

is like other hazardous materials currently authorized to be transported by rail in DOT-113C120W tank cars, such as Ethylene, refrigerated liquid. Like LNG, cryogenic ethylene is a flammable cryogenic material and has an established history of being transported by rail for over 50 years with very few incidents.

Pursuant to 49 C.F.R. § 172.101, methane in a cryogenic form (otherwise known as LNG) may currently be transported from any origin to any destination in an approved package, like an ISO portable tank or a DOT specification cargo tank motor vehicle (MC-338). However, the DOT-113C120W tank cars that are the subject of the special permit application are not currently approved packaging for transporting LNG by rail. Recently, U.S. production of natural gas has increased dramatically, resulting in an opportunity to replace emissions-intensive energy options, such as coal, with cleaner-burning natural gas for power generation and transportation fuels.

The U.S. Department of Energy (DOE) has acknowledged that natural gas production in the Appalachian region in particular “is expected to increase for decades to come.”<sup>1</sup> However, DOE also found that “options for natural gas producers and processors in the Marcellus/Utica region to move [natural gas liquids],” such as propane, “to other markets via pipeline remain limited, and a significant share of production moves by rail.” Natural gas that cannot move to market via pipeline must be moved in liquid state (LNG) in MC-338 cargo tanks by truck or in ISO portable tanks via highway or by rail. Transporting LNG in ISO portable tanks by rail requires an approval from FRA. Issuance of a special permit that allows ETS to utilize DOT-113C120W tank cars for LNG transportation could provide advantages over current transportation options for the reasons discussed below.

Other forms of petroleum-based gases are currently authorized to be shipped by rail in tank cars. For example, liquefied petroleum gases (LPGs) are authorized to be shipped via rail in DOT-105 DOT-112, or DOT-114 single-walled, pressurized tank cars. The DOT-113C120W tank cars that are the subject of ETS’s special permit application are double-walled tank cars specifically designed for carriage of cryogenic materials, such as LNG. DOT-113C class tank cars are currently authorized under the HMR to move other cryogenic flammable liquids, including Ethylene and Hydrogen. ETS’s special permit application requests authorization to move LNG by rail in DOT-113C120W tank cars filled to densities comparable to the maximum filling densities for cargo tanks, which transport LNG via highway, as required in 49 C.F.R. § 173.318(f)(3). In its January 2017 petition for rulemaking, the American Association of Railroads (AAR) also requested that PHMSA authorize the use of DOT-113C tank cars for LNG transportation. PHMSA determined the petition “merits consideration in a future rulemaking.”<sup>2</sup> Furthermore, Transport Canada has authorized DOT-113C120W equivalent tank cars (i.e. TC-113C120W) for transport of LNG.<sup>3</sup>

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<sup>1</sup> U.S. Department of Energy, *Natural Gas Liquids Primer With a Focus on the Appalachian Region* (June 2018).

<sup>2</sup> U.S. DOT/PHMSA – Acceptance Letter, PHMSA-2017-0020-0005, May 10, 2018.

<sup>3</sup> Section 8.6.3.4 of “Containers for Transport of Dangerous Goods by Rail, a Transport Canada Standard.” Accessed via [https://www.tc.gc.ca/eng/tdg/containers-transport-dangerous-goods-rail-transport-canada-standard.html#\\_4.7\\_Schedule\\_2](https://www.tc.gc.ca/eng/tdg/containers-transport-dangerous-goods-rail-transport-canada-standard.html#_4.7_Schedule_2) on March 4, 2019.