

June 14, 2024  
Our Ref: W-2368-A

Docket Management Facility  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
West Building, Ground Floor, Room W12-140  
Washington, D.C. 20590-0001

**Re: Docket Number NHTSA-2024-0012**  
**FMVSS No. 305a Electric-Powered Vehicles; Notice of Proposed Rulemaking; 89 FR 26704**

Dear Ms. Shulman:

Nissan North America, Inc. on its behalf and on behalf of Nissan Motor Company, Ltd., of Yokohama, Japan ("Nissan"), hereby transmits the enclosed comments in response to the above Notice of Proposed Rulemaking (NPRM) published on April 15, 2024. The NPRM proposes to establish Federal Motor Vehicle Safety Standard (FMVSS) No. 305a to replace FMVSS No. 305, "Electric-powered vehicles: Electrolyte spillage and electrical shock protection."

Please note that we are submitting this information with a request for confidential treatment per 49 CFR Part 512. Should you or your staff have any questions or require additional information, please contact me at (615) 725-5803.

Sincerely,



Kevin Cheaney  
Senior Manager, Innovation Policy & Safety  
Government Affairs  
Nissan North America, Inc.

**COMMENTS OF NISSAN MOTOR CO., LTD. TO THE  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
Notice of Proposed Rulemaking (NPRM); 49 CFR Part 571  
Federal Motor Vehicle Safety Standard  
FMVSS No. 305a Electric-Powered Vehicles: Electric Powertrain  
Integrity Global Technical Regulation No. 20, Incorporation by Reference  
89 FR 26704; April 15, 2024 (Docket No. NHTSA-2024-0012)**

Nissan Motor Co., Ltd. (“Nissan”) offers the following comments in response to the notice of proposed rulemaking (NPRM) which seeks to establish Federal Motor Vehicle Safety Standard (FMVSS) No. 305a to replace FMVSS No. 305, “Electric-powered vehicles: Electrolyte spillage and electrical shock protection.”

Nissan is a member of the Alliance for Automotive Innovation (“Auto Innovators”) and generally supports their comments. However, Nissan would like to place particular emphasis on the following critical points:

1. Vehicle controls managing REESS safe operations

a. Test methods

NHTSA proposes to include the following provisions. in FMVSS No. 305a. Although Nissan generally supports NHTSA’s proposal, Nissan also urges NHTSA to offer a compliance option for evaluating performance at the battery pack component level. This option would be applicable if manufacturer can demonstrate that the test results reasonably reflect the safety performance of the complete REESS under the same conditions. This approach aligns with the methodology outlined in ECE R100. During discussion with NHTSA in 2021, Nissan emphasized its belief that component tests could effectively ensure compliance with safety requirements. These tests would cover:

- Overcharge test
- Over-discharge test
- Overcurrent test
- Over-temperature test
- External Short circuit test
- Thermal Propagation test

In regard to the overcharge test, Nissan requests that NHTSA permits State of Charge (SOC) adjustment to correspond with ECE R100-03, aiming for SOC to be “around the middle of the normal operating voltage.” This adjustment is crucial as hybrid vehicles such as Nissan e-POWER vehicle may fall outside the range of normal use if the REESS initially set between 90 to 95 percent SOC. Similarly, Nissan requests SOC adjustment alignment with ECE R100-03 when conducting the external short circuit test.

## 2. REESS thermal propagation safety.

- a. Thermal runaway due to internal short in a single cell of the REESS.

Nissan suggests that NHTSA provide greater specificity in describing “the safety risks” outlined in S13.1. We propose adding a detailed description of safety risks “such as fire, explosion, or smoke” to enhance clarity regarding the severity of these risks. This adjustment would also align with the guidelines set forth in GTR 20, ensuring consistency and comprehensiveness in addressing safety risks of thermal propagation.

*S13.1 (c) Part II: Safety risk assessment and mitigation process. This part of the documentation shall identify thermal propagation safety risk mitigation strategies for identified conditions leading to single cell thermal runaway in Part I and include:*

*(1) A description of the safety risks such as fire, explosion or smoke and safety risk mitigation strategies, and how these were identified, and*

b. Warning in the case of thermal event in REESS.

Nissan advocates for distinct definitions of "Thermal propagation" and "Thermal event." Consequently, we propose that the sections "S13.2 and S13.3 Warning in the case of thermal event in REESS" should not fall under "S13 REESS thermal propagation safety." This separation would ensure clarity and precision in addressing thermal safety risks within the documentation.

Nissan believe that it is excessive to require a peak temperature of 600 °C in the compliance test for warnings during a thermal event in REESS. The upper temperature limit will vary based on the performance characteristics of each battery. As an alternative, Nissan suggests replacing the 600 °C threshold with a condition based on when the REESS reaches its upper temperature limit during normal use. Additionally, we propose implementing a process to determine the testing temperature, such as adhering to the manufacturer's specifications. Nissan believes that aligning these requirements with those outlined in GTR 20, a documentation standard, would ensure consistency and relevance in addressing thermal safety risks.

### 3. Water exposure safety.

Nissan does not oppose the inclusion of these tests in FMVSS 305a and understands that NHTSA aims to address concerns related to hurricanes. However, the addition of salt to water does not significantly impact the evaluation of battery sealing performance. While sealing against saltwater may affect rust prevention durability, Nissan contends that the proposed test procedures do not adequately represent short-term effects.

Nissan also requests that NHTSA consider allowing a compliance option to harmonize this test procedure with UN R100.03.

### 4. Low State-of-Charge (SOC) Telltale.

Nissan agrees with NHTSA's decision to exclude this GTR No. 20 requirement. Typically, manufacturers provide state of charge information to drivers, rendering regulatory intervention unnecessary in this aspect of performance.