Office of Senate Floor Analyses
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THIRD READING

Bill No: AB 841
Author: Patel (D), et al.
Amended: 8/29/25 in Senate
Vote: 21

SENATE GOVERNMENTAL ORG. COMMITTEE: 15-0, 7/8/25
AYES: Padilla, Valladares, Archuleta, Ashby, Blakespear, Cervantes, Dahle, Hurtado, Jones, Ochoa Bogh, Richardson, Rubio, Smallwood-Cuevas, Wahab, Weber Pierson

SENATE APPROPRIATIONS COMMITTEE: 7-0, 8/29/25
AYES: Caballero, Seyarto, Cabaldon, Dahle, Grayson, Richardson, Wahab

ASSEMBLY FLOOR: 79-0, 6/2/25 - See last page for vote

SUBJECT: State Fire Marshal: personal protective equipment: battery fires

SOURCE: California Professional Firefighters

DIGEST: This bill requires the State Fire Marshal (SFM), in consultation with the Division of Occupational Safety and Health (Cal/OSHA), to develop a working group to make recommendations regarding personal protective equipment used in responding to lithium-ion battery fires, as specified.

ANALYSIS:

Existing law:

1) Authorizes the SFM to make changes as may be necessary to standardize all existing fire protective equipment throughout the state.

2) Provides that any report required or requested by law be submitted by a state or local agency to a committee of the Legislature or the Members of either house of the Legislature generally, to instead be submitted as a printed copy to the Secretary of the Senate, as an electronic copy to the Chief Clerk of the

Assembly, and as an electronic or printed copy to the Legislative Counsel, as specified.

This bill:

1) Requires the SFM to develop, in consultation with Cal/OSHA, a working group to make recommendations regarding personal protective equipment used in responding to lithium-ion batteries.

2) Requires the working group to include members of the State Board of Fire Services (Board), academia, health and safety experts, a representative from the Division of Occupational Safety and Health, and labor organization representing the utility workforce, as determined by the SFM.

3) Requires the working group to review, and for the purposes of making recommendations to consider specified equipment, technology, and practices, as defined.

4) Requires the recommendations developed pursuant to this bill be delivered to the Legislature no later than September 1, 2026, as specified.

5) Includes a repeal date on the above reporting requirement of January 1, 2030, and includes a repeal date for this statute of January 1, 2031.

Background

Author Statement. According to the author's office, "our state has made great strides toward utilizing electricity and batteries over fossil fuels. As such, lithium-ion battery storage systems have proliferated and California has the most amount of utility-scale battery storage facilities and electric cars, second only to China. While positive in many ways, this battery expansion has also come with unintended consequences, as the recent fire in Moss Landing—among others—demonstrated. Our firefighters are there to fight the fire to the best of their ability and keep our communities safe from further spread. But their current Personal Protective Equipment (PPE) and decontamination procedures have not been updated with this new form of fire that is becoming more common. As a result, they are exposed to toxic metals and semi-volatile organic compounds, exposing them to cancer and other serious health risks. To safeguard firefighters' health amid the rapid expansion of lithium-ion battery use, California urgently needs updated PPE and more effective decontamination procedures."

Division of Occupational Safety and Health. Cal/OSHA protects and improves the health and safety of working men and women in California and the safety of passengers riding on elevators, amusement rides, and tramways – through the following activities: setting and enforcing standards; providing outreach, education, and assistance; issuing permits, licenses, certifications, registrations, and approvals. Cal/OSHA provides free safety and health assistance to employers, with the goal of preventing occupational injuries and illness.

Dangers of Firefighting. As noted in the Assembly Emergency Management Committee analysis of this bill, and according to the Administrator of the United States Fire Administration, "fire is a public health and safety problem of great proportions, and firefighting remains one of the Nation's most hazardous professions. On average there are more than 1.2 million structure fires, nearly 3,000 deaths, thousands of injuries, and scores of individuals displaced annually from fires. Although disasters such as fires can affect everyone, fires can also exacerbate pre-existing challenges in underserved communities across the country.

These impacts are further compounded by poor implementation and enforcement of national building codes and fire risks associated with technology that make fires more common, more intense, and more destructive. These challenges pose heightened risks to the public and to first responders who safeguard our communities, and the challenge continues to evolve. For example, emerging technologies like Lithium-ion (Li-ion) powered devices and harmful chemicals including polyfluoroalkyl substances (PFAS) introduce new and continued risks to our communities and firefighters."

Lithium-ion Batteries. Lithium-ion batteries are comprised of an anode, cathode, separator, electrolyte, and two current collectors (positive and negative). The anode and the cathode store the lithium. The electrolyte carries positively charged lithium ions from the anode to the cathode and vice versa through the separator. The movement of the lithium ions creates free electrons in the anode, which creates a charge at the positive current collector. The electrical current then flows from the current collector through a device being powered (cellphone, computer, etc.) to the negative current collector. The separator blocks the flow of electrons inside the battery.

Risk of Thermal Runaway. One of the primary risks related to lithium-ion batteries is thermal runaway. Thermal runaway is a phenomenon in which the lithium-ion cell enters an uncontrollable, self-heating state. Thermal runaway can result in

extremely high temperatures, violent cell venting, smoke, and fire. Faults in a lithium-ion cell can result in a thermal runaway, and these faults can be caused by internal failure or external conditions. Lithium-ion battery fires and explosions are triggered by the thermal runaway reactions inside the cell and, when stored near or next to another battery or batteries, can set off a chain reaction, making an already tough fire to fight even worse. When they reach thermal runaway, lithium-ion battery fires can burn for hours or even days, until all the flammable chemicals in the battery have been consumed by the combustion reaction.

One such example occurred in Rancho Cordova in June of 2022, when a Tesla Model S, which had been badly damaged in a collision was sitting in a wrecking yard and suddenly erupted in flames. When firefighters arrived the car was engulfed, according to the Sacramento Metropolitan Fire District, "[e]very time the blaze was momentarily extinguished, the car's battery compartment reignited." Eventually, the firefighters used a tractor to create a pit in the dirt, were able to get the car inside, and then filled the hole with water. That allowed the firefighters to suffocate the battery pack and ultimately extinguish the fire, which burned hotter than 3,000 degrees and took more than an hour and 4,500 gallons of water to extinguish.

Reports to the Legislature. State or local agencies required to file reports with the Legislature must submit a printed copy to the Secretary of the Senate, an electronic copy to the Chief Clerk of the Assembly, and an electronic or printed copy to the Office of Legislative Counsel. The Assembly and Senate each compile a list of reports received. The public may access and search agency reports by keywords, agency, authority type, recipient, or due date online at www.agencyreports.ca.gov.

An article in CalMatters from December of last year titled "most reports ordered by California's Legislature this year are shown as missing," noted that at the time, of the 867 reports due between January 1 and December 9 of 2024, "84% have not been filed to the Office of Legislative Counsel." Further, of the "16% that were submitted – 138 reports – 68 were filed late. Another 344 reports are due by Dec. 31." The article notes that the "data is in line with previous CalMatters reporting that found 70% of about 1,1000 reports due between February 2023 and February 2024 had not been filed to the Office of Legislative Counsel. About half of those that were filed were late."

Working Group. This bill requires the SFM, in consultation with Cal/OSHA, to develop a working group to make recommendations regarding personal protective equipment used in responding to lithium-ion battery fires. This bill requires the

working group to included members of the State Board of Fire Services, academia, health and safety experts, a representative from the Division of Occupational Safety and Health, and a labor organization representing the utility workforce, as determined by the SFM.

This bill requires the working group to review, and for the purposes of making recommendations to consider, at a minimum, all of the following:

a) The latest personal protective equipment to limit exposure to lithium and other heavy metals when responding to fires where lithium-ion batteries are present.
b) Technology to clean personal protective equipment after response to a lithium-ion battery fire.
c) Whether different types of personal protective equipment should be used for different types of lithium-ion battery fires, including large scale battery energy storage facilities, home-based battery energy storage facilities, and electric vehicles that have lithium-ion batteries.
d) Current decontamination practices at the fire scene to reduce exposures and potential negative health consequences.

Related/Prior Legislation

SB 283 (Laird, 2025) establishes the Clean Energy Safety Act of 2025 by requiring energy storage systems authorized by the California Energy Commission or a local jurisdiction to comply with new fire safety standards and inspection requirements. (Pending on the Assembly Floor)

AB 696 (Ransom, 2025) requires the Director of the Office of Emergency Services (OES) to convene the Lithium-Ion Car Battery Advisory Group to review, and advise the Legislature on policies pertaining to the safety and management of lithium-ion vehicle batteries involved in an emergency situation, as specified. (Pending on the Senate Floor)

AB 1285 (Committee on Emergency Management, 2025) requires the SFM, in consultation with OES, to develop fire prevention, response, and recovery measures for utility grade lithium-ion battery storage facilities, as specified. (Pending on the Senate Floor)

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: No

According to the Senate Appropriations Committee, the Department of Industrial Relations, which houses OSHA, notes costs of approximately $169,000 in the first

year and $157,000 ongoing to consult with the SFM and participate in the working group (Occupational Safety and Health Fund).

The California Department of Forestry and Fire Protection, which houses the SFM, anticipates the fiscal impact to convene the working group to be absorbable.

SUPPORT: (Verified 8/29/25)

California Professional Firefighters (Source)
City of Laguna Niguel
City of San Marcos
Orange County Fire Authority

OPPOSITION: (Verified 8/29/25)

None received

ARGUMENTS IN SUPPORT: In support of the bill, the California Professional Firefighters write that, "[t]he dangers of lithium-ion battery fires cannot be understated, both to the safety personnel responding to them as well as to the surrounding communities. In 2021, a firefighter sustained irreversible injuries while responding to a fire at a facility storing and refurbishing vehicle batteries in Orange County. Tragically, they were forced to initiate a disability retirement due to the extent of their injuries, underscoring the dangers these fires present to our members. On May 15, 2024, a fire at an ESS facility in Otay Mesa burned for 8 days, releasing lethal levels of hydrogen cyanide and prompting a 'shelter-in-place' order for nearby residents. On January 16, 2025, a fire at one of the world's largest ESS facilities in Moss Landing triggered evacuations and forced the closure of Highway 1. And a mere 10 days later on January 26, 2025, Long Beach firefighters responded to a structure fire involving numerous lithium-ion battery packs for vehicles, exposing the responding firefighters to toxic gases that may have long-term effects on their health."

Further, "AB 841 directs the Office of the State Fire Marshal, in consultation with Cal-OSHA, to establish a working group, to make recommendations regarding personal protective equipment used in responding to lithium-ion battery fires and strategies to mitigate post-fire health impacts on firefighters. The working group is required to review issues and make recommendations on appropriate personal protective equipment used in response to these fires, best practices for decontamination after a fire incident, and most appropriate tools for cleaning PPE after an incident."

ASSEMBLY FLOOR: 79-0, 6/2/25
AYES: Addis, Aguiar-Curry, Ahrens, Alanis, Alvarez, Arambula, Ávila Farías, Bains, Bauer-Kahan, Bennett, Berman, Boerner, Bonta, Bryan, Calderon, Caloza, Carrillo, Castillo, Chen, Connolly, Davies, DeMaio, Dixon, Elhawary, Ellis, Flora, Fong, Gabriel, Gallagher, Garcia, Gipson, Jeff Gonzalez, Mark González, Hadwick, Haney, Harabedian, Hart, Hoover, Irwin, Jackson, Kalra, Krell, Lackey, Lee, Lowenthal, Macedo, McKinnor, Muratsuchi, Nguyen, Ortega, Pacheco, Papan, Patel, Patterson, Pellerin, Petrie-Norris, Quirk-Silva, Ramos, Ransom, Celeste Rodriguez, Michelle Rodriguez, Rogers, Blanca Rubio, Sanchez, Schiavo, Schultz, Sharp-Collins, Solache, Soria, Stefani, Ta, Tangipa, Valencia, Wallis, Ward, Wicks, Wilson, Zbur, Rivas

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