

Table 6.2.1-6—Containment Response to Hot Leg Breaks

Variable	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 7A	Case 7C	Case 32	Case 45 ⁴	Case 46 ^{4,5}
Short Term Analysis Results												
Peak Pressure (psia)	66.45	66.45	65.80	65.80	65.60	65.51	66.53	66.69	66.26	69.7	46.82	46.63
Time of Peak Pressure (s)	32.0	32.0	24.0	24.0	25.0	28.0	25.0	31.0	22.0035	26.6	12010	12000
Peak Vapor Temp. (°F) ⁶	273.708	273.708	272.842	272.841	272.575	272.457	273.821	273.031	273.46	311.8	254.9	254.9
Time of Peak Vapor Temp. (s)	32.0	32.0	24.0	24.0	25.0	27.0	25.0	31.0	22.0035	23.3	11910	11930
Long Term Analysis Results												
Peak Pressure (psia)	-	-	-	-	-	-	-	-	-	48.0	-	-
Time of Peak Pressure (s)	-	-	-	-	-	-	-	-	-	7900	-	-
Peak Vapor Temp. (°F) ⁶	-	-	-	-	-	-	-	-	-	311.8	-	-
Time of Peak Vapor Temp. (s)	-	-	-	-	-	-	-	-	-	23.3	-	-
Case Description												
Break Configuration ¹	DEG, Cd=1.0	DEG, Cd=1.0	DEG, Cd=1.0	DEG, Cd=1.0	DEG, Cd=0.8	DEG, Cd=0.6	DES, Cd=0.8	DEG, Cd=1.0	DES, Cd=1.0	DEG Cd=1.0	0.0491 ft ² (3 in)	0.0491 ft ² (3 in)
ECCS	Max	Min	Min	Max	Min	Min	Min	Min	Min	Min	Min	Min
Pressure (psia)	60.0	60.0	60.0	60.0	60.0	60.0	60.0	14.7	14.7	Note 3	Note 3	Note 3
IRWST Temp. (°F)	122	122	122	122	122	122	122	122	122	122	122	122

Notes:

1. DEG = double-ended guillotine; DES = double-ended split
2. Cases 1–7C are based on a single-node containment model for short-term analysis. Case 32 was analyzed with a multi-node subdivided containment model to identify the limiting long-term peak pressure.
3. Containment pressure used in the M&E energy calculation matched the predicted GOTHIC pressure profile.
4. Cases 45–46 are SBLOCA analyses are included for the development of EQ profiles.
5. Rupture foils assumed to remain closed.
6. Peak vapor temperature listed is located in the break room.

Table 6.2.1-7—Containment Response Cold Leg Pump Suction Breaks

Variable	Case 8	Case 9	Case 10	Case 10B	Case 11	Case 12	Case 13	Case 14	Case 14B	Case 14C	Case 14D	Case 14E	Case 33	Case 34	Case 36	Case 37	Case 38	Case 39	Case 40
Short Term Analysis Results																			
Peak Pressure (psia)	64.6	64.6	65.8	65.8	65.8	66.0	65.9	66.3	66.3	66.2	66.4	66.5	64.02	64.02	64.13	64.04	63.31	64.2	66.44
Time of Peak Pressure (s)	36.0	36.0	38.0	38.0	38.0	39.0	40.0	40.0	40.0	40.0	41.0	40.0	27.73	27.73	27.43	27.93	27.93	28.03	27.98
Peak Vapor Temp. (°F) ⁴	271.2	271.2	272.8	272.9	272.8	273.0	273.0	273.5	273.6	273.4	273.6	273.7	326.2	314.5	309.2	317.6	309.2	308.0	314.7
Time of Peak Vapor Temp. (s)	35.0	35.0	38.0	38.0	38.0	39.0	40.0	40.0	40.0	40.0	40.0	40.0	100.04	75.04	75.04	110.04	80.04	150.04	70.09
Long Term Analysis Results																			
Peak Pressure (psia)	-	-	-	-	-	-	-	-	-	-	-	-	63.72	67.05	66.99	67.32	67.11	66.72	69.27
Time of Peak Pressure (s)	-	-	-	-	-	-	-	-	-	-	-	-	3600	3600	3600	3600	3600	3600	3600
Peak Vapor Temp. (°F) ⁴	-	-	-	-	-	-	-	-	-	-	-	-	326.2	314.5	309.2	317.6	309.2	308.0	314.7
Time of Peak Vapor Temp. (s)	-	-	-	-	-	-	-	-	-	-	-	-	100.04	75.04	75.04	110.04	80.04	150.04	70.09
Case Description																			
Break Configuration ¹	DEG, Cd=1	DEG, Cd=1	DEG, Cd=1	DEG, Cd=1	DEG, Cd=1	DEG, Cd=0.8	DEG, Cd=0.6	DES, Cd=0.8	DES, Cd=0.8	DES, Cd=0.8	DES, Cd=0.8	DES, Cd=1	DEG Cd=1.0	DEG Cd=1.0	DEG Cd=1.0	DEG Cd=1.0	DEG Cd=1.0	DEG Cd=1.0	DEG Cd=1.0
ECCS	Max	Min	Min	Min	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Pressure (psia)	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	14.7	76.7	60	14.7	Note 3	Note 3	Note 3	Note 3	Note 3	Note 3	Note 3
IRWST Temp. (°F)	122	122	122	122	122	122	122	122	122	122	248	122	122	122	122	122	122	122	122

Notes:

1. DEG = double-ended guillotine; DES = double-ended split
2. Cases 8–14E are based on a single-node containment model for short-term analysis. Cases 33 through 40 were analyzed with a multi-node subdivided containment model to identify the limiting long-term peak pressure.
3. Containment pressure used in the M&E energy calculation matched the predicted GOTHIC pressure profile.
4. Peak vapor temperature listed is located in the break room.

Table 6.2.1-8—Containment Response Cold Leg Pump Discharge Breaks

Variable	Case 15	Case 16	Case 17	Case 18	Case 19	Case 20	Case 21	Case 22	Case 23	Case 24	Case 25	Case 26	Case 27	Case 28	Case 29	Case 30	Case 31	Case 41	Case 42 ⁴	Case 43 ⁴	Case 44 ⁴
Short Term Analysis Results																					
Peak Pressure (psia)	63.77	63.77	63.69	63.69	63.69	63.69	63.82	64.30	63.41	63.92	64.85	65.17	64.91	64.95	64.98	65.37	65.38	65.44	63.52	61.99	49.21
Time of Peak Pressure (s)	24	24	25	25	25	25	26	25	27	28	24	25	24	25	25	24	25	23.92	1790	6131	7000
Peak Vapor Temp. (°F) ⁵	270.04	270.04	269.93	269.93	269.93	269.93	270.11	270.77	269.53	270.24	271.52	271.96	271.61	271.66	271.71	272.24	272.25	344.9	291.8	277.4	258.5
Time of Peak Vapor Temp. (s)	24	24	25	25	25	25	26	25	27	28	24	25	24	25	24	24	25	80	1230	6849	7000
Long Term Analysis Results																					
Peak Pressure (psia)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68.4	-	-	-
Time of Peak Pressure (s)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1860	-	-	-
Peak Vapor Temp. (°F) ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	344.9	-	-	-
Time of Peak Vapor Temp. (s)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-
Case Description																					
Break Configuration ¹	DEG C _d =1	DEG C _d =1	DEG C _d =1	DEG C _d =1	DEG C _d =1	DEG C _d =1	DEG C _d =.8	DES C _d =.8	DES C _d =.6	DEG C _d =.6	DES C _d =1	DES C _d =1	DES C _d =1	DES C _d =1	DES C _d =1	DES C _d =1	DES C _d =1	DEG Cd=1	0.5 ft ² (9 in)	0.1963 ft ² (6 in)	0.0491 ft ² (3 in)
ECCS	Max	Min	Min	Max	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Pressure (psia)	60	60	60	60	60	60	60	60	60	60	60	14.7	76.7	60	60	60	60	Note 3	Note 3	Note 3	Note 3
IRWST Temp. (°F)	122	122	122	122	122	122	122	122	122	122	122	122	122	248	122	122	170	122	122	122	122

Notes:

1. DEG = double-ended guillotine; DES = double-ended split
2. Cases 15–31 are based on a single-node containment model for short-term analysis. Case 41 was analyzed with a multi-node subdivided containment model to identify the limiting long-term peak pressure.
3. Containment pressure used in the M&E energy calculation matched the predicted GOTHIC pressure profile.
4. Cases 42–44 are SBLOCA analyses are included for the development of EQ profiles.
5. Peak vapor temperature listed is located in the break room.