



TOTAL PROTECTION FOR ENERGY STORAGE SYSTEMS



Hiller is dedicated to providing both strategies and results for the challenges of fire protection in the ESS market.





Energy Storage Systems Fire Solutions... Are you prepared?

Energy Storage Systems (ESS) utilizing lithium-ion (Li-ion) batteries are the primary infrastructure for wind turbine farms, peak shaving facilities, and solar farms. The electrical grid is overburdened and cannot support these demands.

Although Li-ion batteries are the prime concern regarding ESS, NFPA 855 code will also cover lead-acid batteries, nickel-cadmium batteries, sodium batteries, and flow batteries. The code covers energy storage whether electrochemical or electromechanical.

Hiller has a close relationship with the NFPA 855 code committee and is at the forefront of this rapidly evolving hazard.

Risk should be evaluated based on the upcoming NFPA 855 code.

- ▶ Can you support a catastrophic fire event such as a thermal runaway?
- ▶ Is the ESS in a remote location, in a dedicated use building, or in a container?
- ▶ Should your design include smoke or gas detection, chemical suppression, and/or water-based suppression?
- ▶ How does the local AHJ fit into the discussion?
- ▶ Is life safety a factor?

Solution:

- ▶ With our extensive design experience and technical understanding, Hiller can provide the proper equipment for a turnkey solution based on the acceptance of your level of risk.
- ▶ Hiller can analyze your risk, understand the upcoming NFPA 855 code, and develop a solution that best suits your needs.
- ▶ We provide support in educating the local and state authorities.

SERVICES

- ▶ Education
- ▶ Consultation (Site Specific Or Best Practices)
- ▶ Pre-Incident Planning
- ▶ Design
- ▶ Pre-Installation Review (Site Survey)
- ▶ FMEA (Failure Mode and Effects Analysis)
- ▶ HMA (Hazard Mitigation Analysis)
- ▶ Coordination With AHJ/ Support/Permit
- ▶ Integration – Existing and New Systems
- ▶ Turnkey Projects
- ▶ Global Support
- ▶ Knowledge Of Current Codes/Regulations
 - NFPA 855, UL 9540
 - California CFC 608
 - IFC Chapter 12
- ▶ Testing/Inspections
- ▶ Decommissioning/Commissioning
- ▶ Explosion/Fire Modeling/Deflag and Vent Calcs
- ▶ Fire Department Operations Planning/Training
- ▶ Small Scale Abuse Testing and UL9540A Testing
- ▶ Li-Ion Battery Vent Gas Characterization
- ▶ Large Scale Safety Testing
- ▶ NFPA 70E AC and DC Arc Flash Risks Assessments
- ▶ Computational Fluid Dynamic Fire Modeling
- ▶ SFPE Fire Risk Assessments
- ▶ Fault Tree Analysis
- ▶ Reliability and Safety Integrity Level Analysis

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