

A photograph of a server room aisle with rows of black server racks on both sides. The racks have mesh doors, and some internal components are visible. The floor is light-colored and reflective. The ceiling has exposed pipes and lighting fixtures.

Healthcare Insurance Data Center

Safeguarding Mission-Critical Operations with Multi-Layered, Code-Compliant Fire Protection

The Challenge

Insurance providers depend on uninterrupted data infrastructure to support critical operations nationwide. For one of the nation's leading health and well-being companies, the **Simpsonville Data Center** serves as a primary operational hub.

As part of a system upgrade to meet evolving code requirements, the facility identified a key issue: its **existing sprinkler system did not meet the updated flow rate and pipe sizing requirements outlined in NFPA 855** (Standard for the Installation of Stationary Energy Storage Systems).

At the same time, the facility needed to maintain continuous uptime—leaving no room for disruption during the retrofit.

Key Challenge

- Updating existing sprinkler pipe sizing to meet current requirements
- Lack of off-gas detection, limiting early response to battery failures
- Maintaining full operational uptime throughout the retrofit process
- Achieving compliance across multiple standards: **NFPA 855, NFPA 13, and local AHJ codes**

The Solution

Having previously performed ITM on the facility's clean agent system, ORR Protection was selected to deliver a fully integrated fire protection redesign tailored to the existing infrastructure and operational demands.

The approach centered on a **multi-layered, code-compliant strategy** designed to enhance safety while preserving uptime.

Core Components of the Solution

Multi-Layered Protection Strategy

Integrated early detection with suppression systems to respond at multiple stages—reducing risk and improving response time.

VESDA VEP Upgrades

Replaced legacy units with 25 high-sensitivity VEP detectors, improving detection accuracy and system reliability.

Sprinkler System Redesign

Modified the existing system to achieve the required 0.30 gpm/ft² application rate per NFPA 855 for lithium-ion battery protection.

Standards-Driven Implementation

Designed and installed in full compliance with:

- NFPA 855
- NFPA 13
- Local AHJ requirements

Specialized Materials & Optimization

Upgraded pipe sizing and sprinkler head types to meet performance requirements—without full system replacement.

Project Oversight

Delivered day-to-day project management, coordinating with Brown Sprinkler and local authorities to ensure seamless execution.



Scope of Work

End-to-end delivery—from engineering through final testing:

- **Design, Fabrication & Installation**
Upgraded suppression piping and hardware to meet increased demand
- **VESDA Detection Upgrade**
 - Installed 25 VESDA VEP units with enhanced sensitivity and networked control
- **Sprinkler Retrofit**
 - Increased flow capacity to align with high-hazard battery protection standards
- **Code Compliance Testing**
Systems tested and certified to meet:
 - NFPA 13
 - NFPA 855
 - Local AHJ requirements

On-Site Project Management

Coordinated installation, inspections, and scheduling while maintaining uptime

Key Results

- Full compliance with NFPA 855 and NFPA 13
- Increased fire protection capacity
- Enhanced early warning detection (VESDA)
- Zero downtime during implementation
- Improved safety through proactive risk mitigation

The Outcome

The Simpsonville Data Center now operates with a **future-ready, code-compliant fire protection system** built for mission-critical demands.

The system passed local fire marshal inspection and continues to support operational resilience—maintained by ORR Protection.

Why Industry Leaders Trust ORR Protection

For over 50 years, ORR Protection has supported mission-critical facilities with solutions that balance performance, compliance, and uptime.

Why Customers Choose ORR

- Data center and BESS fire protection expertise
- Proven knowledge of NFPA codes and AHJ requirements
- Customized, scalable solutions
- Integrated detection, suppression, and gas monitoring
- Commitment to safety, uptime, and long-term support
- Full project oversight and coordination



Protect your facility with a code-compliant fire protection strategy

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