The release scenario probabilities were combined with the probabilities of derailment for multiple cars in an event tree model to estimate the quantity released for each distinct outcome in the accident model.

LOC probability from PHMSA pressure tank car incident data and equivalent release scenario for LNG ISOs.

Quantity Released in gallons	Probability	Release Scenario
=< 100	0.958	No Release
100 < x =< 1,000	0.014	½-inch Leak
1,000 < x =< 30,000	0.025	2-inch Leak
> 30,000	0.003	Catastrophic

E.2.2 Mainline Risk

The risk posed by the LNG ISOs along the mainline was evaluated by making conservative assumptions in order to bound the maximum risk of all route options. The results are reported for the highest mainline population density value of 11,800 people per square mile. For regions of the mainline with lower population, the calculated risk will be less than that presented. Two speed ranges, low speed <25 mph and high speed ≥25 mph to ≤60 mph, were applied in the model to demonstrate the effects of train speed restrictions. Seven different train configurations were evaluated to demonstrate the effects of blocking LNG ISOs into sequential car groupings. For example, the baseline case (C-1) placed (b) LNG ISOs in sequence from train position (b to (b) This configuration poses the highest risk since all LNG ISOs are in sequence, all may be involved in an individual derailment (high speed only), and the highest probability of derailment is at the front of the train. As a comparison, train configuration C-2 places the (b) LNG ISOs in sequence from train position (b to (b) The table below compares the calculated risk metrics for low speed and high speed movement of these train configurations along the mainline when assuming the highest population density. For slow speed train movements, the Zone 3 risk level is never reached in the analysis, and for high speed train movements, the Zone 2 risk level is never reached.