Submitted Electronically

January 22, 2024

NFPA Standards Administration
1 Batterymarch Park
Quincy, Massachusetts 02169-7471

RE: NFPA 70-2023 Edition, National Electrical Code
TIA Log No.: 1767

Dear NFPA Standards Administration:

On behalf of Tesla, ChargePoint, ABB E-mobility, Electrify America, FLO, EVBox, and the Zero Emission Transportation Association (the Joint EV Parties), we respectfully submit comments regarding the proposed Tentative Interim Amendment (TIA) Log No. 1767 for NFPA 70, the National Electrical Code. The TIA would require one or more emergency disconnects at DC fast charging stations, similar to that required by NFPA 30A at fuel dispending facilities.

As representatives of electric vehicle and electric vehicle supply equipment manufacturers, we are committed to helping fire departments and first responders safely handle emergency situations involving EV charging equipment and any associated infrastructure. Understanding the potential dangers and learning how to deal with them correctly makes everyone safer. While the Joint EV Parties understand the intent of the TIA in keeping first responders safe in the unlikely event of an electrical fire at a fast charging station, we are concerned that the code language has not been thoroughly vetted and would lead to unintended consequences for EV charging operators, the public, and first responders themselves. Furthermore, it is the opinion of the Joint EV Parties that there is no clear emergency need for the TIA. EV charging stations have been deployed safely for more than a decade; there is no data or analysis to suggest otherwise. Additionally, the proposed TIA, does not fully resolve one of the main concerns that it raises, which is the lack of training and accessibility of training materials to first responders to properly handle such emergency situations. Resolving this, would negate the need of this TIA. With the absence of data, technical substantiation, or clear and present risks, the Committee should reject the TIA and instead discuss code modifications through the standard code cycle process.

The Joint EV Parties have identified the following concerns with the proposed TIA:

- **Several sections of the TIA are technically inconsistent, inaccurate, or infeasible.**
    - Section 625.43(B) is redundant with section 625.43 Equipment Disconnects of NFPA 70. A means of disconnection is already required if a first responder chooses to engage the equipment. To disconnect power to a site, first responders should cut the lock on the electrical switchgear, locate the main feeder breaker, turn the handle to the OFF position, and verify the absence of AC hazard sources with available tools.
    - Section 625.43(B) includes language in which “emergency shutoff devices” and “emergency disconnects” are used interchangeably. It should read, “emergency disconnects.”
    - Section 625.43(B)(2) is infeasible. The proposed language would require that all electric vehicle supply equipment on the premises be powered down using a single device. This would not be possible if there are multiple fast charging stations owned and operated by different EV charging service providers on site. This is common in commercial settings, like a shopping mall parking lot or highway traffic stop, in which different charging operators maintain sites on opposite sides of the parking facilities. The electrical infrastructure that supports these charging sites would be extremely infeasible, if not impossible, to interconnect in a way that would disconnect all the power on the premises.
    - Section 625.43(B)(3) has an error in text. It currently reads “ELECTRIC VEHICLE EMERGENCY DISCONNECT.” An emergency disconnect is not intended to disconnect the electric vehicle itself, but the AC input to the EV charging station. It should read, “ELECTRICAL EQUIPMENT EMERGENCY DISCONNECT.”
    - Section 625.43(B)(4) would require a “manual intervention” to reset the emergency disconnect, which would increase the likelihood of misuse or vandalism. By and large, charging stations are unattended, unlike traditional gas stations with on-site employees. If an easily accessible emergency disconnect is pushed out of malfeasance or user error, a site could then be offline for hours or even days depending on the location, until service personnel arrive to reset the emergency disconnect. This would also be counter to requirements for the National Electric Vehicle Infrastructure (NEVI) program which requires 97% uptime for DC fast charging stations. Charging station reliability is already a concern and adding an additional point of shutdown without a clear safety benefit, will cause challenges.
    - Section 625.43(B)(5) incorrectly assumes the “source of supply.” If a fault occurs at the EV inlet or EV connector, the "source of supply" could be either the EV charging station or the EV battery pack. If the source is the EV battery, activating the emergency

disconnect is futile as it will not remove remaining energy in the pack itself. Thus, this text is problematic. It should read, “disconnect all conductors of the circuits from the utility power feed."

- **Emergency disconnects do not sufficiently increase public safety**; they would provide a false sense of security for first responders because DCFCs, if connected to the EV battery, may still be live. Cutting the flow of electricity to the car will not reduce the propagation if a fire has already occurred. The new requirement does not obviate the need to have a separate means to verify the DC circuits are de-energized. An emergency disconnect may lead first responders to approach the charge posts and vehicles that are still energized, which could lead to an electrical injury.
- **An EV charging site is not comparable to a gas station.** Pump-level emergency shut-offs at liquid fueling stations stop the flow of flammable and combustible fuels to prevent further fire propagation. Reducing the spill of hazardous materials increases the ability for emergency responders to suppress and contain a fire. With EV charging, no such liquid flow exists; a site-wide emergency disconnect will not increase the ability to suppress and contain a fire incident.
- **First responders should use defensive firefighting tactics when responding to a fire involving EV charging infrastructure.** With utility lines or transformers, no publicly accessible emergency shut offs exist and instead trained technicians come to the site to de-energize the electrical equipment. In high voltage emergencies involving electrical infrastructure, first responders are trained to first contact the utility company, then use defensive firefighting tactics, such as isolating the area, protecting exposures, and letting the fire burn. The same tactics should be replicated for electrical fires at DC fast charging stations.
- **Electric vehicles and EV charging are safe and do not constitute a previously unknown hazard.** There is no emergency or risk to public safety that justifies approval of the TIA. Electric vehicles and EV charging stations are extremely safe. Global data, compiled from 2010 to 2020 by the EV FireSafe research project, indicates there is a 0.0012% chance of a passenger electric vehicle battery catching fire.[1] EV charging is extremely safe as well. Charging cables are only energized when connected and locked to the electric vehicle and communication is established between the charging equipment and the vehicle. The flow of electricity to the charging cable is automatically shut off if the charging connector is unlocked or communication between the vehicle and charging equipment ceases.

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[1] https://www.evfiresafe.com/ev-fire-faqs

The Joint Parties appreciate the opportunity to provide feedback on TIA 1767. We believe the proposed TIA should be voted down due to a lack of sufficient technical justification and adequate emergency need. We look forward to participating in the 2026 NFPA 70 code development cycle where the code can be refined with input from EV charging industry stakeholders who are familiar with the installation and operation of electric vehicle supply equipment and finalized through a robust, open, and consensus-based process.

Sincerely,

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