



Commercial Vehicle Safety Alliance

Improving commercial motor vehicle safety and enforcement

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Washington, DC 20590

RE: Docket Number: PHMSA-2025-0678

Hazardous Materials: Request for Feedback on Hazmat Transportation Risks: Heavy-Duty Electric Vehicles Versus Internal Combustion Engine Motor Carriers

The Commercial Vehicle Safety Alliance (CVSA) respectfully submits the following comments in response to the Pipeline and Hazardous Materials Safety Administration's (PHMSA) request for stakeholder feedback on the safety risks, operational challenges and regulatory considerations associated with transporting hazardous materials using heavy-duty electric vehicles (EV) compared to internal combustion engine (ICE) vehicles (*i.e.*, gas or diesel), docket number PHMSA-2025-0678.

CVSA is a nonprofit organization comprised of local, state, provincial, territorial and federal commercial motor vehicle (CMV) safety officials and industry representatives. The Alliance aims to prevent commercial motor vehicle crashes, injuries and fatalities and believes that collaboration between government and industry improves road safety and saves lives. Our mission is to improve commercial motor vehicle safety and enforcement by providing guidance, education and advocacy for enforcement and industry across North America.

General Comments

CVSA commends PHMSA for seeking feedback from stakeholders regarding safety considerations related to the transport of hazardous materials via a commercial motor vehicle powered by an internal combustion engine compared to a heavy-duty electric vehicle. As technology continues to evolve, it is imperative that federal regulators keep pace with industry, ensuring that the safety regulations account for new developments. In particular, PHMSA is seeking input on how a shift from ICE-powered vehicles to EVs may impact hazmat packaging integrity, transportation safety, emergency response procedures, regulatory compliance and overall vehicle-related risk.

While PHMSA's request for information (RFI) asks a broad range of questions, CVSA's comments are limited to those questions that are within the scope of the CMV enforcement community. CVSA encourages PHMSA to continue to engage with the appropriate stakeholders to ensure the agency receives comprehensive responses to all the questions posed in the request for information. In particular, CVSA encourages PHMSA to engage with those communities with expertise in responding to hazardous materials incidents, such as the International Association of Fire Fighters (IAFF) and the International Association of Fire Chiefs (IAFC).

As noted above, CVSA has provided comments to a limited number of the questions posed by PHMSA. However, generally, CVSA's member jurisdictions have serious concerns about the transportation of hazardous materials by EVs, particularly those that would complicate emergency response when an incident occurs. Allowing the transport of hazardous materials by EVs will inherently increase the risk and severity when an incident occurs, as it combines the risks and hazards associated with a hazardous materials incident with those associated with an EV incident. This will significantly increase the risk and complexity for any emergency responders. As such, CVSA strongly encourages PHMSA to move forward slowly, to conduct phased research on each hazard class and to make determinations regarding which, if any, hazard classes may be transported via EVs.

Responses to Specific RFI Questions

1. Hazmat Packaging and Containment Risks

Bullet #3: *Are there certain types or classes of hazardous materials (e.g., flammables, corrosives, or explosives) that pose an increased risk when transported by EVs versus ICE motor carriers?*

As noted above, CVSA's member jurisdictions expressed serious concerns about the transport of many hazard classes via EV. The examples provided in the question, flammables, corrosives and explosives, would all present an enhanced level of risk when transported via an EV versus an ICE vehicle. In addition, Class 7 materials, non-flammable and toxic gases, poisons, combustible liquids, oxidizers, organic peroxides and some hazardous wastes would all pose additional risk, as all of these materials would add or accelerate burn time and/or complicate firefighting measures.

CVSA recommends PHMSA initially limit transportation of hazardous materials by EVs, excluding any materials that could increase combustion. In addition, CVSA encourages the agency to conduct pilot projects, limited in scope, to gather data on the excluded classes, to determine which, if any, can safely be transported via EV. This approach would allow for innovation to continue, while not exposing road users to additional risk.

Bullet #6: *What concerns or risks do you believe might be associated with transporting bulk hazardous materials—such as propane—in cargo tanks on EV chassis compared to traditional ICE trucks, including both permanently attached and portable (non-attached) tanks? Please include perspectives on safety, reliability, and any other challenges this configuration might present.*

As noted in the response to Bullet #3 above, CVSA's member jurisdictions have strong concerns regarding the increased risk associated with transporting any class of hazardous materials via EV, but in particular those that would increase combustion. Substances such as propane present an inherently higher risk

when a collision or other incident occurs. CVSA strongly recommends that PHMSA prohibit transport of those types of hazardous materials via EVs broadly, until the agency can gather sufficient data to evaluate the safety risks.

2. Vehicle-Specific Safety and Performance Risks

Bullet #1: *How do hazmat cargo risks differ based on the interaction with heavy-duty EV powertrains versus ICE systems?*

CVSA's member jurisdictions would note that the risks associated may not necessarily differ, but rather are degrees of severity. The risk associated with many hazardous materials being transported is that when an incident occurs the fuel for the CMV may combine with the hazardous materials, resulting in a large scale event. There are many documented cases of electric batteries, whether it is the cargo or the vehicle's power source, catching fire and presenting significant risk and challenges for the emergency response community, as the power source is more difficult to extinguish once ignited. The main concern with transporting most hazard classes via an EV is that if an incident occurs, the fuel source (the electric battery) has a much longer run time for burning, when compared to an ICE-powered vehicle, which has a limited fuel source. In addition, unlike EV batteries, emergency responders do currently have effective methods for extinguishing a fire fueled by standard sources, like diesel or gas.

Bullet #4: *How do the fire risks (such as heat flux, maximum burn temperature, or burn time) associated with thermal runaway in EV batteries differ from an ICE vehicle involved in equivalent incidents? Additionally, how can further research help to refine prevention and mitigation strategies for these risks?*

As noted above, EV batteries have a longer burn time and, currently, emergency responders lack effective means to extinguish an EV-fueled fire. CVSA encourages PHMSA to engage directly with the emergency response community, and particularly the IAFF and IAFC, to address these concerns.

Bullet #5: *What studies or data collection efforts could improve the understanding of long-term vehicle wear due to hazmat exposure (e.g., radioactive material transportation) in EV versus ICE transportation? Is there a need for additional studies to support engineering standards for post-crash requirements (e.g., electric shock protection, battery pack retention, electrolyte leakage, or fire safety) for hazmat EVs?*

CVSA's member jurisdictions concur with PHMSA's conclusion that additional research and study into these topics is necessary and commend the agency for seeking to engage with stakeholders to address these questions. In particular, additional research is needed into how to combat fires fueled by an electric battery and how to reduce the burn time when an incident does occur. As noted above, CVSA encourages PHMSA to engage directly with the emergency response community to collaborate on this research. PHMSA may also consider reaching out to educational institutions (e.g. Texas A&M) and other government agencies (e.g. Department of Energy) that may be conducting research on emerging EV technology and safety.

Conclusion

The transportation of hazardous materials by EVs, particularly those that would enhance combustion if an incident occurs, creates more risk than transportation of hazardous materials via ICE-powered CMVs. This will significantly increase the risk and complexity for any emergency responders. As such, CVSA strongly encourages PHMSA to restrict transport of hazardous materials via EVs to very limited segments until the agency can conduct the necessary research to better understand the unique risks each hazard class poses and identify more effective means to extinguish fires fueled by an electric battery.

CVSA works to closely monitor, evaluate and identify potentially unsafe transportation processes and procedures as well as to help facilitate and implement best practices for enhancing safety on our highways. Commercial motor vehicle safety continues to be a challenge and we need the involvement of all affected parties to help us better understand these issues and put into place practical solutions. We appreciate the opportunity to provide this feedback and the agency's commitment to safety and stakeholder involvement.

If you have further questions or comments, please do not hesitate to contact me at 202-998-1008 or collin.mooney@cvsa.org.

Respectfully,

A handwritten signature in black ink, appearing to read 'Collin B. Mooney'.

Collin B. Mooney, MPA, CAE

Executive Director

Commercial Vehicle Safety Alliance