The risk results for C-1 are discussed above in Section 8.1.3. Given this analysis, the IR and the SR for the Bowden Yard align with the fixed facility IR and SR acceptability criteria stated in NFPA 59A (see Table 1 and Figure 1) for both train configurations C-1 and C-4. Since train configuration C-1 represents the most significant risk of all configurations considered, it is anticipated that the other train configurations will have similar or less risk.

Table 53. Bowden Yard - summary of the risk metrics for LNG ISO car movement and lifting for multiple train configurations.

Risk Metric	Bowden Yard	
	C-1	C-4
SR Integral (total risk)	2.27×10^{-4}	1.95×10^{-4}
Maximum IR	4.20×10^{-5}	4.17×10^{-5}
Risk Reduction	--	14.1%

8.4 Sensitive Target Analysis

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 (IR) greater than 3×10^{-7} per year.[72] 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.

The full list of potentially sensitive establishments and satellite maps depicting the Zone 3 (3×10^{-7} yr^{-1}) IR contours along the routes are provided in Appendix G. In the appendix, Tables G-1 and G-2 list potentially sensitive establishments along Routes 1 and 2, respectively. The satellite maps are provided as collages for each route and individual maps covering approximately one-mile sections of the routes.

[72] Chapter 15.10.1 of NFPA 59A (2016) *Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG).*