

California Battery Energy Storage Safety Recommendations

February 14, 2025

The energy storage industry is committed to working with state and local agencies to address concerns raised by the Moss Landing incident and promote safety at all battery energy storage system (BESS) facilities. Safety is the first and foremost priority for our community of energy storage manufacturers, developers, and operators. Although the scale and impact of the Moss Landing incident was an anomaly, a proactive and comprehensive response is needed to ensure the implementation of appropriate and effective safety solutions at all existing and future energy storage facilities. The industry supports the development of new safety standards and rules for BESS to minimize both the likelihood of future incidents and the risks to communities and first responders if they do occur.

The California Energy Storage Alliance (CESA) and American Clean Power (ACP), with input from numerous member companies, have collaborated closely to develop these preliminary recommendations. We will continue to work together, in consultation with BESS safety experts, to refine these recommendations and consider other measures that we may add to this initial package.

ENSURING SAFETY AT ALL NEW BESS FACILITIES

The energy storage industry actively promotes the adoption and enforcement of the latest national fire safety standards. The industry has supported the integration or adoption of National Fire Protection Association (NFPA) Standard 855 (Standard for the Installation of Stationary Energy Storage Systems) in nearly a dozen states and continues to support policymakers in their effort to establish uniform best practices.

1. Enforce the Latest and Most Rigorous Safety Standards for All New Energy Storage Facilities

CESA and ACP recommend that all future BESS facilities be required to comply with the most recently published version of NFPA 855. This can be achieved by minimizing the lag between the finalization of new NFPA 855 standards and their incorporation into the California Fire Code (CFC). The NFPA 855 Committee publishes a new edition every three years, which is incorporated into the International Fire Code (IFC) the following year. The CFC then incorporates NFPA 855 in Chapter 12 indirectly via the IFC the year after. Updates to the CFC and updates to NFPA 855 are happening concurrently this year, but due to the mismatch in adoption cycles, the 2025 CFC will be based on the 2023 edition of NFPA 855. Better coordination of these updates cycles could substantially reduce the gap between publication of the latest NFPA 855 standard and its incorporation into the CFC.

2. Prohibit Indoor Configurations for Certain BESS Facilities

CESA and ACP recommend that all future front-of-meter BESS facilities using chemistries that are susceptible to thermal runaway be developed in modular outdoor enclosures, which greatly reduces the risk of propagation.

ADVANCING SAFETY ACROSS CALIFORNIA'S OPERATING BESS FLEET

The energy storage industry is committed to working with state and local officials to review the existing fleet of BESS facilities across California for potential safety risks and to take necessary corrective actions.

3. Inspect Existing BESS Facilities

CESA and ACP support the California Public Utilities Commission (CPUC) inventory of California's BESS facilities to prioritize the review and inspection of facilities under the CPUC's General Order 167-C authority.

4. Require Comprehensive Hazard Mitigation Analyses for Certain Operating BESS

CESA and ACP recommend that facilities that were not required to develop a Hazard Mitigation Analysis (HMA) at the time they were permitted, and facilities with energy storage components that are not listed in accordance with UL 9540, develop an updated Hazard Mitigation Analysis. CFC Chapter 1 empowers local and state Authorities Having Jurisdiction (AHJs) to invoke the current edition of NFPA 855 for existing facilities and require certain upgrades or safety features.

5. Mandate the Analysis of All Existing Indoor BESS to Determine Whether Additional Fire Walls or Barriers Are Needed

CESA and ACP recommend that existing indoor BESS facilities be assessed for the proper sizing and separation of fire areas. Fire walls and barriers are designed to prevent the spread of fire and gases and are effective in preventing the propagation of fires from one BESS unit to another. If separation or barriers are inadequate, CESA and ACP recommend requiring the installation of fire barriers or fire walls to limit the fuel load.

6. Require All Facilities to Submit Emergency Response Plans

CESA and ACP recommend that all BESS facilities that are not yet in compliance with SB 38 (Chapters 377, 2023) submit an Emergency Response and Evacuation Plan to the Authority Having Jurisdiction by July 1, 2025.

IMPROVING COLLABORATION AMONG INDUSTRY, COMMUNITIES & SAFETY EXPERTS

In addition to promoting the use of best practices and the latest safety features and strategies, the energy storage industry is committed to engaging local communities and fire officials to ensure their specific safety concerns and needs are addressed. The industry works with fire officials on emergency response planning and stands ready to partner with the state to continuously improve safety practices, inform siting and permitting practices, and provide educational support and training to state and local personnel.

7. Create a Safety Consortium of State Officials and Industry Experts

CESA and ACP support the creation of a BESS safety consortium made up of representatives from the energy storage industry and state officials to address safety concerns, pool resources, and present recommendations on statewide BESS safety improvements.

8. Update the Statewide BESS Best Practices and Permitting Guide

CESA and ACP suggest that the Governor's Office of Land Use and Climate Innovation update its BESS Permitting Guidebook (published in 2023) to include best practices for front-of-meter BESS facilities.

9. Provide More Training for Local and State Officials

CESA and ACP support the implementation of training for first responders and other local officials on battery storage safety. The most recent edition of NFPA 855 requires annual training exercises to address potential safety incidents. This requirement should be extended to all operating facilities in California. Additionally, the state should convene independent safety standards and codes experts to provide training on NFPA 855 and other relevant equipment certifications for state and local officials.