



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.

844.41.HILLER



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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

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