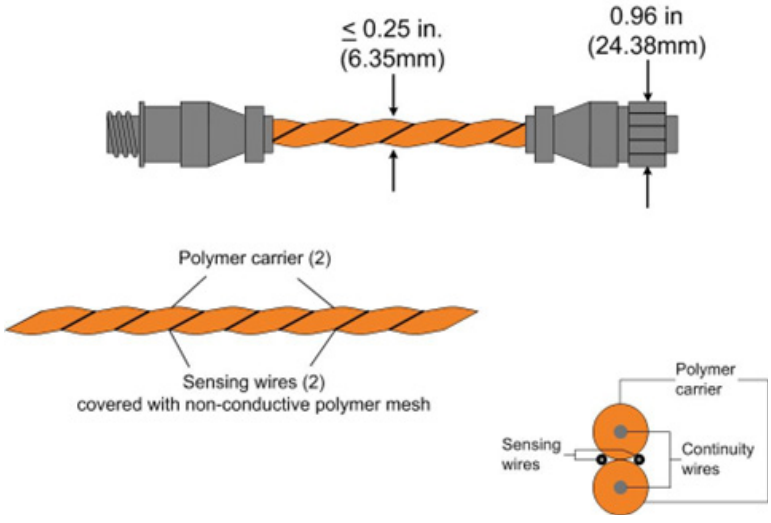
Leading Causes of Business Downtime
Leak detection with direct alarm notification may result in timely resolution of what equals to 27% of business downtime.



*Source: Contingency Planning Research; a Division of Eagle Rock Alliance

A comprehensive leak detection system includes various elements such as:
- resilient, fault-resistant cables capable of detecting leaks to the nearest foot,
- a range of sensors integrated into a single system,
- flexible options for running cables in multiple directions, and
- a custom interactive map

Precise Leak Location Identification
In the event of a leak in a critical environment, it is crucial to pinpoint its location. This can be achieved by utilizing the "serpentine method" with leak detection cable coverage over an entire area where a leak could occur. By doing so leaks of any size can be detected. This method eliminates the potential for delays in detection and remediation caused by water running in the opposite direction of spot detectors, which are ideal to detect conductive fluids in confined areas such as drip pans.



RLE Conductive Fluid Sensing Cable

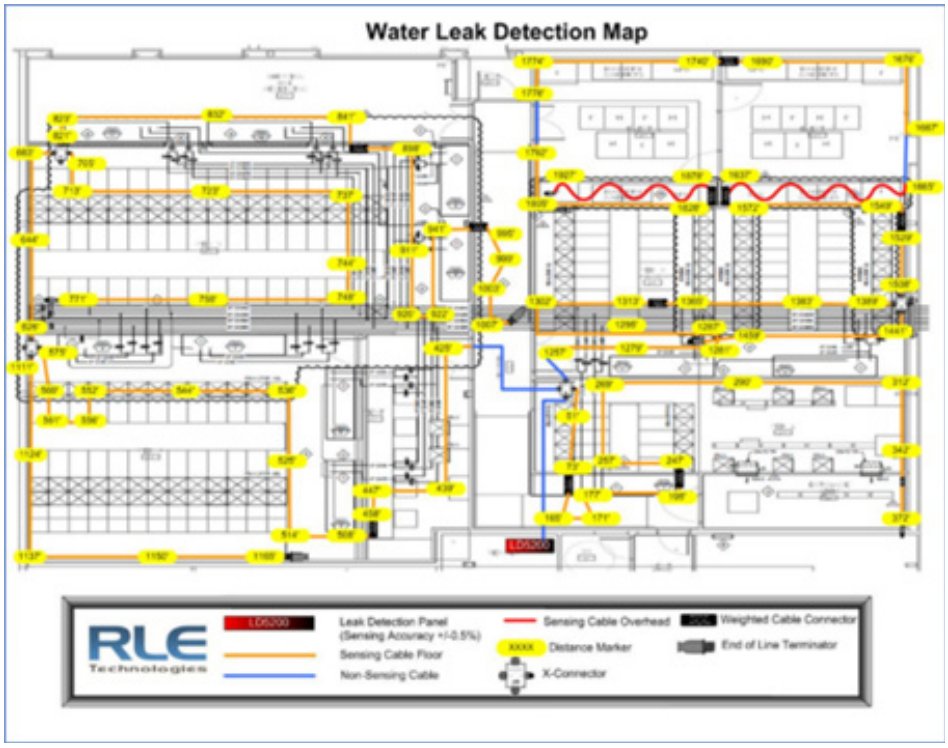
Secondly, knowing the exact location of a leak along a line of detection cable is important for a prompt response. A leak detection system that can identify the water's presence down to the foot of the line

greatly reduces response time and helps protect equipment from costly damage.

Flexibility in Sensing Solutions
Flexibility is key when designing a comprehensive leak detection system to meet the needs of a critical environment. Incorporating both spot detectors and comprehensive leak detection cabling into a single interface streamlines response times and remediation efforts in case of a leak.

Addressing Legacy Sites
Legacy sites often have water lines designed without considering the critical equipment. Therefore, it is important to cover these lines when designing a leak detection system. Using tools like X-Connectors allows a single leak detection system to branch off in multiple directions while maintaining accurate leak detection and location identification. This approach reduces the overall cost of system deployment and eliminates the need for doubling back cables to reach out-of-the-way areas.

Interactive Maps for Streamlined Detection
An interactive map of the entire facility with leak detection coverage can streamline detection, alarm, and response to water events in both large and small facilities. A custom interactive map provides a visual representation of the entire leak detection system, allowing for instantaneous identification of issues in a NOC (Network Operations Center). The map highlights the exact portion of the cable run run that triggers an alarm, ensuring a clear indication of where a response is needed. External systems can also be integrated for alarms through communication methods like dry contacts, MODBUS RS485 or TCP/IP, BACNET TCP/IP, and SNMP. Alarms can be sent directly to responsible parties via email or cell phone notifications.



Mitigating False Alarms
False alarms from a leak detection system can lead to delayed responses and complacency. To mitigate this, it is essential to consider engineered features in the leak detection cable. Non-conductive polymers

can reduce false alarms caused by contact with metal components in raised flooring systems, cooling systems, or cabinets. Adequate design is necessary to prevent false alarms due to contamination by dirt or debris. Cables can be cleaned by wiping them with rubbing alcohol or dish detergent. Some are even dishwasher safe. By deploying cables that are easy to clean you can reduce the need for cable replacement over time, lowering the system's total cost of ownership.

Conclusion

A comprehensive leak detection system is a vital component of data center resiliency. By considering complete coverage, precise leak location identification, flexibility in sensing solutions, legacy site challenges, interactive maps, and mitigation of false alarms, organizations can ensure timely detection and response to water events, minimizing equipment damage and costly downtime.

About RLE Technologies

RLE Technologies is the global provider of Triad raised floors, grommets, and containment products, SeaHawk leak detection, Falcon facility monitoring solutions, and Raptor system integration products. Since 1984, our wired and wireless monitoring systems have provided peace of mind for facility stakeholders and over 20 million feet of our patented leak detection cable is installed in facilities worldwide. RLE's products are proudly designed, engineered, and manufactured in the USA.

Additional information can be found at https://www.rletech.com

About DP Guardian

DP Guardian, a leading provider in data center solutions, offers comprehensive services to ensure seamless installations of RLE's leak detection cables. With their subject matter expertise and extensive team experience, clients can expect cutting-edge installation services that are executed with excellence and within budgetary constraints. DP Guardian understands the importance of a reliable and durable leak detection system. Therefore, they offer a wide variety of design and implementation strategies to meet the unique needs of each client. Whether it's fiber optic or copper structured cabling solutions, DP Guardian has the expertise to handle it all. In addition to the actual installation, DP Guardian also specializes in conveyance pathways. They understand that the proper routing and protection of leak detection cables is crucial for long-term performance. By implementing industry best practices, DP Guardian ensures that the installed cables are built to last. Overall, DP Guardian's commitment to quality, expertise, and customer satisfaction make them the go-to choice for seamless leak detection cable installations.

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