LNG DOT-113 Movement Event Trees
Mainline Low Speed (≤ 25 mph)

Train Accident Rate (accidents/yr)	Derailment Probability	Probability of Number of LNG DOT-113 cars Involved in Derailment	Outcome: For a Release Rate (lb/s) of …	Outcome: The Probability is…		Calculated Outcome Frequency (/yr)
8.83E-04	6.40E-01	2.48E-02	0	9.55E-01	=	**1.34E-05**
		1 car	3.60	1.60E-02	=	**2.24E-07**
			58.6	2.60E-02	=	**3.64E-07**
			1 CR	3.00E-03	=	**4.20E-08**
		2.34E-02	0	9.12E-01	=	**1.21E-05**
		2 cars	3.60	3.06E-02	=	**4.05E-07**
			7.20	2.56E-04	=	**3.39E-09**
			60.4	5.05E-02	=	**6.69E-07**
			117	6.76E-04	=	**8.94E-09**
			1 CR	5.98E-03	=	**7.91E-08**
			2 CR	9.00E-06	=	**1.19E-10**
		2.23E-02	0	8.71E-01	=	**1.10E-05**
		3 cars	5.40	4.45E-02	=	**5.61E-07**
			10.8	4.10E-06	=	**5.16E-11**
			62.2	7.35E-02	=	**9.26E-07**
			148	1.99E-03	=	**2.50E-08**
			1 CR	8.95E-03	=	**1.13E-07**
			2 CR	2.69E-05	=	**3.39E-10**
		1.91E-02	0	8.32E-01	=	**8.99E-06**
		4 cars	5.40	5.71E-02	=	**6.17E-07**
			12.6	1.57E-05	=	**1.69E-10**
			64.0	9.52E-02	=	**1.03E-06**
			178	3.89E-03	=	**4.20E-08**
			1 CR	1.19E-02	=	**1.29E-07**
			2 CR	5.37E-05	=	**5.80E-10**
			3 CR	1.08E-07	=	**1.17E-12**
		6.09E-01	0	7.94E-01	=	**2.73E-04**
		5 cars	5.40	6.87E-02	=	**2.36E-05**
			14.4	3.77E-05	=	**1.30E-08**
			65.8	1.15E-01	=	**3.97E-05**
			180	6.36E-03	=	**2.19E-06**
			1 CR	1.48E-02	=	**5.09E-06**
			2 CR	8.92E-05	=	**3.07E-08**
			3 CR	2.68E-07	=	**9.22E-11**

* - The probability that no LNG DOT-113 cars are involved in an accident can be determined by summing the probabilities for 1-X derailments and substracting that value from 1
** - CR = Catastrophic rupture of the DOT-113 car(s)
***- Shaded cells are descriptors and are not used in the outcome frequency values