



HEALTHCARE INSURANCE DATA CENTER: SAFEGUARDING DATA WITH MULTI-LAYERED, UPDATED, FIRE PROTECTION

The Challenge:

Insurance companies rely heavily on the continuous uptime of their data infrastructure as one of the nation's leading health and well-being companies. The Simpsonville Data Center, a primary facility supporting operations nationwide for an insurance provider, was upgrading its smoke detection system to accommodate code updates. The facility's existing sprinkler system did not meet the new flow rate and pipe sizing requirements outlined in NFPA 855, the standard for installing stationary energy storage systems.

Key Challenges:

- Updating existing sprinkler pipe size to proper requirements.
- Lack of off-gas detection reduced the ability to respond early to battery failures.
- The facility needed to maintain uptime throughout the retrofit process.
- Compliance with a mix of standards: NFPA 855, NFPA 13, and local codes.

The Solution:

ORR Protection had already performed ITM on their clean agent system, so the customer turned to ORR for a complete fire protection redesign explicitly tailored to their existing system and facility requirements. ORR's multi-layered, code-compliant approach would help ensure safety and operational continuity.

- **Multi-Layered Protection Strategy:** Combined early warning detection with suppression systems to respond at multiple stages of an incident

- **VESDA™ VEP Upgrades:** Replaced legacy VESDA units with 25 high-sensitivity VEP detectors for improved smoke detection sensitivity and reliability.
- **Sprinkler System Redesign:** Engineered a modification to the existing sprinkler system to achieve the .30 gpm/ft² application rate mandated by NFPA 855 for lithium-ion batteries.
- **Standards-Driven Implementation:** Designed and installed per NFPA 855, NFPA 13, and all applicable local codes.
- **Specialized Materials:** Upgraded pipe sizing and sprinkler head types to achieve performance without replacing the entire infrastructure.
- **Project Management and Oversight:** ORR Protection provided day-to-day oversight and collaborated closely with Brown Sprinkler and local authorities.



Scope of Work:

The project involved comprehensive engineering, product upgrades, installation, and testing:

- **Design, Fabrication, and Installation** - Upgraded fire suppression pipe sizing and hardware to meet increased demand requirements.
- **VESDA Detection Upgrade** - Deployed 25 VESDA VEP units, offering enhanced sensitivity and networked control.
- **Sprinkler System Retrofit** - Modified system components to increase flow rate and align with high-hazard battery protection standards.
- **Code Compliance Testing** - Fire suppression systems were tested and certified to meet:
 - NFPA 13 (Installation of Sprinkler Systems)
 - NFPA 855 (Energy Storage Systems)
 - Local AHJ requirements
- **On-Site Project Management** - ORR coordinated installation logistics and inspections while maintaining the customer's uptime requirements.

The Outcome:

Thanks to ORR's technical expertise and seamless execution, the Simpsonville Data Center is now equipped with a fire protection system tailored to the unique risks of a mission-critical facility, passing local fire marshal inspection.

Key Results:

- **Full compliance** with NFPA 855 and NFPA 13
- **Increased fire protection capacity** with upgraded sprinkler design
- **Advanced early warning detection** for smoke detection
- **No downtime or business disruption** during the upgrade process
- **Peace of mind** through proactive hazard mitigation

The customer now operates with a future-ready, code-compliant fire protection strategy, mitigating the risks associated with data centers and reinforcing the company's commitment to resilience and safety while still being maintained by ORR Protection.



Why Industry Leaders Trust ORR:

For over 50 years, ORR Protection has been a trusted partner to mission-critical facilities nationwide. Our data center design standards and code compliance expertise help ensure facilities stay protected, operational, and aligned with evolving regulations.

Why customers choose ORR:

- Extensive expertise in fire protection for **data centers and BESS**
- Proven understanding of **NFPA codes** and local AHJ requirements
- **Customized, scalable** solutions — not one-size-fits-all
- **Seamless integration** of detection, suppression, and gas monitoring
- **Commitment** to safety, uptime, and long-term support
- **Project overview** and subcontractor management



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