

LNG DOT-113 Movement Event Trees
Mainline High Speed (25 - 50 mph)

Train Accident Rate (accidents/yr)	Derailment Probability	Probability of Number of LNG DOT-113 cars Involved in Derailment	Outcome		Calculated Outcome Frequency (/yr)	
			For a Release Rate (lb/s) of ...	The Probability is...		
8.83E-04	5.32E-01	1.34E-01 1 car	0	9.55E-01	=	6.03E-05
			3.60	1.60E-02	=	1.01E-06
			58.6	2.60E-02	=	1.64E-06
			1 CR	3.00E-03	=	1.89E-07
		2.17E-02 2 cars	0	9.12E-01	=	9.31E-06
			3.60	3.06E-02	=	3.12E-07
			7.20	2.56E-04	=	2.61E-09
			60.4	5.05E-02	=	5.16E-07
			117	6.76E-04	=	6.90E-09
		3.06E-02 3 cars	1 CR	5.98E-03	=	6.10E-08
			2 CR	9.00E-06	=	9.18E-11
0	8.71E-01		=	1.25E-05		
5.40	4.45E-02		=	6.40E-07		
1.54E-02 4 cars	10.8	4.10E-06	=	5.89E-11		
	62.2	7.35E-02	=	1.06E-06		
	148	1.99E-03	=	2.86E-08		
	1 CR	8.95E-03	=	1.29E-07		
	2 CR	2.69E-05	=	3.86E-10		
1.60E-02 5 cars	0	8.32E-01	=	6.03E-06		
	5.40	5.71E-02	=	4.14E-07		
	12.6	1.57E-05	=	1.14E-10		
	64.0	9.52E-02	=	6.90E-07		
	178	3.89E-03	=	2.82E-08		
1.40E-02 6 cars	1 CR	1.19E-02	=	8.63E-08		
	2 CR	5.37E-05	=	3.89E-10		
	3 CR	1.08E-07	=	7.83E-13		
	0	7.94E-01	=	5.97E-06		
	5.40	6.87E-02	=	5.17E-07		
1.49E-02 7 cars	14.4	3.77E-05	=	2.84E-10		
	65.8	1.15E-01	=	8.68E-07		
	180	6.36E-03	=	4.78E-08		
	1 CR	1.48E-02	=	1.11E-07		
	2 CR	8.92E-05	=	6.71E-10		
1.23E-02 8 cars	3 CR	2.68E-07	=	2.01E-12		
	0	7.59E-01	=	4.99E-06		
	5.40	7.95E-02	=	5.23E-07		
	16.2	7.23E-05	=	4.76E-10		
	67.6	1.35E-01	=	8.86E-07		
9.43E-03 9 cars	155	9.33E-03	=	6.14E-08		
	266	6.53E-06	=	4.30E-11		
	1 CR	1.77E-02	=	1.16E-07		
	2 CR	1.33E-04	=	8.75E-10		
	3 CR	5.35E-07	=	3.52E-12		
1.40E-02 10 cars	0	7.24E-01	=	5.05E-06		
	7.20	8.94E-02	=	6.24E-07		
	19.8	2.02E-06	=	1.41E-11		
	64.0	1.52E-01	=	1.06E-06		
	76.6	1.64E-07	=	1.15E-12		
7.18E-01 11 cars	151	1.28E-02	=	8.97E-08		
	262	1.48E-05	=	1.04E-10		
	1 CR	2.06E-02	=	1.44E-07		
	2 CR	1.86E-04	=	1.30E-09		
	3 CR	9.34E-07	=	6.52E-12		
9.43E-03 9 cars	0	6.92E-01	=	3.99E-06		
	7.20	9.83E-02	=	5.68E-07		
	21.6	3.87E-06	=	2.23E-11		
	71.2	1.70E-01	=	9.79E-07		
	130	1.59E-02	=	9.18E-08		
1.40E-02 10 cars	218	8.78E-04	=	5.07E-09		
	293	5.80E-07	=	3.35E-12		
	1 CR	2.35E-02	=	1.36E-07		
	2 CR	2.47E-04	=	1.43E-09		
	3 CR	1.49E-06	=	8.60E-12		
9.43E-03 9 cars	0	6.61E-01	=	2.93E-06		
	7.20	1.07E-01	=	4.72E-07		
	18.0	6.67E-06	=	2.96E-11		
	67.6	1.85E-01	=	8.20E-07		
	160	2.10E-02	=	9.32E-08		
1.40E-02 10 cars	207	4.58E-05	=	2.03E-10		
	325	5.32E-06	=	2.36E-11		
	1 CR	2.64E-02	=	1.17E-07		
	2 CR	3.17E-04	=	1.40E-09		
	3 CR	2.23E-06	=	9.88E-12		
7.18E-01 11 cars	0	6.31E-01	=	4.15E-06		
	7.20	1.14E-01	=	7.52E-07		
	18.0	1.06E-05	=	6.98E-11		
	65.8	2.00E-01	=	1.31E-06		
	134	2.40E-02	=	1.58E-07		
9.43E-03 9 cars	221	1.80E-03	=	1.18E-08		
	330	2.64E-06	=	1.74E-11		
	1 CR	2.92E-02	=	1.92E-07		
	2 CR	3.95E-04	=	2.60E-09		
	3 CR	3.17E-06	=	2.09E-11		
9.43E-03 9 cars	0	6.03E-01	=	2.03E-04		
	7.20	1.21E-01	=	4.07E-05		
	18.0	1.61E-05	=	5.42E-09		
	67.6	2.13E-01	=	7.17E-05		
	134	2.85E-02	=	9.61E-06		
9.43E-03 9 cars	221	2.41E-03	=	8.14E-07		
	330	4.72E-06	=	1.59E-09		
	1 CR	3.20E-02	=	1.08E-05		
	2 CR	4.82E-04	=	1.63E-07		
	3 CR	4.35E-06	=	1.47E-09		

* - CR = Catastrophic rupture of the DOT-113 car(s)
 **- Shaded cells are descriptors and are not used in the outcome frequency values