

The special permit would allow ETS to move LNG by rail in DOT-113C120W tank cars from sources to customers via existing rail corridors. The principal impacts from issuance of the special permit would be associated with moving an additional commodity by rail: fuel efficiency, engine emissions, venting of natural gas, and impacts from possible loss of containment events. What follows will review and assess these impacts.

According to the applicant, using ISO portable tanks to transport LNG for this project is economically infeasible (or undesirable) due to the added infrastructure and operations costs associated with intermodal handling of containers.⁷ The use of ISO tanks would require additional facilities for handling the ISO tanks on truck chassis, loading, and unloading at intermodal yards. Additionally, approximately three to four times the number of ISO portable tanks or MC-338 cargo tanks would be required to ship the equivalent volume of LNG in DOT-113C120W tank cars requested by permit. Therefore, this alternative was eliminated from full discussion.

4 Environmental and Human Health Impacts of the Proposed Action and Alternatives

Both the proposed action alternative and the no action alternative could result in impacts to the environment and pose risks to human health and safety. Both the MC-338 and the DOT-113C120W store LNG in specialized insulated containers that have the potential for LNG emissions through venting, although venting is not authorized during normal operation in either case. Impacts from potential loss of containment from both transportation methods are of the utmost concern. This analysis will focus on safety and risk of the transportation of the hazardous material LNG in DOT-113C120W tank cars. This analysis will also discuss the environmental impacts related to fuel efficiency, and engine emissions

Safety and Risk

LNG poses certain potential hazards as a cryogenic liquefied flammable gas. LNG has a shipping identification number of UN1972 for 'Methane, refrigerated liquid.' The liquefaction of natural gas is achieved by cooling it to its normal boiling point, -162° C (-260° F), at atmospheric pressure. At the normal boiling temperature, LNG does not need to be stored under pressure, but it must be insulated to avoid boiling due to heat leakage into the liquid. As the liquid boils at atmospheric pressure, it does so at its constant, boiling temperature of -162° C (-260° F). Heat leakage occurs even in highly insulated vessels and over long periods of storage could amount to substantial vaporization of the liquid. Also, accidents leading to failures in the insulation systems result in rapid heat leak into the liquid. Heat leak into a closed vessel results in an increase in the pressure within the vessel. When the internal tank pressure exceeds the set-to-discharge-pressure of the pressure relief valve, LNG vapors will be released into the atmosphere. No release of LNG vapor to the environment is allowed during the normal transportation of LNG in tank cars.

⁷ Florida East Coast Railway received an approval from FRA to transport LNG for ETS in ISO tanks from Port Miami, FL to Fort Everglades, FL. ETS does not hold this approval, nor does the approval apply on a nation-wide basis.