

Table 6.2.1-6—Containment Response to Hot Leg Breaks

Variable	Case 1 <sup>2</sup>	Case 2 <sup>2</sup>	Case 3 <sup>2</sup>	Case 4 <sup>2</sup>	Case 5 <sup>2</sup>	Case 6 <sup>2</sup>	Case 7 <sup>2</sup>	Case 7A <sup>2</sup>	Case 7C <sup>2</sup>	Case 32 <sup>7</sup>	Case 32A <sup>7</sup>	Case 32B <sup>7</sup>	Case 32C <sup>7</sup>	Case 32D <sup>7</sup>	Case 45 <sup>4</sup>	Case 46 <sup>4,5</sup>
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	70.82	66.6	66.6	66.6	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	32.2	23.5	25.1	27.6	12010	12000
Peak Vapor Temp. (°F) <sup>6</sup>	273.708	273.708	272.842	272.841	272.575	272.457	273.821	273.031	273.46	311.8	340.8	322.2	318.9	309.9	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	32.2	14.4	15.0	15.8	11910	11930
Long Term Analysis Results																
Peak Pressure (psia)	-	-	-	-	-	-	-	-	-	48.0	48.2 <sup>8</sup>				-	-
Time of Peak Pressure (s)	-	-	-	-	-	-	-	-	-	7900	8302.5				-	-
Peak Vapor Temp. (°F)	-	-	-	-	-	-	-	-	-	311.8 <sup>6</sup>	245.5 <sup>9</sup>				-	-
Time of Peak Vapor Temp. (s)	-	-	-	-	-	-	-	-	-	23.3	8302.5				-	-
Case Description																
Break Configuration <sup>1</sup>	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	DEG Cd=1.0	DES, Cd=1.0	DES, Cd=0.8	DES, Cd=0.6	0.0491 ft <sup>2</sup> (3 in)	0.0491 ft <sup>2</sup> (3 in)
ECCS	Max	Min	Min	Max	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	14.7	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	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.
7. Analyzed with a multi-node subdivided GOTHIC containment model.
8. Peak pressure is located in containment dome volume.
9. Peak vapor temperature is located in containment dome volume.

Table 6.2.1-7—Containment Response Cold Leg Pump Suction Breaks  
Sheet 1 of 2

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) <sup>4</sup>	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) <sup>4</sup>	-	-	-	-	-	-	-	-	-	-	-	-	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 <sup>1</sup>	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

Table 6.2.1-7—Containment Response Cold Leg Pump Suction Breaks  
Sheet 2 of 2

Variable	Case 34A <sup>2,5</sup>	Case 34B <sup>2,5</sup>	Case 34C <sup>2,5</sup>	Case 34D <sup>2,5</sup>	Case 34E <sup>2,5</sup>	Case 34F <sup>2,5</sup>	Case 34G <sup>2,5</sup>	Case 34H <sup>2,5</sup>	Case 34I <sup>2,5</sup>	Case 34J <sup>2,5</sup>	Case 34K <sup>2,5</sup>	Case 34L <sup>2,5</sup>
Short Term Analysis Results												
Peak Pressure (psia) <sup>6</sup>	66.4	66.6	66.5	65.5	65.6	65.4	66.9	67.0	67.3	65.6	65.6	65.4
Time of Peak Pressure (s)	28.0	28.2	31.2	27.1	28.1	31.2	29.1	31.9	34.2	27.9	28.6	29.5
Peak Vapor Temp. (°F) <sup>7</sup>	306.1	306.1	305.2	303.9	303.8	302.5	305.7	305.3	305.0	303.6	302.9	301.9
Time of Peak Vapor Temp. (s)	24.8	25.8	27.8	24.0	24.7	26.7	26.9	27.6	29.4	25.0	25.7	27.2
Long Term Analysis Results												
Peak Pressure (psia) <sup>6</sup>	69.3	69.7	70.4	69.5	69.0	69.5	69.5	70.07	70.5	68.6	68.9	69.4
Time of Peak Pressure (s)	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
Peak Vapor Temp. (°F) <sup>7</sup>	306.1	306.1	305.2	303.9	303.8	302.5	305.7	305.3	300.6	303.6	302.9	301.9
Time of Peak Vapor Temp. (s)	24.8	25.8	27.8	24.0	24.7	26.7	26.9	27.6	34.2	25.0	25.7	27.2
Case Description												
Break Configuration <sup>1</sup>	DEG Cd=1.0	DEG Cd=0.8	DEG Cd=0.6	DEG Cd=1.0	DEG Cd=0.8	DEG Cd=0.6	DES Cd=1.0	DES Cd=0.8	DES Cd=0.6	DES Cd=1.0	DES Cd=0.8	DES Cd=0.6
ECCS	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Pressure (psia)	Note 3	Note 3	Note 3	Note 3	Note 3	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	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.
5. Analyzed with a multi-node subdivided-volume GOTHIC model.
6. Peak pressure is located in containment dome volume.
7. Peak vapor temperature is located in containment dome volume.

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

Variable	Case 15 <sup>2</sup>	Case 16 <sup>2</sup>	Case 17 <sup>2</sup>	Case 18 <sup>2</sup>	Case 19 <sup>2</sup>	Case 20 <sup>2</sup>	Case 21 <sup>2</sup>	Case 22 <sup>2</sup>	Case 23 <sup>2</sup>	Case 24 <sup>2</sup>	Case 25 <sup>2</sup>	Case 26 <sup>2</sup>	Case 27 <sup>2</sup>	Case 28 <sup>2</sup>	Case 29 <sup>2</sup>	Case 30 <sup>2</sup>	Case 31 <sup>2</sup>	Case 41 <sup>2</sup>	Case 41A <sup>6</sup>	Case 41B <sup>6</sup>	Case 41C <sup>6</sup>	Case 41D <sup>6</sup>	Case 42 <sup>4</sup>	Case 43 <sup>4</sup>	Case 44 <sup>4</sup>	
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	65.6	66.9	66.1	64.6	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	24.1	22.6	23.5	25.5	1790	6131	7000	
Peak Vapor Temp. (°F) <sup>5</sup>	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	301.8	327.5	320.2	306.2	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	25.6	12.3	13.0	13.7	1230	6849	7000	
Long Term Analysis Results																										
Peak Pressure (psia)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68.4	68.0 <sup>7</sup>	68.2 <sup>7</sup>	68.4 <sup>7</sup>	68.2 <sup>7</sup>	-	-	-	
Time of Peak Pressure (s)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1860	2340	2460	2280	2540	-	-	-	
Peak Vapor Temp. (°F) <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	344.9 <sup>5</sup>	301.8 <sup>8</sup>	327.5 <sup>8</sup>	320.2 <sup>8</sup>	306.2 <sup>8</sup>	-	-	-	
Time of Peak Vapor Temp. (s)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	25.6	12.3	13.0	13.7	-	-	-	
Case Description																										
Break Configuration <sup>1</sup>	DEG C <sub>d</sub> =1	DEG C <sub>d</sub> =1	DEG C <sub>d</sub> =1	DEG C <sub>d</sub> =1	DEG C <sub>d</sub> =1	DEG C <sub>d</sub> =1	DEG C <sub>d</sub> =0.8	DES C <sub>d</sub> =0.8	DES C <sub>d</sub> =0.6	DEG C <sub>d</sub> =0.6	DES C <sub>d</sub> =1	DES C <sub>d</sub> =1	DES C <sub>d</sub> =1	DES C <sub>d</sub> =1	DES C <sub>d</sub> =1	DES C <sub>d</sub> =1	DES C <sub>d</sub> =1	DEG C <sub>d</sub> =1	DEG C <sub>d</sub> =1.0	DES C <sub>d</sub> =1.0	DES C <sub>d</sub> =0.8	DES C <sub>d</sub> =0.6	0.5 ft <sup>2</sup> (9 in)	0.1963 ft <sup>2</sup> (6 in)	0.0491 ft <sup>2</sup> (3 in)	
ECCS	Max	Min	Min	Max	Min	Min	Min	Min	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	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	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.
6. Analyzed with a multi-node, subdivided-volume GOTHIC model.
7. Peak pressure is located in containment dome volume.
8. Peak vapor temperature is located in containment dome volume.