



U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

MAY 13 2013

Mr. Patrick M. Brady
Assistant Director, Hazardous Materials
BNSF Railway
4200 Deen Road
Fort Worth, TX 76106

Dear Mr. Brady:

The Federal Railroad Administration (FRA) understands that BNSF Railway (BNSF) is planning to conduct testing to determine if the use of Natural Gas, Refrigerated Liquid, 2.1, UN 1972 (LNG) is a viable fuel source for locomotives. In connection with this planned testing, BNSF has requested (1) an interpretation of the applicability of the Federal Hazardous Materials Regulations (HMR) (Title 49 Code of Regulations (CFR) Parts 171–180) to fuel tenders supplying diesel or LNG fuel to locomotives, and (2) FRA approval pursuant to 49 CFR Sections 174.63 to transport LNG in intermodal portable tanks in container-on-flatcar service. This letter responds to your request for an interpretation of the applicability of the HMR to fuel tenders supplying fuel to railroad locomotives. FRA will respond separately to your request for approval pursuant to 49 CFR § 174.63. Since the requested interpretation relates to the HMR, which are promulgated by the Pipeline and Hazardous Materials Safety Administration (PHMSA), FRA has coordinated its response with that agency.

Although LNG is a regulated hazardous material under the Federal hazardous materials transportation law, that law applies to the transportation of hazardous materials in commerce. See 49 U.S.C. § 5103 and 49 CFR § 171.1(c). Consistent with the statute and the HMR, PHMSA has consistently found that a fuel tank used only for supplying fuel to operate a transport vehicle or its auxiliary equipment is not subject to the HMR (see 49 CFR § 171.8). Accordingly, both PHMSA and FRA have concluded that the testing currently planned by BNSF is not within the scope of the HMR. More generally, the use of a fuel tender supplying fuel (whether it be diesel or another regulated hazardous material) to locomotives is not within the scope of the HMR and is, therefore, not subject to those regulations. The agencies note, however, that if the tender equipment needs to move via rail while the equipment is not serving as a tender (i.e., not supplying fuel to an accompanying locomotive), the equipment would be considered “in transportation” and subject to the HMR. See 49 CFR § 171.8.

In accordance with FRA's overall rail safety authority, FRA has the authority to regulate vehicles that serve as locomotive tenders. As such, any vehicle that carries LNG or any other material being used to fuel attending locomotives is subject to FRA's statutory and regulatory authority. See 49 U.S.C. §§ 20701–20703 (formerly known as the Locomotive Inspection Act). The Locomotive Inspection Act, in part, prohibits a railroad from using a locomotive or tender unless the equipment is “in proper condition and safe to operate without unnecessary danger of personal injury.” Accordingly, BNSF must ensure that both the locomotive and the equipment serving as locomotive tenders are safe to prior to initiating the test. See 49 CFR § 229.7. Therefore, the safety rationale supporting the regulatory requirements contained in FRA's rail safety regulations concerning locomotives, locomotive tenders, freight cars, and safety appliances (including, but not limited to, 49 CFR Parts 215, 229, 230, and 231) must be considered in evaluating the safety of the equipment and its proposed operation, and in determining compliance with the statute. Although the HMR are not directly applicable to the proposed equipment and its operations, the safety rationale underlying those regulations (including, but not limited to, the operational and packaging standards of the HMR) must also be considered. There are specific statutory and regulatory requirements related to safety appliances on all vehicles, including locomotive tenders, which must be considered. See 49 U.S.C. §§ 20302 and 20303 and 49 CFR Part 231.

FRA expects that prior to initiating any testing of the new dual-fuel locomotives and tender vehicles, BNSF will conduct, and provide to FRA for its approval, a comprehensive safety analysis identifying the risks of the operation and measures put in place to mitigate those risks. At a minimum, the analysis must address the following inherent risks:

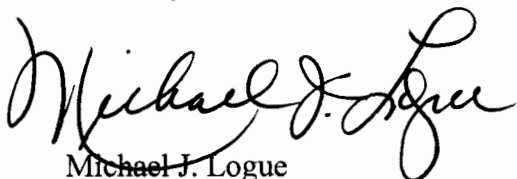
- The design of the natural gas tender, including the crashworthiness of the packaging, as well as all connections to the locomotives being fueled.
- The placement and operation of a tender containing LNG and operating as a potential ignition source adjacent to an occupied locomotive.
- The ability of first responders to identify the contents of the tender vehicle in the event of an accident.
- The heat leak rate into the LNG storage tank (including the effect of sloshing) and the consequent pressure buildup inside the tank.
- The release of flammable vapors into the atmosphere to relieve tank pressure.
- Mechanical issues related to the equipment.

FRA and PHMSA would like to partner with BNSF to ensure that the testing of the proposed new dual-fuel locomotives and their accompanying tenders is carried out safely and in accordance with existing statutory and regulatory requirements. The conditions applicable to any testing initially approved by FRA will be subject to change based on the results of the testing or information gathered from the testing. Further, the use of the proposed new equipment in regular revenue service may be subject to future regulatory action.

FRA applauds BNSF's efforts to identify viable alternative fuel sources for locomotives and address the issue of locomotive emissions through the use of new and innovative technology.

FRA also appreciates the continued opportunity to participate in the LNG Locomotive Technical Advisory Group as part of the Association of American Railroads' Locomotive Committee. We look forward to working closely with BNSF to determine the feasibility of advancing this technology.

Sincerely,

A handwritten signature in black ink, reading "Michael J. Logue". The signature is written in a cursive style with a large, prominent initial "M".

Michael J. Logue

Acting Associate Administrator for Railroad Safety/Chief Safety Officer