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**CALIFORNIA
ENERGY COMMISSION**



March 3, 2025

Hon. Laurie Davies
Assemblymember, District 74
California State Assembly
1021 O Street, Suite 4720
Sacramento, California, 95814

Assemblymember.davies@assembly.ca.gov

Dear Assemblymember Davies:

Thank you for sharing your concerns on battery energy storage system (BESS) safety in California. Safety is a priority for the California Energy Commission (CEC). Although the CEC did not license the Moss Landing and Otay Mesa facilities, as they were permitted at the local level, the CEC has been proactive in volunteering to inspect those sites and is currently collaborating with the California Public Utilities Commission (CPUC) on its root cause analysis.

Since its origins 50 years ago, the CEC has licensed energy generating facilities through its certified regulatory programs under the California Environmental Quality Act (CEQA). The CEC's Application for Certification (AFC) program certifies thermal power plants of 50 MW or greater, as well as related transmission lines, fuel supply lines, and other facilities. More recently, Assembly Bill 205 (2022) established the Opt-In Certification Program, a new pathway for eligible non-fossil-fueled power plants, energy storage, and manufacturing and assembly facilities to optionally seek certification through the CEC.

In reviewing Opt-In Certification applications, which requires a complete environmental analysis and a preliminary engineering design of the proposed facility, the CEC comprehensively evaluates the project in coordination with other agencies. This includes analyzing the proposed project's impacts on the environment; measures to minimize any significant impacts; reasonable alternatives to the project; conformance with applicable local, state, and federal laws, ordinances, regulations, and standards (LORS); and adherence to additional certification requirements set forth in the Public Resources Code. If a facility is certified following this comprehensive assessment, the CEC monitors its compliance during the construction, operation, and eventual closure with all conditions of certification imposed by the CEC.

With this context, below are detailed responses to your questions.

1. Q: How many BESS applications are under CEC review?

A: The CEC has received seven Opt-In project applications that include a BESS. One of those applications was deemed complete, and a staff assessment was published on February 18, 2025, which includes a draft Environmental Impact Report (EIR). The remaining six applications remain in the process of filing complete applications, which is required in order for CEC staff to begin a comprehensive evaluation of the proposed project. In addition, under our AFC program, the CEC currently has one application to add a BESS at the Los Esteros Critical Energy Facility.

2. Q: What is the CEC doing to ensure that these proposed projects have the necessary safety procedures and mechanisms in place to avoid fire hazards?

A: During the development of a staff assessment, CEC staff analyze the proposed project for any environmental impacts, including those associated with fire safety. The analysis of fire safety can primarily be found in the staff assessment sections focused on (1) Worker Safety and Fire Protection and (2) Hazards, Hazardous Materials/Waste, and Wildfire. These sections describe the characteristics of the proposed project, evaluate the significance of any impacts that could occur because of the proposed project, and identify applicable LORS, safety measures and procedures to avoid or reduce any impacts to less than significant.

Staff uses a variety of recent industrial guidelines (Underwriters Laboratories (UL) Solutions and National Fire Protection Association (NFPA)) and the latest edition of the California Fire Code (CFC) to guide its evaluation of BESS projects that seek a license to construct and operate. The industrial guidelines include NFPA 855: Standard for the Installation of Stationary Energy Storage Systems. Others include UL 9540A-2019: Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems, which provides the standard test methodology for determining fire and explosion hazards presented by a given BESS design when undergoing an overheating failure, such as thermal runaway. The latest edition of the CFC, particularly chapter 12, also contain fire safety requirements for stationary lithium-ion battery energy storage systems.

It's important to note that the 2025 Moss Landing and the 2024 Otay Mesa incidents involved stacked battery systems located within a building, which has come to be recognized as more complex to manage in the event of fire. The trend now is toward containerization of battery systems within large units similar to shipping containers. Containers minimize the risk of fire spreading to nearby batteries – which happened at Moss Landing and Otay Mesa – and can be constructed to include explosion prevention and fire suppression technologies. See the attached pages from the Darden staff assessment for more detail.

For example, the proposed design for the Darden Clean Energy Project, which is currently under review in the CEC's Opt-In Certification Program, includes containerized batteries. The proposed Compass Energy Storage Project in San Juan Capistrano also features a containerized design.

In the Darden Clean Energy Project Staff Assessment (CEC Docket 23-OPT-02, TN 261842), Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire, Conditions of Certifications require the following, at a minimum: a Hazard Materials Business Plan (HMBP) and Spill Prevention Control and Countermeasure Plan (SPCC); advance approval for changes in hazardous materials; hazardous waste generator identification numbers; site security plans for construction and operation; a Soils Management Plan; procedures for professional staffing, management, and actions in the case of suspected contaminated soil or groundwater; and an air quality and water quality sampling plan in case of a container fire at the BESS.

Additionally, section 4.4, Worker Safety and Fire Protection, of the Darden Clean Energy Project Staff Assessment also requires the project to use a BESS that is NFPA 855 Code compliant, including meeting the setback and fire safety requirements. NFPA 855 are industrial guideline standards for the safe installation of stationary energy storage systems. Another condition requires the project be built to NFPA 850 standard. NFPA 850 requires the development of a Fire Protection Design Basis Document that identifies relevant hazards such as the presence of fuels, lubricating oils, flammable liquids, and electrical equipment. The BESS also includes built-in failsafe and cooling systems designed to prevent thermal runaway and the spread of fire. Additionally, staff requires that BESS be certified to the latest edition of the Underwriters Laboratories (UL) 9540 standard that is a lead standard for energy storage systems and equipment, which lists safety requirements for BESS connected to the electric grid.

Staff also requires and reviews the test results from the latest edition of UL 9540A, which is a guideline specific to test methods for evaluating thermal runaway fire propagation and provides a standard test methodology for determining fire and explosion hazards presented by a given BESS design when undergoing an overheating failure, such as thermal runaway. Staff will also require batteries have a state of charge of no more than 30 percent during transport to the BESS site to further reduce risks of an incident, as studies have shown that a lower state of charge can significantly reduce a dangerous incident like fire or explosion during air transport. Other requirements will include:

- **Deflagration Panels:** In the event of gas accumulation, the BESS units are equipped with deflagration panels that open on the roof to direct overpressure or flames upwards, minimizing lateral damage.
- **Thermal Infrared Cameras:** Thermal infrared cameras are installed around the site to provide real-time temperature monitoring, crucial for early detection and response to potential fire events.
- **Construction and Operations & Maintenance Fire Protection Program:** A comprehensive program that includes advanced fire protection measures, including detection and alarm systems, and details of major fire hazards is required.
- **Command and Control Center:** A dedicated command and control center outside of the BESS facility that ensures incident commanders can safely assess and manage fire incidents is required.
- **Real-Time Environmental Monitoring:** In the event of a fire, an air and water real-time monitoring and sampling plan will be executed to provide critical data to first responders, ensuring effective and informed emergency responses.
- **Partnerships for Enhanced Safety:** Ongoing collaboration with the Fresno County Fire Protection District to ensure that local fire services are well-equipped and informed about the specific technologies and potential risks associated with the BESS facility.
- **Passive Fire Prevention:** The BESS includes passive fire prevention features, such as internal sparkers that detect and burn off small amounts of flammable gases to prevent gas buildup.
- **Safety Record of Components:** Historical data from similar installations indicate that the constituents released during BESS incidents do not pose public health concerns, affirming the safety of the technology and the effectiveness of evolving protective measures.

Beyond these project-specific requirements, California is proactively addressing safety for BESS through comprehensive state-level collaborations and regulatory updates. The CEC is part of a cross-agency collaborative recently convened by Governor Gavin Newsom to find opportunities to improve safety as the technology continues to evolve. Key initiatives include an update to the California Fire Code happening this year, expected to include enhanced BESS safety standards. The CPUC is also expected to vote [on new safety protocols](#) for maintenance and operation of BESS facilities in March 2025. In addition, the Governor's Office of Business and Economic Development (GO-Biz) is performing an assessment of the permitting issues and challenges faced by local governments and project sponsors in deploying energy projects and will focus initial efforts on BESS safety. These and other ongoing efforts are based on the latest studies and consultation with experts to ensure that California remains at the forefront of safe and reliable battery storage technology deployment.

3. Q: Has the CEC considered implementing setback guidelines to ensure that BESS projects are located at a safe distance from residential or heavily populated areas?

A: As described in the measures above, the CEC has and continues to require setbacks.

4. Q: Is the CEC studying the long-term environmental and health impacts of fires at battery storage facilities, including potential exposure to toxic chemicals.

A: Although the CEC has not been directed to complete a formal study on the long-term risks, staff stays up to date on the latest research and information related to environmental and health concerns related to BESS. Research and information gathered are incorporated into the CEC's staff assessment for each individual project. CEC staff also collaborates with federal, state, and local agencies such as the US Environmental Protection Agency (USEPA), State Fire Marshal and the California Air Resources Board (CARB) on these issues where appropriate. Further, on Monday, February 10, the CEC convened an array of state leaders, industry representatives, utility heads, fire safety experts and others to engage in discussions to continue making improvements. The CEC also hosted a virtual BESS Safety workshop in collaboration with partner agencies and more than 500 participants attended the event: [Staff Workshop on BESS Safety](#).

Part of what we are tracking are rigorous environmental monitoring and comprehensive studies conducted by organizations like New York State Energy Research and Development Authority (NYSERDA). These studies have consistently demonstrated that previous fire incidents involving BESS have not posed a significant risk to public health. The risk of modern BESS fires is said to be comparable to other common risks, such as residential fires. In line with this research, various officials who spoke at a February 12 press conference on the Moss Landing fire reported that:

- Monitoring by U.S. EPA found levels of particulate matter and hydrofluoric acid posed no risk to the public
- The Department of Toxic Substance Control found no soil contamination
- Monterey Bay Air Quality District detected no impacts associated directly with the fire on its air monitors in surrounding areas

Finally, I am including a fact sheet on the CEC's Opt-In Program to provide additional general background as well as an excerpt from the CEC's Staff Assessment of the Darden Clean Energy Project which deals specifically with the lessons learned from the Moss Landing and Otay Mesa projects. The full Staff Assessment is published on the CEC docket and is available [here](#).

Please contact Sarah Brady, Director of the CEC's Office of Governmental and International Affairs (OGIA), with any questions (sarah.brady@energy.ca.gov, (916) 891-9172).

Sincerely,



Drew Bohan
Executive Director
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Cc: Donna Cleary, Chief of Staff, Assemblymember Laurie Davies
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