

Comparison of risk metrics for LNG ISOs and LPG rail car mainline train movements.

Risk Metric	Train Speed < 25 mph		Train Speed from 25 – 60 mph	
	LNG	LPG	LNG	LPG
SR Integral (total risk, yr ⁻¹)	(b) (4)			
Maximum IR (yr ⁻¹)	(b) (4)			
Maximum Distance to Zone 1 - 1×10 ⁻⁵ IR (ft)	(b)			
Maximum Distance to Zone 2 - 1×10 ⁻⁶ IR (ft)	(b)			
Maximum Distance to Zone 3 - 3×10 ⁻⁷ IR (ft)	(b)			

Comparison of risk metrics for LNG ISOs and LPG rail car movements and LNG ISO lifting in the Hialeah Yard.

Risk Metric	LNG	LPG
SR Integral (total risk, yr ⁻¹)	(b) (4)	
Maximum IR (yr ⁻¹)	(b) (4)	
Maximum Distance to Zone 1 - 1×10 ⁻⁵ IR (ft)	(b)	
Maximum Distance to Zone 2 - 1×10 ⁻⁶ IR (ft)	(b)	
Maximum Distance to Zone 3 - 3×10 ⁻⁷ IR (ft)	(b)	

E.2.5 Sensitive Targets for Routes 1 and 2

The FRA requested that FECR perform an analysis of potentially sensitive establishments along the proposed railway routes. There is no current regulatory quantitative risk criteria for Individual Risk or Societal Risk of LNG transportation by rail, and the criteria used here were developed from those applicable to stationary LNG plants. For stationary LNG plants, NFPA 59A does not permit sensitive establishments, such as churches, schools, hospitals, and major public assembly areas, to be located within an Individual Risk contour greater than 3×10⁻⁷ per year (called Zone 3).² There are many differences in the hazards and risk profile between a stationary facility and a transportation activity. Acceptable quantitative risk criteria for transportation of hazardous materials typically represent higher risk levels than stationary facilities. However, the Zone 3 risk from NFPA 59A was used as the benchmark for evaluation of risk to offsite populations.

² NFPA 59A (2016) *Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG)*, §15.10.1