

8.2.2 LNG versus LPG Yard/Intermodal Facility Risks

The baseline train configuration C-1 was considered for LNG ISOs along with a similar configuration for the LPG rail cars (three cars blocked in a sequence starting at train position 11). Only the Hialeah Yard was considered for this comparison, as this is the highest risk yard of the four considered (Bowden, Port of Miami, and Port Everglades being the other yards). A summary of the risk metrics for the LNG and LPG Hialeah Yard movement and handling cases are provided in Table 47. The SR Integrals are approximately the same order of magnitude for LNG and LPG.

Table 47. Comparison of risk metrics for LNG ISO car and LPG rail car movement and LNG ISO lifting in the Hialeah Yard. Note that there are no Lift On/Lift Off activities associated with the LPG cars.

Risk Metric	Hialeah Yard	
	LNG	LPG
SR Integral (total risk, yr ⁻¹)	1.10×10 ⁻³	7.18×10 ⁻⁴
Maximum IR (yr ⁻¹)	6.39×10 ⁻⁵	4.74×10 ⁻⁶
Maximum Distance to Zone 1 - 1×10 ⁻⁵ IR (ft)	410 ⁶⁷	N/A
Maximum Distance to Zone 2 - 1×10 ⁻⁶ IR (ft)	515	560
Maximum Distance to Zone 3 - 3×10 ⁻⁷ IR (ft)	540	815

The IR contours for the LPG yard movements are overlaid on a satellite image of the Hialeah Yard with the corresponding contours for LNG ISO train configuration C-1 in Figure 57. Comparison of the Hialeah Yard IR contours for LPG and LNG indicates that the distances to the Zone 2 - 1×10⁻⁶ yr⁻¹ and Zone 3 - 3×10⁻⁷ yr⁻¹ contours are larger for LPG than for LNG (consistent with the findings from the mainline analysis) for train movement within the yard. The absence of a Zone 1 - 1×10⁻⁵ yr⁻¹ contour for the LPG scenario is due to the lack of Lift On/Lift Off activities and a corresponding risk component for LPG rail cars. Thus, the risks associated with yard movements and activities of LNG ISOs are similar to yard movement of LPG rail cars on an energy-equivalent basis.

⁶⁷ The distance to these contours for LNG are associated with the lifting-related risk since that is the maximum contribution to the risk.