PREVOST

June 14th, 2024

Ms Sophie Schulman
Acting Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Re: Docket Number NHTSA–2024–0012
Notice of Proposed Rulemaking - FMVSS No. 305a Electric- Powered Vehicles: Electric Powertrain Integrity Global Technical Regulation No. 20, Incorporation by Reference

Comments from Prevost, motorcoach manufacturer

Dear Ms Schulman,

As a whole, Prevost is supportive of NHTSA in the proposal of FMVSS No. 305a. The context of electrical vehicles has changed noticeably during the last few years, and regulations should be kept up to date as the technology evolves; vehicle safety is important and somewhat unregulated for electric vehicles as of right now.

The proposed changes seem to be in line with NHTSA's mission of saving lives and preventing injuries and reducing economic costs due to road traffic crashes, through education, research, safety standards and enforcement activity.

We appreciate the opportunity to share the following comments and concerns for consideration.

## On the topic of the request for comment on the mechanical shock test:

Accelerations in the event of a crash are highly dependent on the location of the crash as well as the high voltage source location.

For light vehicles, there are only a few locations where the REESS can be installed, and the acceleration profile presented by NHTSA seems to reflect the cases. For heavy vehicles such as motorcoaches, there are more battery locations possible, adding another degree of liberty to the crash parameters. Some designs might cause higher accelerations on the REESS, thus impacting the safety of the REESS.

For example, a frontal impact would trigger lower accelerations if the REESS is located at the backend of the coach. In contrast, the accelerations measured would be significantly higher in the event of a rear impact, with the same REESS location. However, such a REESS location confers many benefits from an overall product safety perspective, including as to passengers evacuation.

Since accelerations on the REESS are highly design dependent, we recommend that additional studies that consider the above should be performed before implementing requirements.

## On the topic of section 12 and the breakout harness location:

The breakout harness location can be specified by the manufacturer and should be located on the traction side of the REESS. While we understand the figure provided with the section, it is unclear which systems and subsystems are considered to be part of the traction side of the REESS.

We request some clarifications as to what is part of the traction side of the REESS and what is not. For example, is the charging inlet part of the “traction side” of the REESS?
Perhaps a designated location when not specified by the manufacturer would help improving the clarity of the section.

## On the topic of section 13.2 & 13.3 related to the thermal event warning system:

Given the intent of the 13.2-13.3 section, which is to evaluate the performance of the warning system in case of a single cell thermal runaway, the proposed test raises significant safety concerns.

Opening and modifying a high voltage energy source is dangerous, as these components are designed not to be modified. The method specified to initiate a thermal runaway is highly dangerous considering the amount of energy in a REESS, especially for a heavy vehicle such as a bus. Moreover, most manufacturers are not allowed to disassemble or modify their battery system.

Going past that first concern, while Prevost understands the intent of FMVSS305A to evaluate safety at the vehicle level, imposing a complete vehicle to perform the test significantly increases health & safety risks in case of an incident during the certification. Finding a third

party that will have the infrastructure to perform this kind of test on a heavy vehicle (truck or bus) will be a challenge, due to the safety concerns. Installations & safety measures would have to be considerably more extensive than those required to perform the test at the component level (Battery & harness).

For these reasons, since the intent of section 13.2 and 13.3 is to evaluate the performance of the warning system, Prevost would recommend that the test be modified to allow the manufacturers to evaluate 13.2 & 13.3 through an equivalent driver cluster, wiring harness and REESS system. Doing so will minimize the safety risks of performing the performance evaluation while still maintaining the relevance of evaluating the warning system.

## On the topic of section 14 and the "driving through standing water" test:

Since NHTSA suggests improving vehicle washing test by adding the underside of the vehicle to the scope of the test, the driving through standing water tests does not seem to add value to the safety of the vehicle, as the washing test with the underbody included will be a harsher requirement than driving through 10cm of water at 20kph.

The proposal of extending the vehicle washing test to the underside of the vehicle does add value to the regulation, as explained in the *Notice of proposed rulemaking*. It could also permit to consolidate the two tests (14.1 and 14.2) in a single test, leading to reduced financial impact of certification on manufacturers.

Since facilities providing the infrastructures to perform the driving through standing water test will be scarce, this test would add significant costs while not improving vehicle safety over the improved test specified in section 14.1.

Prevost would therefore propose to only keep the improved vehicle washing test.

As the finalization of the regulation goes on, Prevost encourages NHTSA to reach out to manufacturers to learn more about how safety has been addressed so far by manufacturers and seek potential best practices out of it.

Sincerely,

Hugues Morneau, P. Eng
*Vice President of Product Management, Strategic Planning & Regulatory Affairs*