

NRC INSPECTION MANUAL

APOB

INSPECTION MANUAL CHAPTER 0609 APPENDIX F ATTACHMENT 8

TABLES AND PLOTS SUPPORTING THE
PHASE 2 RISK QUANTIFICATION

Effective Date: January 1, 2025

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OVERVIEW OF ATTACHMENT 8

This attachment consists of a collection of tables and plots that are used in support of a Phase 2 assessment. Various Fire Dynamics Tools (FDTs) from NUREG-1805 and a new method to calculate the time needed to heat a cable target to damage or ignition referred to as the “heat soak method” were used to generate the data that are presented in the tables and plots. To automate the process, the FDT calculations were implemented in a series of spreadsheets. The assumptions and background for these calculations is discussed in Section 06.03 of IMC 0308, Attachment 3, Appendix F.

A total of five sets of tables and plots (labeled A-F) were developed. The sets are briefly described below.

Table/Plot Set A - Vertical and Radial 98th Percentile Heat Release Rate (HRR) Zone of Influence (ZOI):

Table/Plot set A provides the vertical and radial 98th percentile HRR ZOI for fixed and transient ignition sources, and for confined liquid fuel pool fires and unconfined liquid fuel fires. It is used to screen ignition sources that cannot cause damage to various targets ((i.e., thermoset (TS) cables, thermoplastic (TP) cables, and sensitive electronics (SE)) in the fire area and that are not capable of causing fire to spread to secondary combustibles (Step 2.3.2), and to identify the damaged target set for a specified FDS 1 scenario (Step 2.5.1).

Table/Plot Set B - Minimum HRR to Create a Damaging Hot Gas Layer (HGL):

Table/Plot set B provides the minimum HRR that is needed to create damaging HGL conditions for a range of compartment sizes and different target types. It is used to screen ignition sources that are not capable of generating a damaging HGL (Step 2.3.3), and to identify scenarios involving secondary combustibles that can cause development of a damaging HGL in the fire area (Step 2.5.2). The heat soak method was not used in the development of table/plot set B, i.e., a cable is assumed damaged without delay when the plume temperature surrounding the cable or the incident radiant heat flux reaches the damage threshold. Consequently, the minimum HRR to create a damaging HGL given in the tables and plots in set B is lower than if the minimum HRR for the same target type and identical floor area and ceiling height had been calculated using the heat soak method.

Table/Plot Set C - HRR Profiles of Fires Involving Horizontal Cable Trays:

Table/Plot set C provides the combined HRR of an ignition source and a vertical stack of between one and seven horizontal cable trays as a function of time for various ignition source-cable tray configurations. This set is used in conjunction with table/plot set B to determine if and when a fire scenario involving secondary combustibles will cause a damaging HGL in the fire area (Step 2.5.2). The heat soak method was not used in the development of table/plot set C.

Table/Plot Set D - Vertical ZOI and Corresponding Damage Time versus Severity Factor (SF):

Table/Plot set D is used to conservatively estimate the SF for a target or secondary combustible located within the 98th percentile HRR vertical ZOI based on its elevation above the ignition source (Step 2.6.1). To develop table/plot set D, calculations were performed to determine the highest elevation at which a target will be damaged or a secondary combustible will ignite when exposed in the plume of an ignition source fire whose HRR profile corresponds to a specified SF. This elevation is referred to as the vertical ZOI for the specified SF and corresponding HRR

profile. Each table and plot provides the elevations corresponding to SFs ranging from 0.02 to 0.75 for one of the fixed or transient ignition sources listed in Attachment 5, located either in the open or in a corner. Table/Plot Set D also provides the time at which the target will be damaged or will ignite. This time is used in the calculation of the non-suppression probability (NSP) (Step 2.7.1).

Table/Plot Set E - Radial ZOI and Corresponding Damage Time versus SF:

Table/Plot set E is used to conservatively estimate the SF for a target or secondary combustible located within the radial ZOI for the 98th percentile HRR, based on its distance from the ignition source (Step 2.6.1). To develop table/plot set E, calculations were performed to determine the longest radial distance at which a target will be damaged or a secondary combustible will ignite when exposed to the thermal radiation from an ignition source fire whose HRR profile corresponds to a specified SF. Each table and plot provides the radial distances corresponding to SFs ranging from 0.02 to 0.75 for one of the fixed or transient ignition sources listed in Attachment 5. Table/Plot Set E also provides the time at which the target will be damaged or will ignite. This time is used in the calculation of the NSP (Step 2.7.1).

Table/Plot Set F - Detector Actuation and Sprinkler Activation Times:

Table/Plot set F consists of three subsets of tables:

- Tables to determine smoke detector actuation time as a function of the ceiling height above the fire and the radial distance between the detector and the fire (Step 2.7.2).
- Tables to determine sprinkler activation time for fixed and transient ignition source fires as a function of the ceiling height above the fire and the radial distance between the sprinkler head and the fire (Step 2.7.3).
- Tables to estimate sprinkler activation time for fires with an unknown HRR profile as a function of the ceiling height above the fire and the radial distance between the sprinkler head and the fire (Step 2.7.3).

TABLE/PLOT SET A
VERTICAL AND RADIAL 98TH PERCENTILE HRR ZOI

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Table/Plot Set A: Overview and Assumptions

Table/Plot set A provides the vertical and radial ZOI for fixed and transient ignition sources, and for confined liquid fuel pool fires and unconfined liquid fuel spill fires. It is used to screen ignition sources that cannot cause damage to **various targets** the fire area and that are not capable of causing fire to spread to secondary combustibles (Step 2.3.2), and to identify the damaged target set for a specified FDS 1 scenario (Step 2.5.1).

The assumptions and background for the calculations performed to develop the tables and plots in set A are discussed in Section 06.03.01 of IMC 0308, Attachment 3, Appendix F. The principal assumptions are as follows:

- a. Ambient air properties: It is assumed that $T_a = 77^\circ\text{F}$. This is the default value in FDT 9.
- b. Convective part of the HRR, \dot{Q}_c : A convective fraction (χ_c) of 0.70 is assumed, which is representative of transient fires and conservative for cable fires. This is the default value in FDT 9.
- c. Radiative part of the HRR, \dot{Q}_r : The radiative part of the HRR is equal to $\chi_r \dot{Q}$, where χ_r is the radiative fraction, and \dot{Q} is the HRR. Theoretically the sum of the convective and radiative fractions is equal to one, implying that χ_r should be equal to 0.3 because $\chi_c = 0.7$.
- d. HRR, \dot{Q} : Ignition source screening for **fixed** and transient **ignition sources** is based on the 98th percentile of the peak HRR, as recommended in the following **sources**:
 - i. **Electrical Enclosures: Table 7-1 in NUREG-2178, Vol. 1**
 - ii. **Motors: Table 8-1 in NUREG-2178, Vol. 2**
 - iii. **Dry Transformers: Table 8-1 in NUREG-2178, Vol. 2**
 - iv. **Generic Transients: Table 8-1 in NUREG-2233**
 - v. **Transient Combustible Control Location (TCCL) Transients: Table 8-2 in NUREG-2233**

The HRR profile parameters were obtained from the following sources:

- i. **Electrical Enclosures: Section 7-3 in NUREG-2230.**
- ii. **Motors: Section 8.3.1 in NUREG-2178, Vol. 2**
- iii. **Dry Transformers: Section 8.3.2 in NUREG-2178, Vol. 2**
- iv. **Generic Transients: Table 8-3 in NUREG-2233**
- v. **TCCL Transients: Table 8-4 in NUREG-2233**

The 98th percentile peak HRRs for **fixed and transient ignition sources** are also given in Table A5.1 in Attachment 5. The 98th percentile ZOIs for **electrical enclosures** are given in Table A.01. The 98th percentile ZOIs for **motors, dry transformers and transient combustibles** can be found in Table A.02. Tables and plots were also developed that show the ZOI as a function of fire diameter for confined pool fires involving selected liquid fuels. Similar tables and plots were developed for unconfined spill fires that show the ZOI as a function of the volume of the fuel spill.

- e. Fire diameter, D: The fire diameter of **electrical enclosures** is determined based on the assumption that the Froude number is equal to one. This assumption leads to reasonably conservative (i.e., small) fire diameters, as shown in Table 6.3.5 of

IMC 0308, Attachment 3, Appendix F. For motors and dry transformers, the diameter is determined based on the applicable Froude number in NUREG-2178 Vol. 2. For transient combustibles the diameter is calculated based on the Froude number for transients in NUREG-2233. The process to determine the diameter as a function of time involves two steps. In the first step, the maximum diameter was determined during the peak burning period from the peak HRR and the Froude number for the ignition source. In the second step, the maximum diameter was used to calculate the HRR per unit area (HRRPUA) during the peak burning period and then the diameter at time t during the growth and decay stages was determined from the HRR at time t based on the assumption the HRRPUA is constant for the entire profile.

- f. Fire elevation ($z = 0$): The following guidance is used to determine the elevation of the fire base:
 - 1. For closed top electrical enclosures (i.e., enclosures without horizontal top vents or openings), the fire base is placed at 1 ft. below the top of the enclosure as determined from a walkdown. For electrical enclosures not sealed at the top, the fire base is placed at the top of the enclosure.
 - 2. For motors and dry transformers, the fire base is determined from a walkdown following the guidance provided in NUREG-2178, Vol. 2.
 - 3. For transients, a height of 0.5 ft. is recommended, and the fire base is at the top.
 - 4. Confined liquid pool fires and unconfined liquid spill fires are placed on the floor.
- g. Fire location effects: Vertical ZOI tables and plots for fixed and transient ignition sources were developed for fires away (> 2 ft.) from walls and corners (referred to as “free-burn” or “open”), and for fires within 2 ft. of a corner.

Table A.01: 98th Percentile ZOI for Electrical Enclosures.

Electrical Enclosures		98% HRR (kW)	Vertical ZOI (ft)				Horizontal ZOI (ft)		
			Open Fire		Corner Fire				
			TP	TS	TP	TS	TP	TS	SE
Group 1 Switchgear & Load Centers	Closed	170	6.48	5.24	10.93	8.72	1.65	0.79	3.43
Group 2 MCCs & Battery Chargers	Closed	130	5.82	4.70	9.81	7.82	1.40	0.65	2.96
Group 3 Power Inverters	Closed	200	6.92	5.59	11.66	9.30	1.81	0.89	3.74
Group 4a	Closed	400	9.13	7.38	15.39	12.28	2.71	1.43	5.42
Large [$>50 \text{ ft}^3$]	Open	1000	13.17	10.65	22.20	17.71	4.55	2.58	8.81
Group 4b	Closed	200	6.92	5.59	11.66	9.30	1.81	0.89	3.74
Medium [$\leq 50 \text{ ft}^3$ and $>12 \text{ ft}^3$]	Open	325	8.40	6.79	14.16	11.30	2.40	1.24	4.85
Group 4c Small [$\leq 12 \text{ ft}^3$]	All	45	3.81	3.08	6.43	5.12	0.73	0.28	1.66

Table A.02: 98th Percentile ZOI for Motors, Dry Transformers and Transient Combustibles.

Other Ignition Sources	98% HRR (kW)	Vertical ZOI (ft)				Horizontal ZOI (ft)		
		Open Fire		Corner Fire				
		TP	TS	TP	TS	TP	TS	SE
Class A Motors [>5 hp and ≤30 hp]	15	2.39	2.01	4.01	3.33	0.24	0.03	0.87
Class B Motors [>30 hp and ≤100 hp]	37	3.38	2.82	5.64	4.67	0.50	0.04	1.44
Class C Motors [>5 hp and ≤30 hp]	100	4.91	4.08	8.16	6.72	1.00	0.29	2.47
Class A Dry Transformers [>45 kVA and ≤75 kVA]	30	3.32	2.77	5.62	4.65	0.11	0.03	1.26
Class B Dry Transformers [>75 kVA and ≤750 kVA]	70	4.49	3.71	7.55	6.19	0.83	0.26	1.98
Class C Dry Transformers [>750 kVA]	130	5.43	4.43	9.02	7.28	1.23	0.53	2.76
Generic Transient Combustibles	278	5.81	4.87	9.62	7.85	1.23	0.45	4.39
TCCL Transient Combustibles	143	4.40	2.64	7.19	4.58	0.76	0.22	3.08

D (ft.)	V _{limit} (gal)
3	0.3
4	0.6
5	1.0
6	1.4
7	1.9
8	2.5
9	3.1
10	3.9
11	4.7
12	5.6
13	6.5
14	7.6
15	8.7
16	9.9
17	11.2
18	12.5

D (ft.)	V _{limit} (gal)
19	13.9
20	15.4
21	17.0
22	18.7
23	20.4
24	22.2
25	24.1
26	26.1
27	28.1
28	30.3
29	32.5
30	34.7
31	37.1
32	39.5
33	42.0
34	44.6

D (ft.)	V _{limit} (gal)
35	47.3
36	50.0
37	52.9
38	55.7
39	58.7
40	61.8
41	64.9
42	68.1
43	71.4
44	74.7
45	78.2
46	81.7
47	85.3
48	88.9
49	92.7
50	96.5

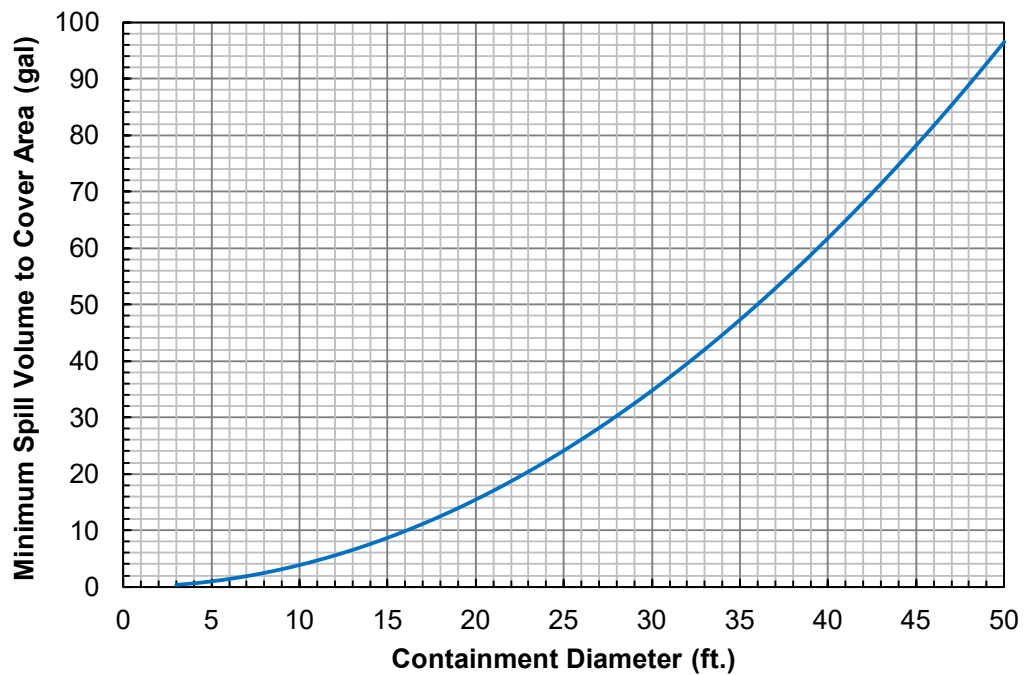


Figure A.01: Minimum Volume of a Liquid Fuel Spill to Cover a Specified Area

D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
		TS Target	TP Target
1.0	41.0	3.0	4.0
1.5	123	4.7	6.3
2.0	262	6.4	8.6
2.5	460	8.0	10.7
3.0	720	9.6	12.8
3.5	1039	11.0	14.9
4.0	1418	12.5	16.8
4.5	1854	13.8	18.6
5.0	2345	15.1	20.4
5.5	2890	16.4	22.1
6.0	3487	17.6	23.8
7.0	4836	19.9	26.9
8.0	6386	22.0	29.9
9.0	8135	24.1	32.8
10.0	10082	26.1	35.5

D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
		TS Target	TP Target
11	12227	28.0	38.2
12	14570	29.8	40.7
13	17114	31.6	43.2
14	19858	33.3	45.7
15	22802	35.0	48.1
16	25948	36.6	50.4
17	29296	38.2	52.7
18	32846	39.8	55.0
19	36598	41.4	57.2
20	40553	42.9	59.4
21	44710	44.4	61.5
22	49070	45.9	63.7
23	53633	47.3	65.7
24	58398	48.7	67.8
25	63366	50.1	69.9

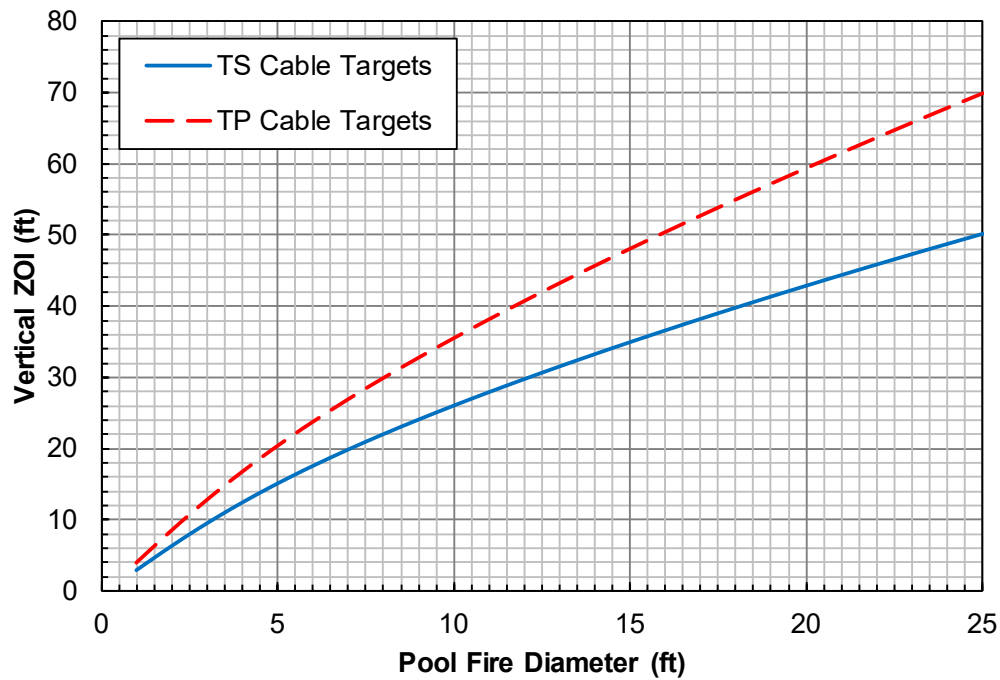


Figure A.02: Vertical ZOI of Confined Diesel Fuel and Fuel Oil Pool Fires

D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
		TS Target	TP Target
1.0	25.4	2.3	3.1
1.5	81.4	3.7	5.1
2.0	183	5.3	7.2
2.5	341	6.8	9.2
3.0	562	8.4	11.3
3.5	851	9.9	13.4
4.0	1213	11.5	15.5
4.5	1650	13.0	17.6
5.0	2165	14.5	19.6
5.5	2759	16.0	21.6
6.0	3432	17.4	23.6
7.0	5017	20.3	27.4
8.0	6917	23.0	31.2
9.0	9128	25.7	34.8
10.0	11640	28.2	38.2

D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
		TS Target	TP Target
11	14448	30.7	41.6
12	17544	33.0	44.8
13	20921	35.3	48.0
14	24574	37.5	51.0
15	28498	39.7	54.0
16	32689	41.7	56.9
17	37145	43.8	59.7
18	41862	45.7	62.4
19	46839	47.7	65.1
20	52075	49.5	67.8
21	57570	51.4	70.4
22	63322	53.2	72.9
23	69332	55.0	75.4
24	75600	56.7	77.9
25	82126	58.4	80.3

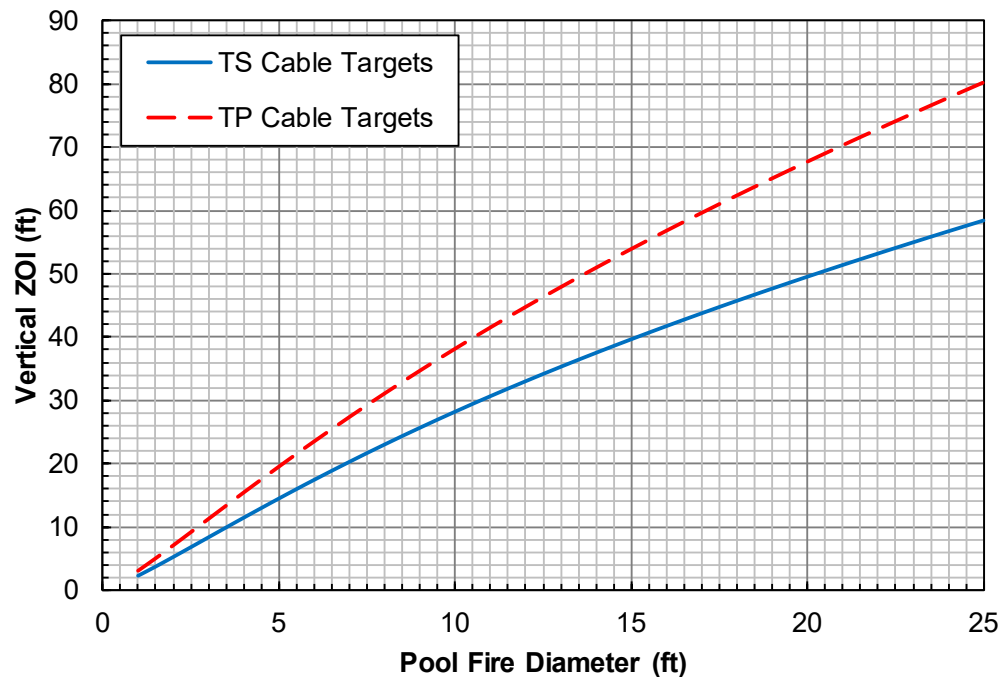


Figure A.03: Vertical ZOI of Confined Lube and Mineral Oil Pool Fires

D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
		TS Target	TP Target
1.00	2.7	0.33	0.68
1.25	5.1	0.46	0.92
1.50	8.5	0.60	1.16
1.75	13.0	0.74	1.40
2.00	18.7	0.89	1.65
2.25	25.8	1.03	1.90
2.50	34.2	1.18	2.15
2.75	44.0	1.32	2.39
3.00	55.3	1.46	2.64
3.25	68.1	1.59	2.87
3.50	82.4	1.73	3.11
3.75	98.2	1.86	3.34
4.00	116	1.99	3.57
4.25	134	2.11	3.79
4.50	155	2.23	4.01

D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
		TS Target	TP Target
4.75	177	2.35	4.23
5.00	200	2.46	4.44
5.25	226	2.57	4.64
5.50	252	2.68	4.84
5.75	280	2.78	5.04
6.00	310	2.88	5.23
6.25	341	2.98	5.42
6.50	373	3.07	5.60
6.75	407	3.16	5.78
7.00	443	3.25	5.95
7.50	518	3.41	6.29
8.00	599	3.56	6.61
8.50	685	3.70	6.92
9.00	777	3.83	7.22
10.00	977	4.05	7.77

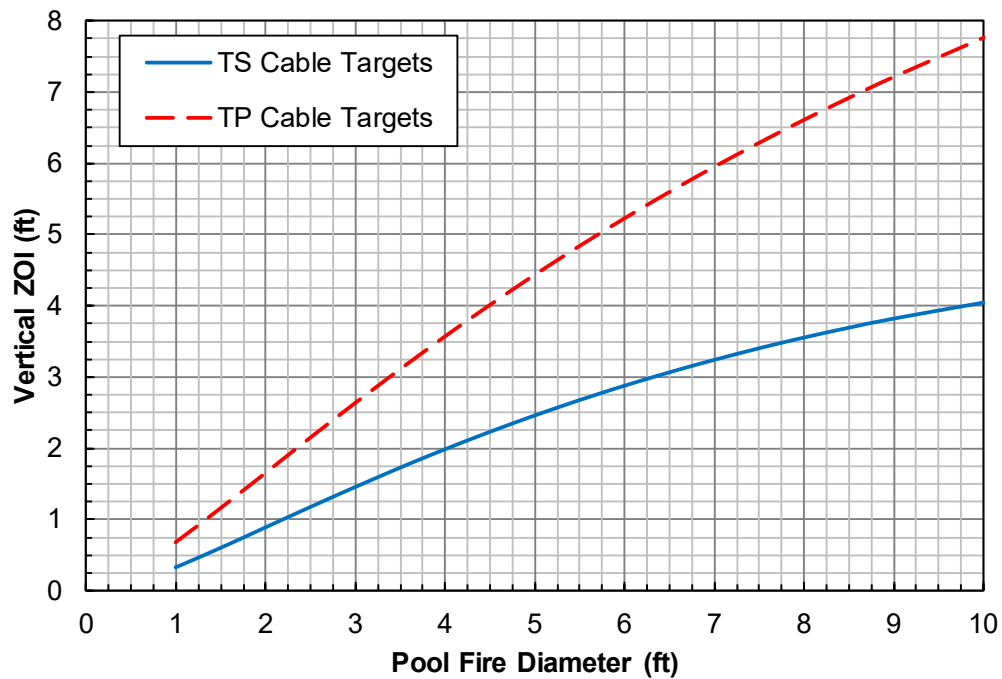


Figure A.04: Vertical ZOI of Confined Silicone Liquid Pool Fires

D (ft.)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
1.0	0.27	0.87	1.6
1.5	0.69	1.7	3.0
2.0	1.2	2.6	4.5
2.5	1.8	3.6	6.1
3.0	2.4	4.7	7.7
3.5	3.0	5.7	9.3
4.0	3.7	6.8	11.0
4.5	4.3	7.9	12.6
5.0	5.0	8.9	14.3
5.5	5.6	10.0	15.9
6.0	6.3	11.1	17.5
7.0	7.6	13.2	20.8
8.0	9.0	15.3	23.9
9.0	10.3	17.4	27.1
10.0	11.6	19.5	30.3

D (ft.)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
11	13.0	21.6	33.4
12	14.3	23.6	36.5
13	15.5	25.5	39.3
14	16.4	27.0	41.7
15	17.3	28.5	44.1
16	18.2	30.0	46.4
17	19.1	31.5	48.6
18	20.0	32.9	50.8
19	20.8	34.3	53.0
20	21.6	35.7	55.1
21	22.5	37.0	57.2
22	23.2	38.3	59.3
23	24.0	39.6	61.3
24	24.8	40.9	63.3
25	25.5	42.1	65.2

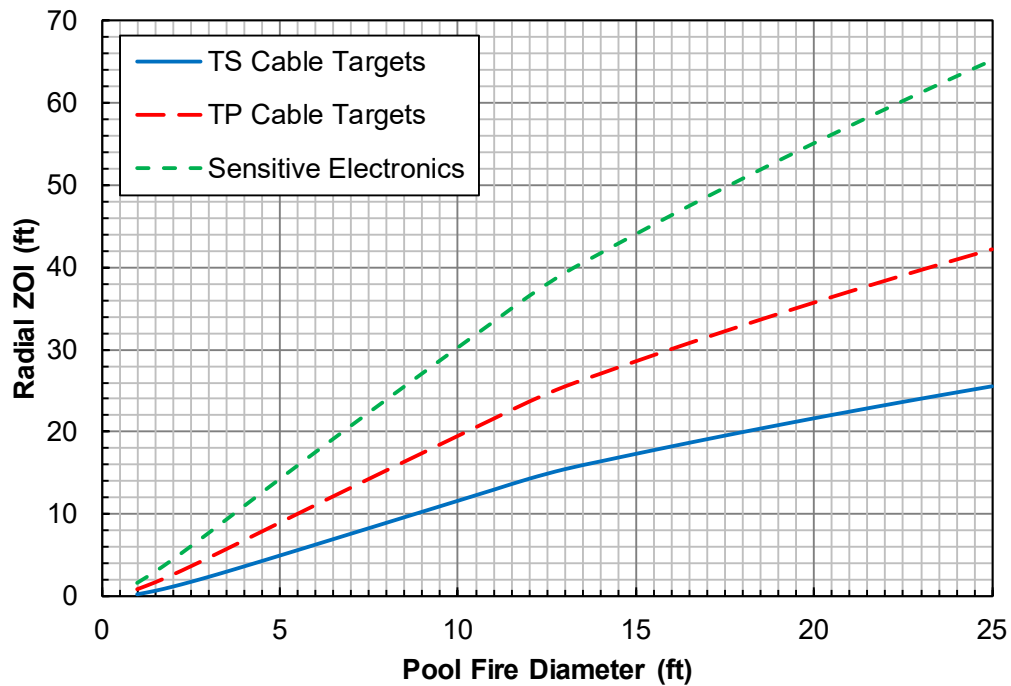


Figure A.05: Radial ZOI of Confined Diesel Fuel and Fuel Oil Pool Fires

D (ft.)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
1.0	0.14	0.63	1.2
1.5	0.47	1.3	2.4
2.0	0.91	2.1	3.7
2.5	1.4	3.0	5.1
3.0	2.0	4.0	6.7
3.5	2.6	5.1	8.4
4.0	3.3	6.2	10.1
4.5	4.0	7.4	11.9
5.0	4.7	8.5	13.7
5.5	5.5	9.8	15.5
6.0	6.2	11.0	17.4
7.0	7.8	13.5	21.2
8.0	9.4	16.0	25.0
9.0	11.0	18.5	28.9
10.0	12.7	21.1	32.7

D (ft.)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
11	14.1	23.4	36.2
12	15.2	25.2	39.0
13	16.3	27.0	41.8
14	17.4	28.8	44.6
15	18.4	30.5	47.3
16	19.4	32.2	49.9
17	20.4	33.9	52.4
18	21.4	35.5	54.9
19	22.3	37.0	57.4
20	23.2	38.6	59.8
21	24.1	40.1	62.1
22	25.0	41.6	64.4
23	25.9	43.0	66.7
24	26.7	44.5	68.9
25	27.6	45.9	71.1

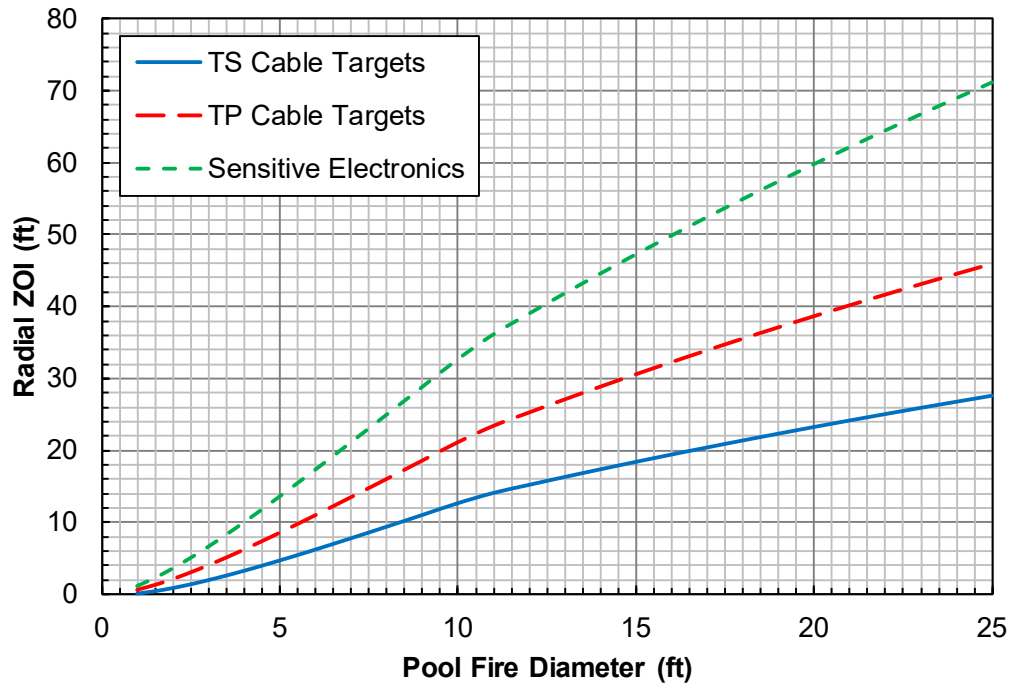


Figure A.06: Radial ZOI of Confined Lube and Mineral Oil Pool Fires

D (ft.)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
1.00	0.09	0.18	0.33
1.25	0.12	0.26	0.47
1.50	0.17	0.35	0.62
1.75	0.22	0.45	0.79
2.00	0.27	0.55	0.97
2.25	0.33	0.67	1.2
2.50	0.39	0.78	1.3
2.75	0.46	0.90	1.5
3.00	0.53	1.0	1.8
3.25	0.60	1.2	2.0
3.50	0.68	1.3	2.2
3.75	0.76	1.4	2.4
4.00	0.83	1.6	2.6
4.25	0.92	1.7	2.8
4.50	1.00	1.8	3.1

D (ft.)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
4.75	1.08	1.97	3.28
5.00	1.17	2.11	3.50
5.25	1.25	2.25	3.73
5.50	1.34	2.39	3.96
5.75	1.42	2.54	4.18
6.00	1.51	2.68	4.41
6.25	1.60	2.82	4.64
6.50	1.69	2.97	4.86
6.75	1.78	3.11	5.09
7.00	1.86	3.25	5.32
7.50	2.04	3.54	5.77
8.00	2.22	3.83	6.22
8.50	2.40	4.11	6.67
9.00	2.57	4.39	7.13
10.00	2.92	4.96	8.02

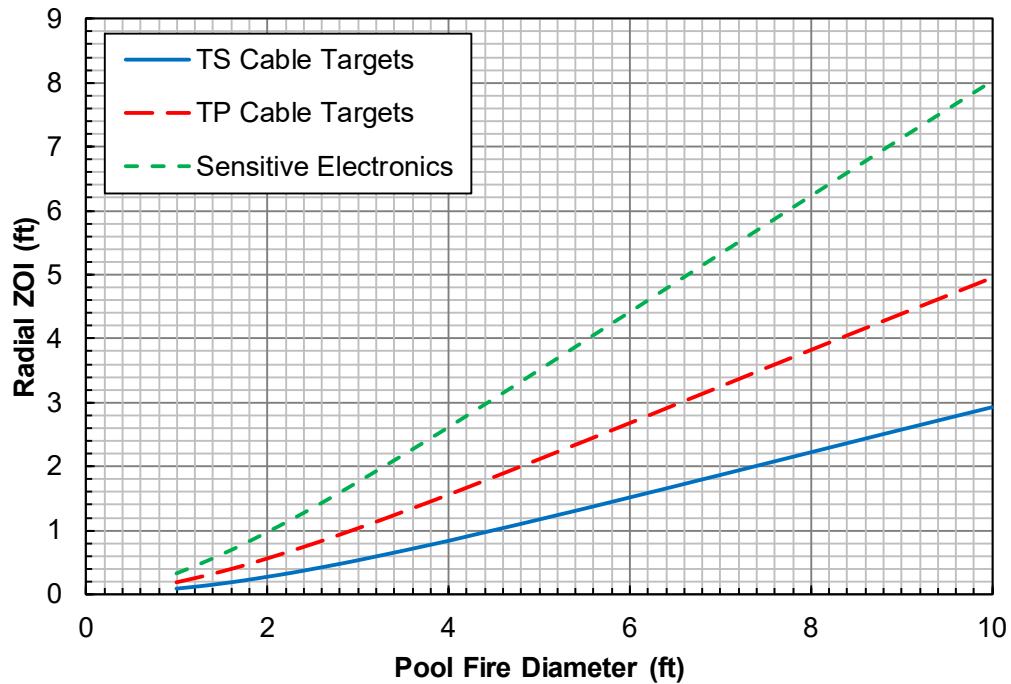


Figure A.07: Radial ZOI of Confined Silicone Liquid Pool Fires

V (gal)	D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
			TS Target	TP Target
1	5.1	2438	15.4	20.7
2	7.2	5126	20.3	27.5
3	8.8	7797	23.7	32.3
4	10.2	10451	26.4	36.0
5	11.4	13095	28.7	39.1
6	12.5	15732	30.6	41.9
7	13.5	18366	32.4	44.4
8	14.4	20997	33.9	46.6
9	15.3	23627	35.4	48.7
10	16.1	26255	36.8	50.6
11	16.9	28883	38.0	52.4
12	17.5	31143	39.1	53.9
13	18.1	33059	39.9	55.1
14	18.6	34950	40.7	56.2
15	19.1	36820	41.4	57.3

V (gal)	D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
			TS Target	TP Target
16	19.5	38668	42.2	58.3
17	20.0	40498	42.9	59.3
18	20.4	42310	43.5	60.3
19	20.9	44106	44.2	61.2
20	21.3	45886	44.8	62.1
21	21.7	47653	45.4	63.0
22	22.1	49406	46.0	63.8
23	22.5	51146	46.5	64.6
24	22.8	52874	47.1	65.4
25	23.2	54591	47.6	66.2
26	23.6	56298	48.1	66.9
27	23.9	57994	48.6	67.6
28	24.3	59680	49.1	68.4
29	24.6	61357	49.6	69.0
30	24.9	63026	50.1	69.7

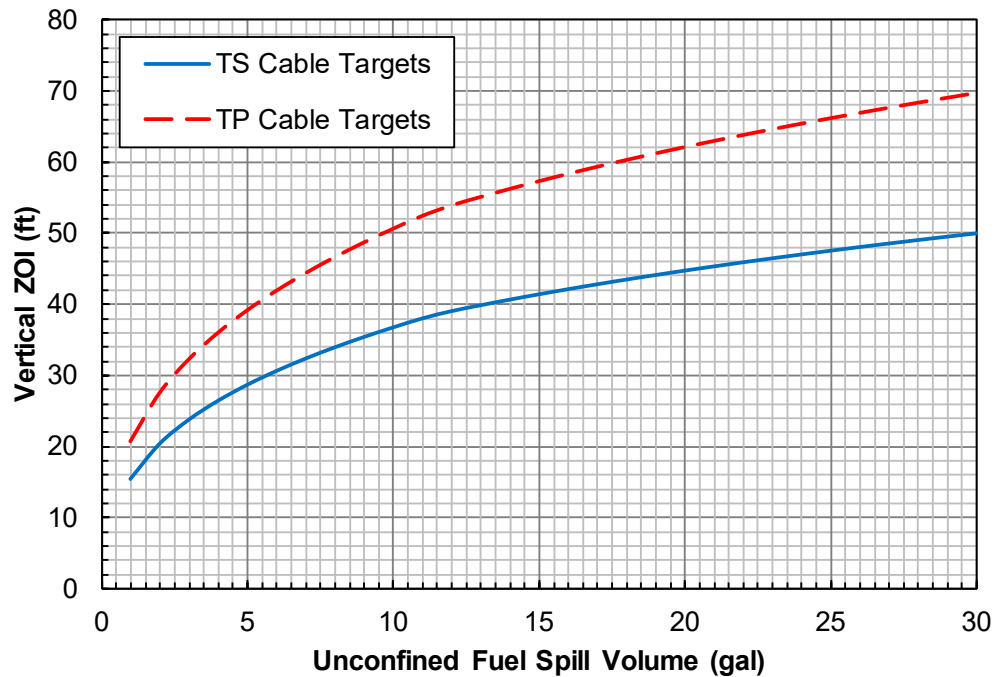


Figure A.08: Vertical ZOI of Unconfined Diesel Fuel and Fuel Oil Spill Fires

V (gal)	D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
			TS Target	TP Target
1	5.1	2265	14.8	20.0
2	7.2	5368	20.8	28.2
3	8.8	8696	25.2	34.1
4	10.2	12121	28.7	38.8
5	11.4	15592	31.6	42.8
6	12.5	19085	34.1	46.3
7	13.5	22588	36.3	49.4
8	14.4	26093	38.4	52.2
9	15.3	29597	40.2	54.8
10	16.1	33098	41.9	57.1
11	16.9	36595	43.5	59.3
12	17.5	39599	44.8	61.1
13	18.1	42144	45.8	62.6
14	18.6	44654	46.8	64.0
15	19.1	47132	47.8	65.3

V (gal)	D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
			TS Target	TP Target
16	19.5	49580	48.7	66.5
17	20.0	52002	49.5	67.7
18	20.4	54398	50.3	68.9
19	20.9	56771	51.1	70.0
20	21.3	59122	51.9	71.1
21	21.7	61453	52.6	72.1
22	22.1	63764	53.3	73.1
23	22.5	66057	54.0	74.1
24	22.8	68334	54.7	75.0
25	23.2	70594	55.3	75.9
26	23.6	72838	55.9	76.8
27	23.9	75069	56.6	77.7
28	24.3	77285	57.2	78.5
29	24.6	79488	57.7	79.3
30	24.9	81679	58.3	80.1

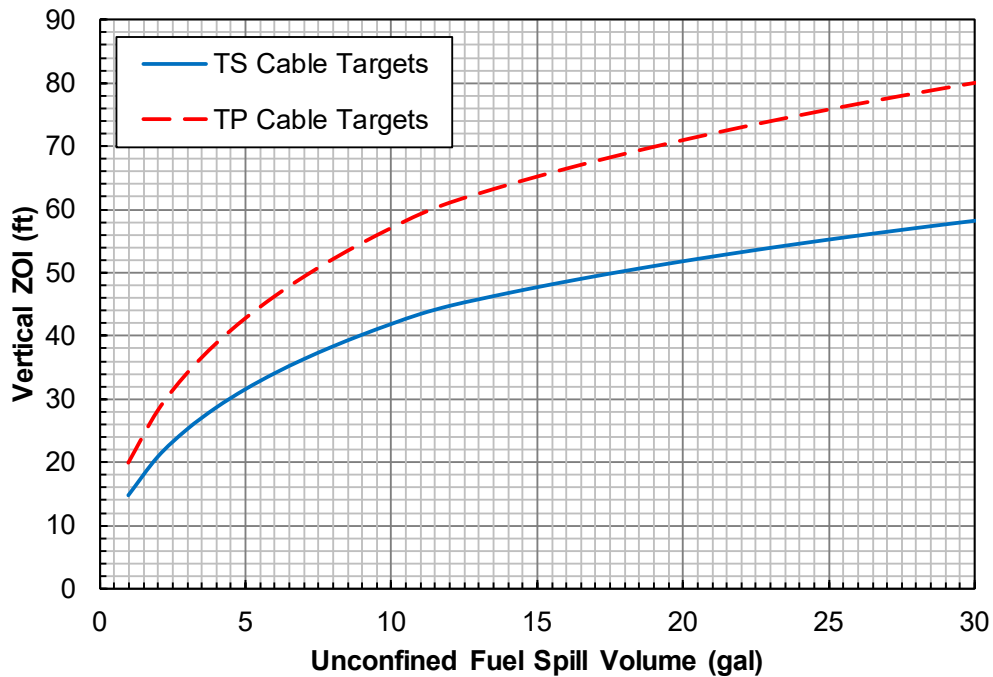


Figure A.09: Vertical ZOI of Unconfined Lube and Mineral Oil Spill Fires

V (gal)	D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
			TS Target	TP Target
1.0	5.1	209	2.50	4.51
1.1	5.3	235	2.61	4.71
1.2	5.6	260	2.71	4.90
1.3	5.8	286	2.80	5.08
1.4	6.0	312	2.89	5.25
1.5	6.2	339	2.97	5.40
1.6	6.4	365	3.05	5.55
1.7	6.6	392	3.12	5.70
1.8	6.8	418	3.19	5.83
1.9	7.0	445	3.25	5.96
2.0	7.2	472	3.31	6.09
2.1	7.4	499	3.37	6.21
2.2	7.5	526	3.43	6.32
2.3	7.7	553	3.48	6.43
2.4	7.9	580	3.53	6.54

V (gal)	D (ft.)	HRR (kW)	Vertical ZOI (ft.)	
			TS Target	TP Target
2.50	8.0	607	3.57	6.64
2.60	8.2	634	3.62	6.74
2.70	8.4	661	3.66	6.84
2.80	8.5	688	3.70	6.93
2.90	8.7	715	3.74	7.02
3.00	8.8	742	3.78	7.11
3.20	9.1	797	3.85	7.28
3.40	9.4	851	3.92	7.43
3.60	9.7	906	3.98	7.58
3.80	9.9	960	4.04	7.73
4.00	10.2	1014	4.09	7.86
4.25	10.5	1082	4.15	8.02
4.50	10.8	1150	4.21	8.17
4.75	11.1	1218	4.26	8.32
5.00	11.4	1286	4.31	8.45

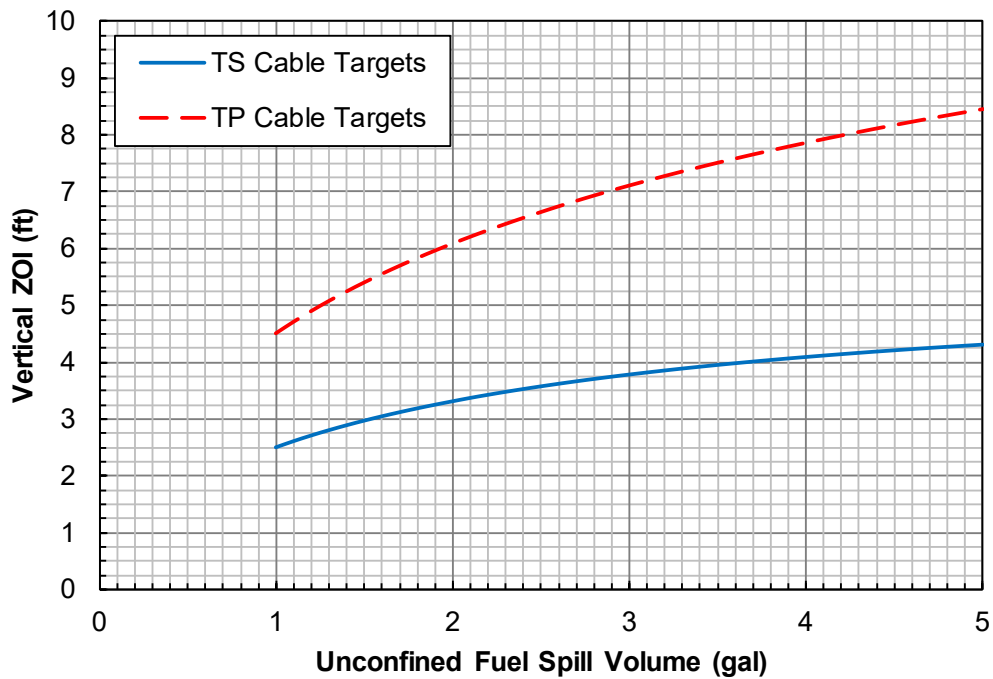


Figure A.10: Vertical ZOI of Unconfined Silicone Liquid Spill Fires

V (gal)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
1	5.1	9.1	14.6
2	7.9	13.6	21.4
3	10.0	17.0	26.5
4	11.9	19.9	30.8
5	13.5	22.3	34.6
6	14.9	24.6	38.0
7	15.9	26.2	40.5
8	16.8	27.6	42.7
9	17.6	28.9	44.7
10	18.3	30.2	46.6
11	19.0	31.3	48.3
12	19.6	32.2	49.8
13	20.0	33.0	51.0
14	20.5	33.7	52.1
15	20.9	34.4	53.1

V (gal)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
16	21.3	35.0	54.1
17	21.6	35.6	55.1
18	22.0	36.2	56.0
19	22.3	36.8	56.9
20	22.7	37.4	57.8
21	23.0	37.9	58.6
22	23.3	38.4	59.4
23	23.6	38.9	60.2
24	23.9	39.4	61.0
25	24.2	39.9	61.7
26	24.5	40.3	62.4
27	24.7	40.8	63.1
28	25.0	41.2	63.8
29	25.2	41.6	64.4
30	25.5	42.1	65.1

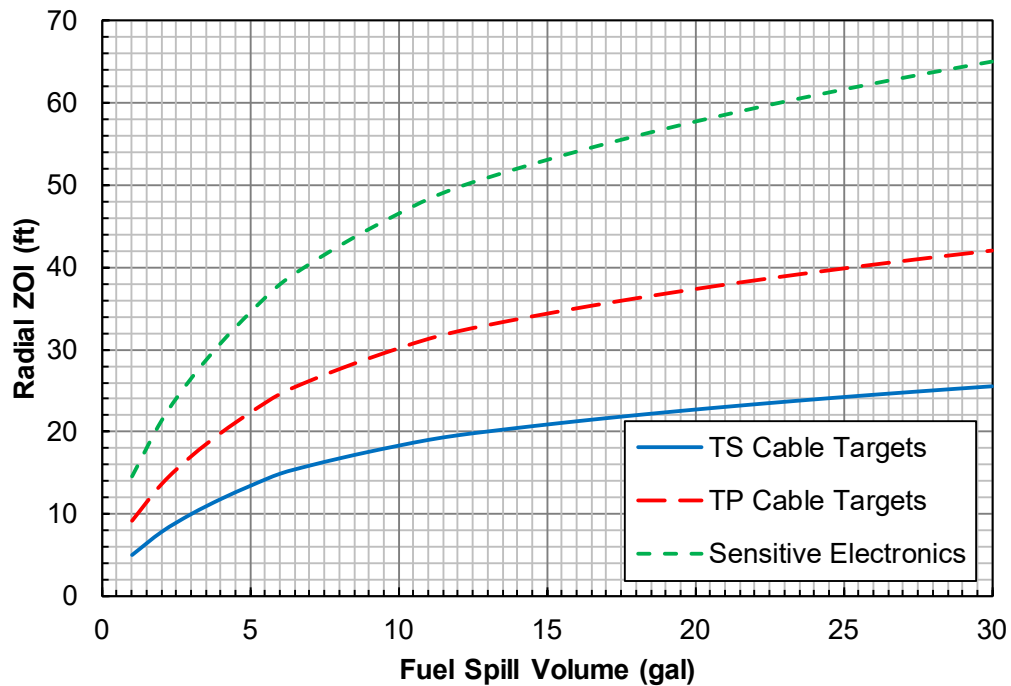


Figure A.11: Radial ZOI of Unconfined Diesel Fuel and Fuel Oil Spill Fires

V (gal)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
1	4.9	8.8	14.0
2	8.1	14.0	21.9
3	10.7	18.1	28.1
4	13.0	21.6	33.4
5	14.5	24.1	37.3
6	15.7	26.1	40.4
7	16.8	27.9	43.1
8	17.8	29.5	45.6
9	18.7	31.0	48.0
10	19.5	32.4	50.1
11	20.3	33.7	52.1
12	20.9	34.7	53.7
13	21.4	35.6	55.1
14	21.9	36.4	56.3
15	22.4	37.1	57.5

V (gal)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
16	22.8	37.9	58.7
17	23.2	38.6	59.7
18	23.6	39.2	60.8
19	24.0	39.9	61.8
20	24.4	40.5	62.8
21	24.7	41.1	63.7
22	25.1	41.7	64.6
23	25.4	42.3	65.5
24	25.7	42.8	66.3
25	26.1	43.3	67.2
26	26.4	43.8	68.0
27	26.7	44.3	68.7
28	26.9	44.8	69.5
29	27.2	45.3	70.3
30	27.5	45.8	71.0

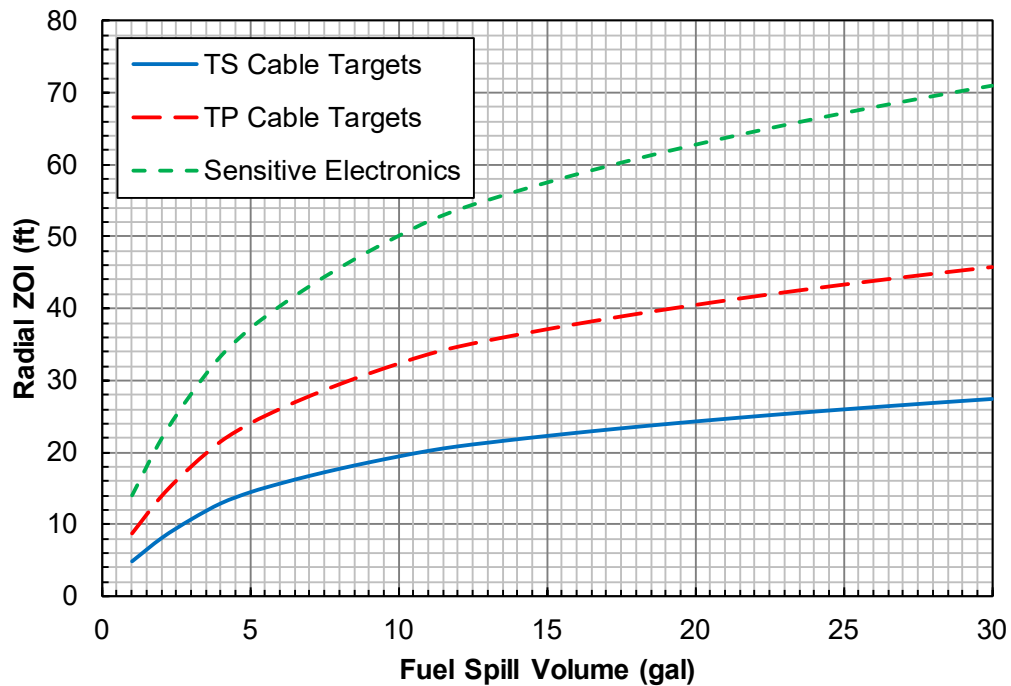


Figure A.12: Radial ZOI of Unconfined Lube and Mineral Oil Spill Fires

V (gal)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
1.00	1.2	2.2	3.6
1.10	1.3	2.3	3.8
1.20	1.4	2.4	4.0
1.30	1.4	2.6	4.2
1.40	1.5	2.7	4.4
1.50	1.6	2.8	4.6
1.60	1.7	2.9	4.8
1.70	1.7	3.0	5.0
1.80	1.8	3.2	5.2
1.90	1.9	3.3	5.3
2.00	1.9	3.4	5.5
2.10	2.0	3.5	5.7
2.20	2.1	3.6	5.8
2.30	2.1	3.7	6.0
2.40	2.2	3.8	6.1

V (gal)	Radial ZOI (ft.)		
	TS Target	TP Target	SE Target
2.50	2.2	3.9	6.3
2.60	2.3	3.9	6.4
2.70	2.3	4.0	6.6
2.80	2.4	4.1	6.7
2.90	2.5	4.2	6.8
3.00	2.5	4.3	7.0
3.20	2.6	4.5	7.2
3.40	2.7	4.6	7.5
3.60	2.8	4.8	7.7
3.80	2.9	4.9	7.9
4.00	3.0	5.1	8.2
4.25	3.1	5.2	8.4
4.50	3.1	5.2	8.4
4.75	3.1	5.2	8.5
5.00	3.1	5.3	8.6

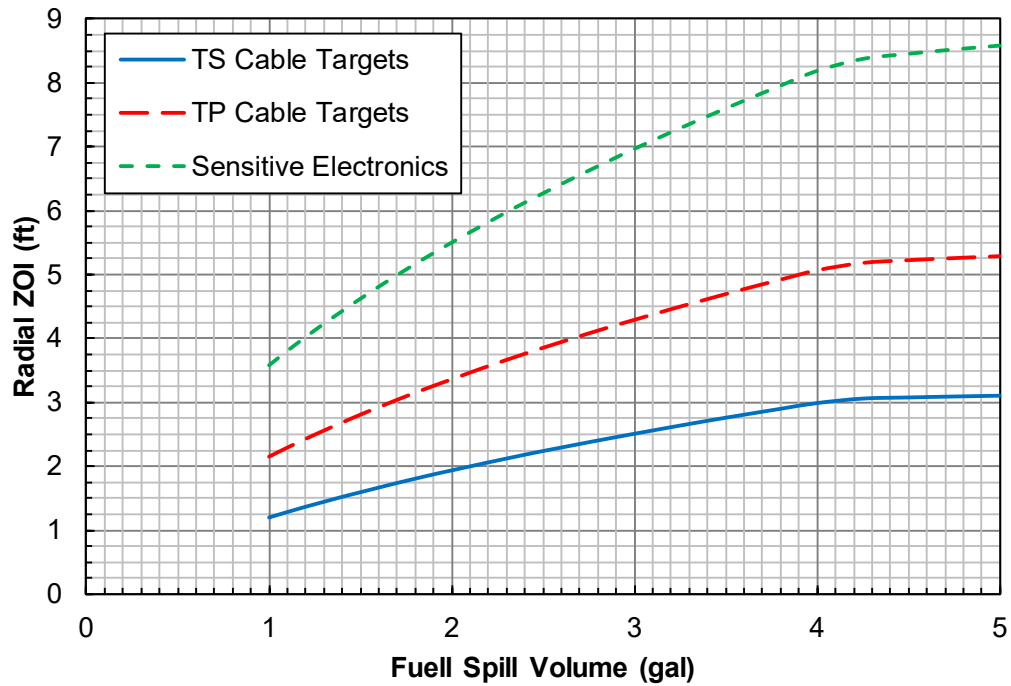


Figure A.13: Radial ZOI of Unconfined Silicone Liquid Spill Fires

TABLE/PLOT SET B
MINIMUM HRR TO CREATE A DAMAGING HGL

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Figure B.03: Minimum HRR to Create a Damaging HGL (SE Targets)	B-5

Table/Plot Set B: Overview and Assumptions

Table/Plot set B provides the minimum HRR that is needed to create damaging HGL conditions for a range of compartment sizes and different target types. It is used to screen ignition sources that are not capable of generating a damaging HGL (Step 2.3.3), and to identify scenarios involving secondary combustibles that can cause development of a damaging HGL in the fire area (Step 2.5.2).

The heat soak method was not used in the development of table/plot set B; therefore, a cable is assumed damaged without delay when the plume temperature surrounding the cable or the incident radiant heat flux reaches the damage threshold.

The assumptions and background for the calculations performed to develop the tables and plots in set B are discussed in Section 06.03.02 of IMC 0308, Attachment 3, Appendix F. The principal assumptions are as follows:

- a. An important assumption is that the compartment has openings that are large enough to allow sufficient ventilation to support the fire, which justifies the use of the method of McCaffrey, Quintiere, and Harkleroad (MQH) to calculate the HGL temperature over the methods for closed and mechanically-vented compartments that are described in Chapter 2 of NUREG-1805. In addition, the opening is assumed to be a standard 3 ft. wide, 7-ft. high open doorway. Several plants transitioning to NFPA 805 made the same assumptions, and the NRC's review of license amendment requests (LARs) submitted by these plants concluded that these assumptions and the use of the MQH method are acceptable.
- b. The ambient air temperature, T_a , is assumed to be 77°F.
- c. The minimum HRR to create damaging HGL conditions was calculated for floor areas ranging from 100 to 4900 ft², and ceiling heights between 10 and 30 ft. It is unlikely that a HGL can develop in a compartment with a floor area and ceiling height outside the upper limit of those ranges.
- d. The compartment boundaries (floor, walls, and ceiling) are assumed to be constructed of concrete with thermal properties taken from Table 2-3 in NUREG-1805, and a thickness of 1 ft.
- e. The heat transfer coefficient, h_T , (see Equation 26 in Section 06.03.02 of IMC 0308, Attachment 3, Appendix F) is calculated at $t = 1800$ s. This is conservative because, for 1 ft.-thick concrete boundaries, h_T decreases as a function of time, and the minimum HRR to cause a damaging HGL is usually reached before 30 minutes have elapsed.

Floor Area (ft ²)	Minimum HRR to Create Damaging Hot Gas Layer Conditions (kW)				
	H = 10 ft.	H = 15 ft.	H = 20 ft.	H = 25 ft.	H = 30 ft.
100	734	851	954	1047	1132
400	1212	1356	1487	1607	1719
700	1505	1661	1803	1934	2058
1000	1737	1898	2047	2186	2317
1300	1934	2100	2254	2398	2534
1600	2108	2277	2435	2583	2724
1900	2266	2438	2599	2751	2894
2200	2412	2586	2750	2904	3050
2500	2547	2724	2889	3046	3195
2800	2675	2853	3020	3179	3330
3100	2796	2975	3144	3305	3458
3400	2910	3091	3262	3424	3579
3700	3020	3202	3374	3538	3694
4000	3126	3308	3482	3647	3804
4300	3227	3411	3585	3751	3910
4600	3325	3510	3685	3852	4013
4900	3420	3605	3781	3950	4111

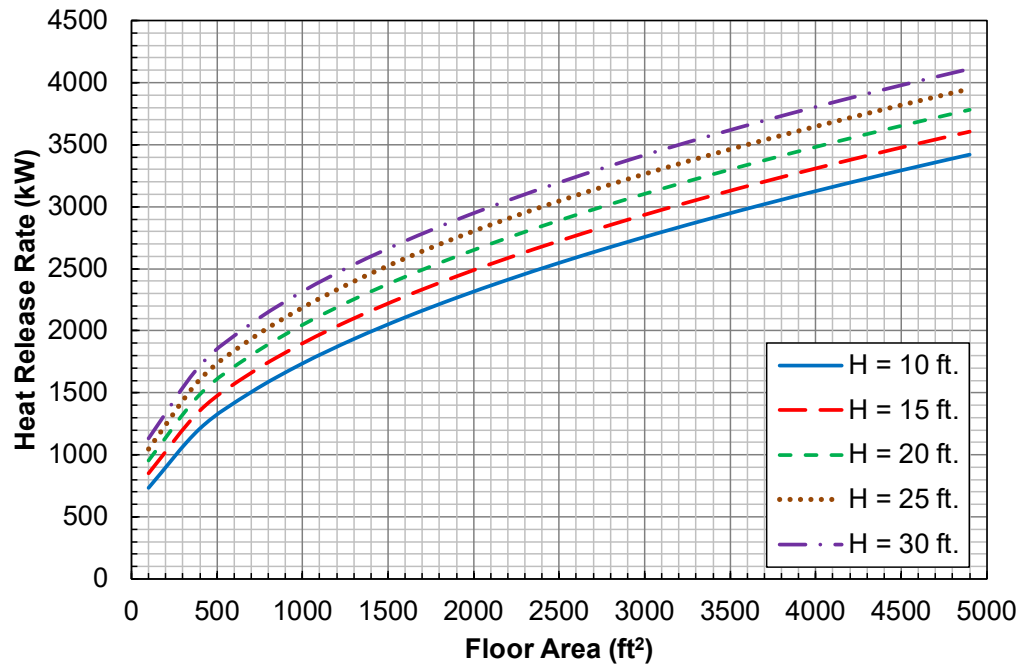


Figure B.01: Minimum HRR to Create a Damaging HGL (TS Targets)

Floor Area (ft ²)	Minimum HRR to Create Damaging Hot Gas Layer Conditions (kW)				
	H = 10 ft.	H = 15 ft.	H = 20 ft.	H = 25 ft.	H = 30 ft.
100	332	385	432	474	512
400	548	614	673	727	778
700	681	751	816	875	931
1000	786	859	926	989	1048
1300	875	950	1020	1085	1147
1600	954	1031	1102	1169	1232
1900	1025	1103	1176	1245	1310
2200	1091	1170	1244	1314	1380
2500	1153	1232	1307	1378	1446
2800	1210	1291	1367	1439	1507
3100	1265	1346	1423	1495	1565
3400	1317	1399	1476	1549	1619
3700	1367	1449	1527	1601	1672
4000	1414	1497	1576	1650	1722
4300	1460	1543	1622	1698	1770
4600	1505	1588	1667	1743	1816
4900	1547	1631	1711	1787	1860

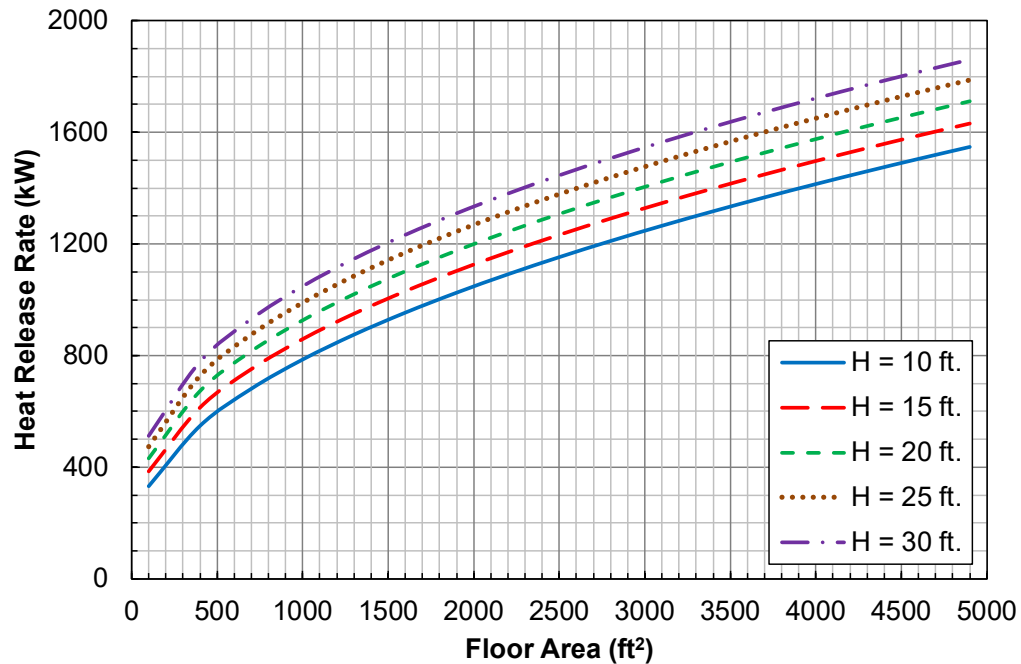


Figure B.02: Minimum HRR to Create a Damaging HGL (TP Targets)

Floor Area (ft ²)	Minimum HRR to Create Damaging Hot Gas Layer Conditions (kW)				
	H = 10 ft.	H = 15 ft.	H = 20 ft.	H = 25 ft.	H = 30 ft.
100	36	41	46	51	55
400	59	66	72	78	84
700	73	81	88	94	100
1000	84	92	100	106	113
1300	94	102	110	117	123
1600	102	111	118	126	132
1900	110	119	126	134	141
2200	117	126	134	141	148
2500	124	132	140	148	155
2800	130	139	147	155	162
3100	136	145	153	161	168
3400	142	150	159	166	174
3700	147	156	164	172	180
4000	152	161	169	177	185
4300	157	166	174	182	190
4600	162	171	179	187	195
4900	166	175	184	192	200

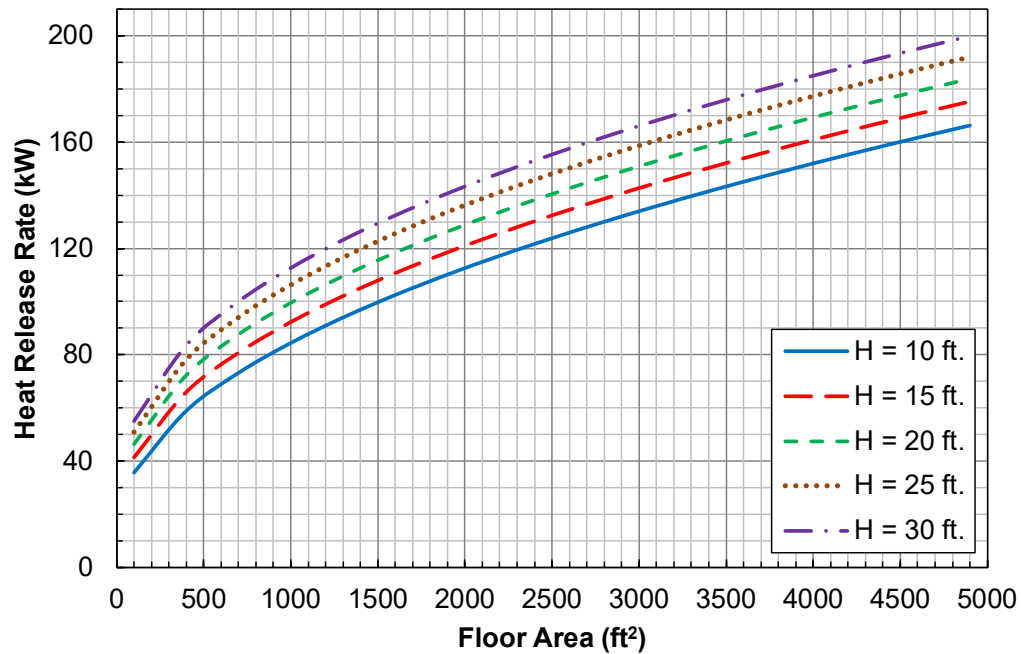


Figure B.03: Minimum HRR to Create a Damaging HGL (SE Targets)

TABLE/PLOT SET C
HRR PROFILES OF FIRES INVOLVING HORIZONTAL CABLE TRAYS

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Table/Plot Set C: Overview and Assumptions

Table/Plot set C provides the combined HRR of an ignition source and a vertical stack of between one and seven horizontal cable trays as a function of time for various ignition source-cable tray configurations. This set is used in conjunction with table/plot set B to determine if and when a fire scenario involving secondary combustibles will cause a damaging HGL in the fire area (Step 2.5.2).

The assumptions and background for the calculations performed to develop the tables and plots in set C are discussed in Section 06.03.03 of IMC 0308, Attachment 3, Appendix F. The principal assumptions are as follows:

- a. The FLASH-CAT model was used to calculate the HRR of vertical stacks of horizontal cable trays. The model is described in Chapter 9 of NUREG/CR-7010, Vol. 1, and in Section 06.03.03 of IMC 0308, Attachment 3, Appendix F. **The heat soak method was not used in the creation of table/plot set C.**
- b. The HRR as a function of time for an ignition source in combination with a vertical stack of cable trays was calculated at 1-minute intervals for the following ignition source-cable tray configurations:
 1. Ignition source-cable tray HRR tables and plots were developed for all fixed and transient ignition sources listed in Table A5.1 of Attachment 5.
 2. In addition, HRR tables and plots were developed for cable tray fires without an ignition source. These tables and plots can be used to determine the HRR of cable trays fires that are ignited by a confined liquid fuel pool fire or an unconfined liquid fuel spill fire by adding the HRR of the confined liquid fuel pool fire or unconfined liquid fuel spill fire. The HRRs of confined liquid fuel pool fires and unconfined liquid fuel spill fires are tabulated in table/plot set A.
 3. HRR tables and plots were developed for cable trays widths of 1.5 and 3 ft. The calculated HRR values for 1.5 ft. wide trays can be used for 1 ft. and 2 ft. wide trays. The calculated HRR values for 3.0 ft. wide trays can be used for single trays and multiple trays side-by-side with a total width greater than 2 ft.
 4. The trays were assumed to be 24 ft. long and ignited at the center to ensure that it would take at least one hour for the flame to spread to the end of the trays.
 5. The assumed spacing between trays was 1 ft.
 6. HRR tables and plots were developed for stacks of one through seven trays filled with TS and TP cables. The HRR tables and plots for TS cables can also be used for Kerite cables.
- c. The table/plot set C HRRs for TS cables were calculated assuming 75% of the trays are filled with cables that have the characteristics of cable #16 in NUREG/CR-7010, Vol. 1. This cable was chosen because, of all the TS cables that were tested, it results in the highest amount of active polymer in the trays. The tables and plots for TP cables were developed in the assumption that 75% of the trays are filled with cables that have the characteristics of cable #701 in NUREG/CR-7010, Vol. 1, which was the only true TP cable that was tested. The input parameters for the cable tray fire propagation model calculations are given in Section 06.03.03 of IMC 0308, Attachment 3, Appendix F (see Table 6.2.10).

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	3	3	3	3	3	3	3	13	13	13	13	13	13	13
3	6	6	6	6	6	6	6	29	29	29	29	29	29	29
4	9	9	9	9	9	9	9	48	48	48	48	48	48	48
5	13	13	13	13	13	13	13	69	69	69	69	69	69	69
6	16	22	22	22	22	22	22	90	114	114	114	114	114	114
7	20	31	31	31	31	31	31	102	152	152	152	152	152	152
8	24	41	41	41	41	41	41	115	194	194	194	194	194	194
9	29	51	58	58	58	58	58	127	238	272	272	272	272	272
10	33	61	77	77	77	77	77	139	278	349	349	349	349	349
11	38	72	96	106	106	106	106	152	303	413	457	457	457	457
12	43	84	115	135	148	148	148	164	327	479	571	625	625	625
13	48	95	135	166	191	205	205	176	352	540	681	793	858	858
14	51	106	154	195	233	263	280	189	377	577	770	942	1074	1149
15	54	115	173	224	275	320	354	201	402	614	850	1084	1287	1440
16	56	125	191	254	318	378	429	213	426	651	899	1185	1460	1694
17	59	135	210	284	361	437	506	226	451	688	949	1246	1580	1897
18	61	142	227	312	403	494	581	238	476	725	998	1308	1654	2037
19	64	147	241	338	442	549	655	250	500	762	1048	1370	1728	2123
20	66	152	256	365	483	606	729	263	525	799	1097	1431	1802	2210
21	69	157	266	387	519	659	801	275	550	836	1146	1493	1876	2296
22	71	162	274	407	553	709	870	287	574	873	1196	1555	1951	2383
23	74	166	281	420	581	754	933	300	599	910	1245	1617	2025	2469
24	76	171	289	430	599	788	987	312	624	947	1294	1678	2099	2555
25	78	176	296	440	611	809	1026	320	644	980	1340	1736	2169	2638
26	81	181	303	450	623	823	1050	318	655	1003	1375	1783	2228	2710
27	83	186	311	460	636	838	1068	314	662	1023	1407	1828	2286	2779
28	86	191	318	470	648	853	1085	307	668	1040	1437	1870	2340	2846
29	88	196	326	480	660	868	1102	297	663	1048	1457	1902	2384	2903
30	91	201	333	489	673	883	1120	292	646	1043	1465	1923	2417	2948
31	93	206	340	499	685	898	1137	292	631	1041	1474	1945	2451	2995
32	96	211	348	509	697	912	1154	292	613	1024	1471	1953	2472	3028
33	98	216	355	519	710	927	1171	292	593	982	1440	1935	2467	3035
34	101	221	363	529	722	942	1189	292	584	948	1404	1912	2455	3036
35	103	226	370	539	734	957	1206	292	584	920	1344	1846	2402	2994
36	106	231	378	549	747	972	1223	292	584	890	1278	1736	2284	2889
37	108	236	385	559	759	986	1241	292	584	877	1227	1640	2133	2726
38	111	241	392	569	771	1001	1258	292	584	877	1186	1550	1988	2517
39	113	245	400	578	784	1016	1275	292	584	877	1169	1482	1861	2324
40	115	250	407	588	796	1031	1292	292	584	877	1169	1461	1779	2172

Figure C.01.a: Table of HRRs of 1.5 ft. Cable Tray Fires

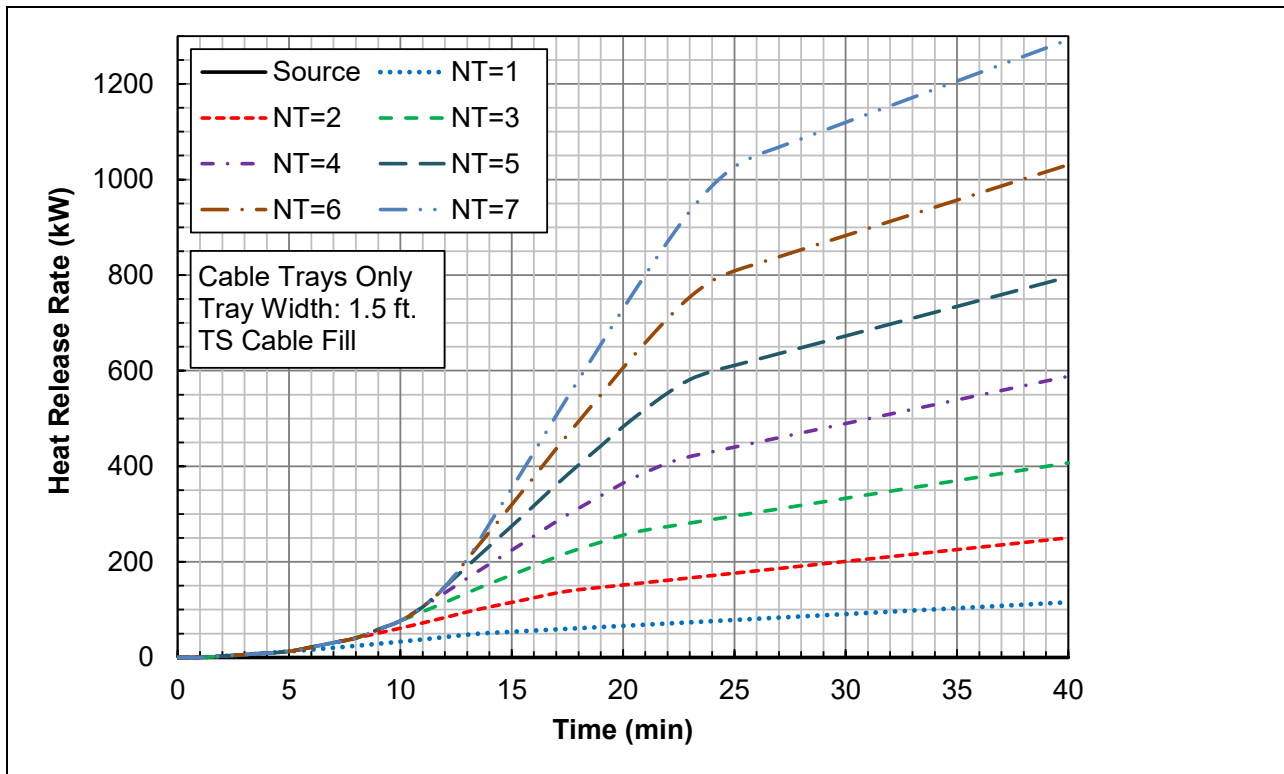


Figure C.01.b: HRR Plots of 1.5 ft. TS Cable Tray Fires

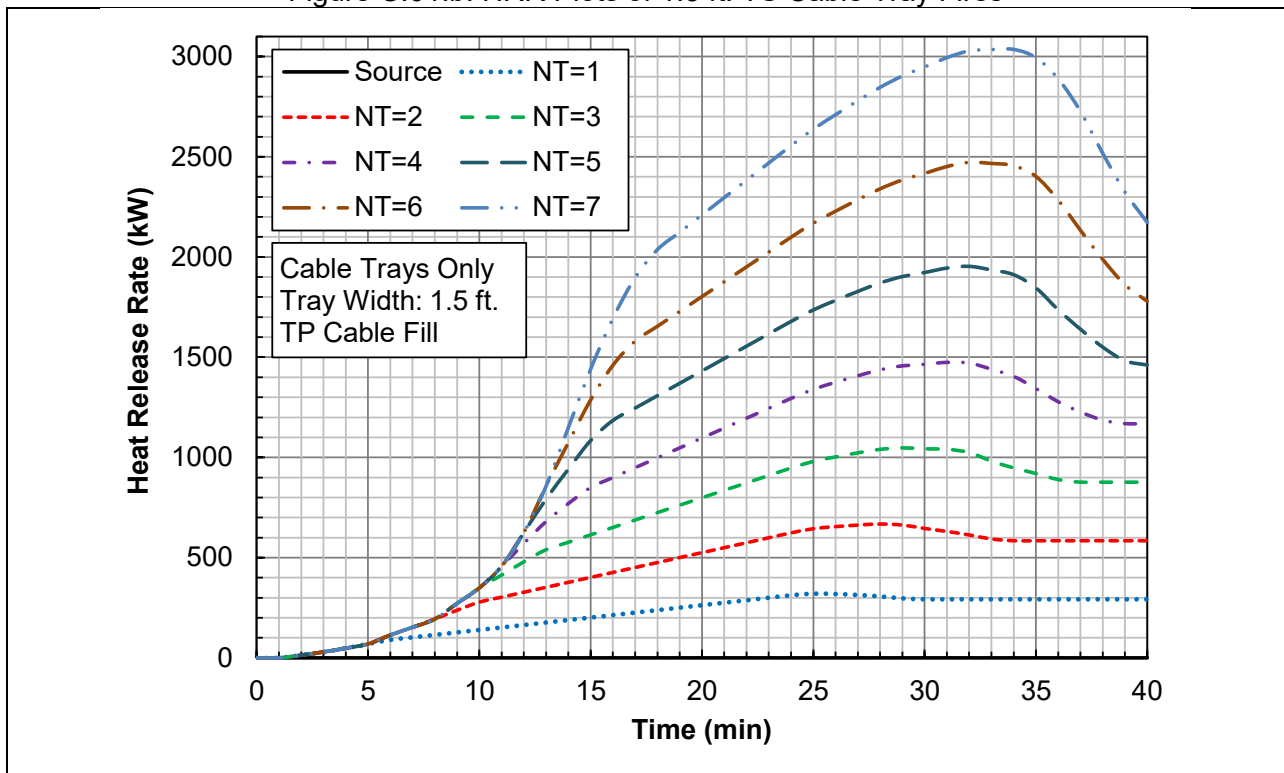


Figure C.01.c: HRR Plots of 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	6	6	6	6	6	6	6	27	27	27	27	27	27	27
3	12	12	12	12	12	12	12	59	59	59	59	59	59	59
4	18	18	18	18	18	18	18	96	96	96	96	96	96	96
5	25	25	25	25	25	25	25	139	139	139	139	139	139	139
6	33	43	43	43	43	43	43	180	227	227	227	227	227	227
7	41	62	62	62	62	62	62	205	305	305	305	305	305	305
8	49	81	81	81	81	81	81	229	387	387	387	387	387	387
9	57	102	117	117	117	117	117	254	475	543	543	543	543	543
10	66	123	153	153	153	153	153	279	556	698	698	698	698	698
11	76	145	191	211	211	211	211	303	606	826	914	914	914	914
12	85	167	230	271	295	295	295	328	655	959	1141	1251	1251	1251
13	95	191	271	332	381	411	411	353	704	1079	1361	1585	1715	1715
14	103	211	309	391	466	525	559	377	754	1153	1540	1883	2148	2299
15	108	230	345	449	550	639	708	402	803	1228	1700	2169	2574	2881
16	112	250	383	508	635	755	859	427	852	1302	1799	2369	2920	3388
17	117	270	421	569	723	873	1012	451	902	1376	1898	2493	3160	3794
18	122	284	454	624	805	987	1162	476	951	1450	1996	2616	3309	4074
19	127	293	483	676	885	1099	1309	501	1001	1524	2095	2740	3457	4247
20	132	303	512	729	966	1212	1459	526	1050	1598	2194	2863	3605	4420
21	137	313	533	774	1039	1317	1601	550	1099	1672	2293	2986	3753	4592
22	142	323	548	813	1106	1418	1739	575	1149	1746	2391	3110	3901	4765
23	147	333	562	841	1163	1508	1867	600	1198	1820	2490	3233	4049	4938
24	152	343	577	860	1197	1576	1973	624	1247	1894	2589	3357	4197	5111
25	157	353	592	880	1222	1617	2053	641	1289	1960	2679	3472	4337	5275
26	162	363	607	900	1247	1647	2101	637	1309	2005	2750	3567	4457	5420
27	167	372	622	920	1271	1677	2135	628	1325	2046	2815	3656	4571	5559
28	172	382	637	939	1296	1706	2170	613	1335	2081	2874	3741	4680	5692
29	177	392	651	959	1321	1736	2205	594	1325	2095	2914	3805	4769	5806
30	182	402	666	979	1345	1765	2239	584	1291	2086	2929	3845	4834	5896
31	187	412	681	999	1370	1795	2274	584	1262	2081	2949	3889	4903	5989
32	191	422	696	1018	1395	1825	2308	584	1227	2049	2941	3907	4945	6056
33	196	432	711	1038	1420	1854	2343	584	1186	1964	2881	3871	4934	6069
34	201	442	725	1058	1444	1884	2377	584	1169	1896	2809	3823	4911	6071
35	206	451	740	1078	1469	1914	2412	584	1169	1840	2687	3691	4803	5989
36	211	461	755	1098	1494	1943	2447	584	1169	1779	2556	3473	4568	5777
37	216	471	770	1117	1518	1973	2481	584	1169	1753	2453	3279	4267	5452
38	221	481	785	1137	1543	2003	2516	584	1169	1753	2372	3101	3976	5034
39	226	491	799	1157	1568	2032	2550	584	1169	1753	2338	2965	3723	4648
40	231	501	814	1177	1592	2062	2585	584	1169	1753	2338	2922	3557	4344

Figure C.02.a: Table of HRRs of 3.0 ft. Cable Tray Fires

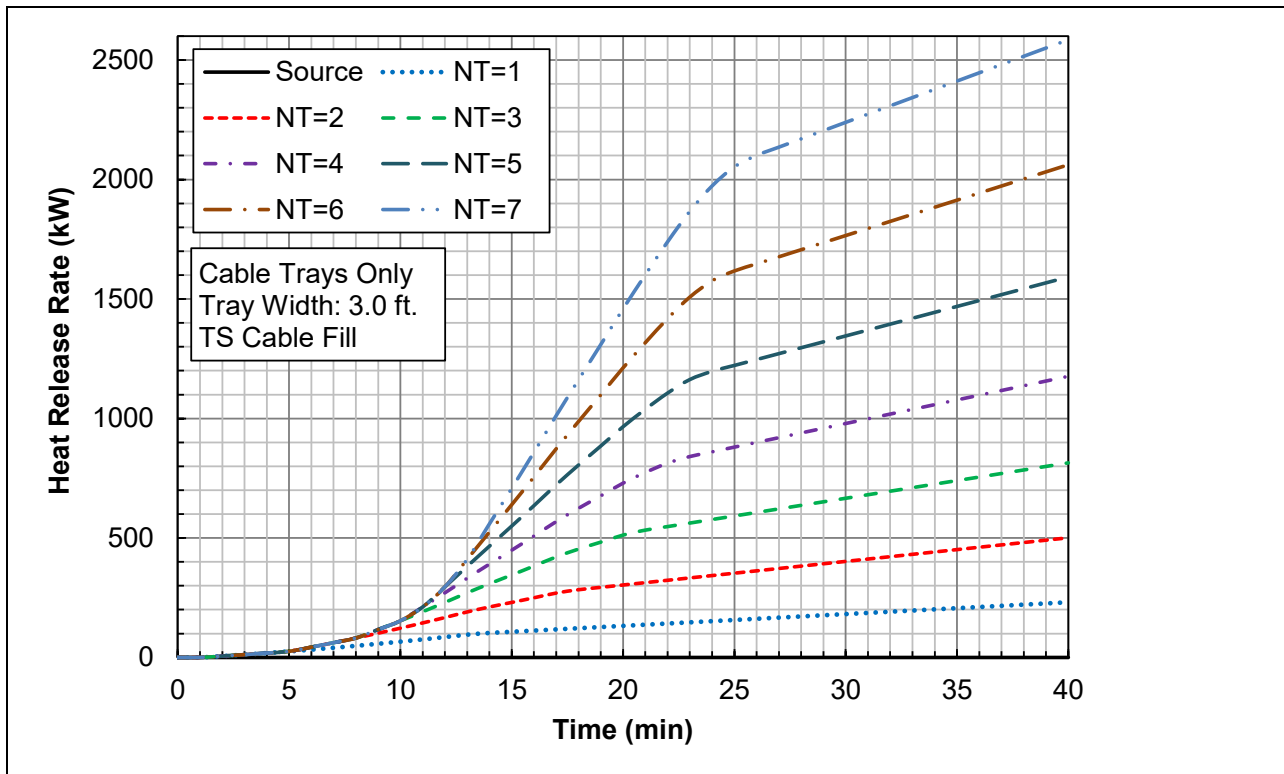


Figure C.02.b: HRR Plots of 3.0 ft. TS Cable Tray Fires

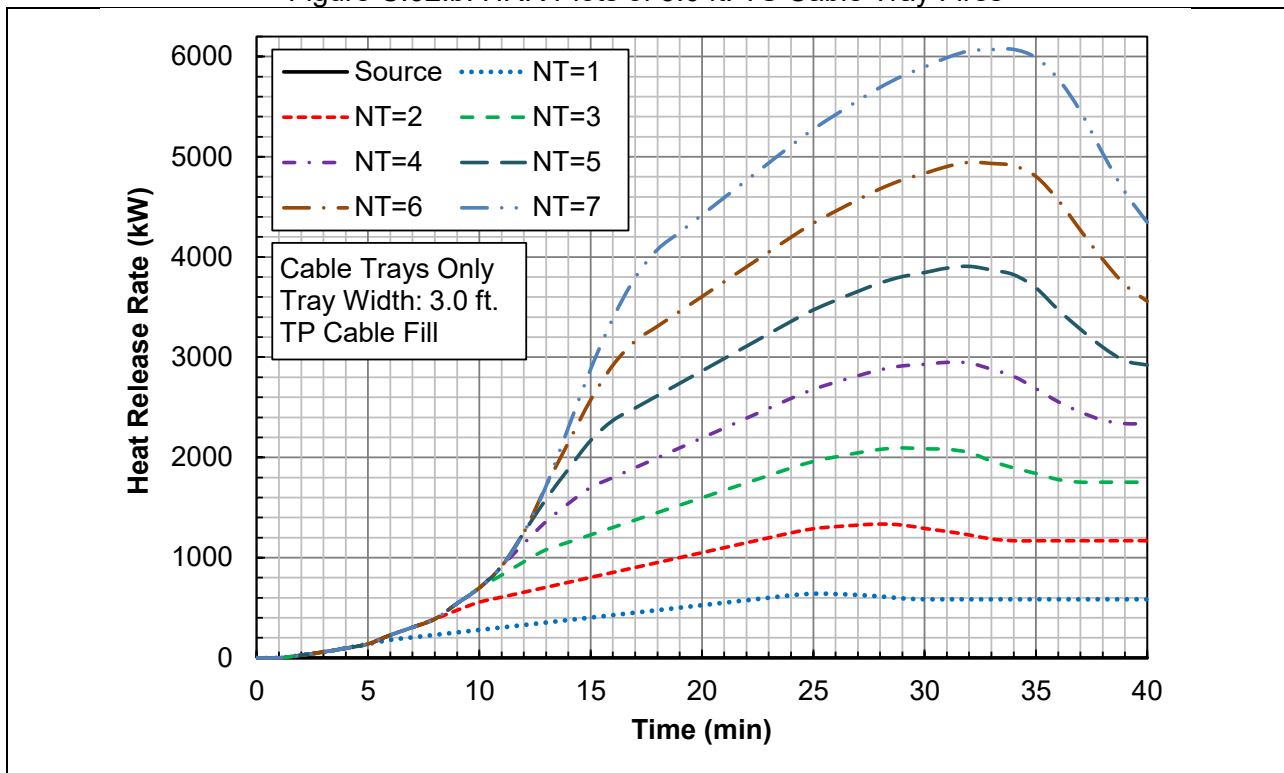


Figure C.02.c: HRR Plots of 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2	16	16	16	16	16	16	16	21	21	21	21	21	21	21
3	18	18	18	18	18	18	18	30	30	30	30	30	30	30
4	19	19	19	19	19	19	19	41	41	41	41	41	41	41
5	21	21	21	21	21	21	21	55	55	55	55	55	55	55
6	23	27	27	27	27	27	27	71	87	87	87	87	87	87
7	25	33	33	33	33	33	33	83	119	119	119	119	119	119
8	28	39	39	39	39	39	39	95	153	153	153	153	153	153
9	30	46	52	52	52	52	52	108	189	216	216	216	216	216
10	33	53	65	65	65	65	65	120	225	281	281	281	281	281
11	36	61	79	87	87	87	87	132	249	338	375	375	375	375
12	39	69	94	111	121	121	121	145	274	397	474	521	521	521
13	43	77	109	134	156	169	169	157	299	452	571	669	726	726
14	46	85	124	158	191	217	233	169	323	489	653	803	921	989
15	48	93	139	182	226	266	297	182	348	526	728	933	1114	1253
16	43	94	147	200	255	308	355	187	365	555	770	1021	1267	1479
17	38	94	155	217	284	352	414	191	382	585	812	1075	1375	1662
18	41	101	169	241	320	401	480	204	407	622	861	1137	1449	1797
19	43	106	182	264	355	450	546	216	432	659	911	1198	1523	1883
20	46	111	195	287	390	500	612	229	456	696	960	1260	1597	1970
21	48	115	205	307	423	547	676	241	481	733	1009	1322	1671	2056
22	50	120	212	325	453	593	738	253	506	770	1059	1384	1745	2143
23	53	125	220	338	479	634	796	266	531	807	1108	1445	1819	2229
24	55	130	227	348	496	665	846	278	555	844	1157	1507	1893	2316
25	58	135	234	358	508	685	883	288	578	880	1205	1567	1965	2400
26	60	140	242	368	521	700	906	294	596	909	1247	1622	2032	2480
27	63	145	249	378	533	715	924	296	611	937	1287	1674	2097	2556
28	65	150	257	387	545	730	941	296	623	962	1324	1723	2159	2630
29	68	155	264	397	558	745	958	294	628	979	1353	1765	2213	2697
30	70	160	271	407	570	759	976	292	621	984	1371	1795	2255	2752
31	73	165	279	417	582	774	993	292	613	989	1388	1824	2297	2806
32	75	170	286	427	595	789	1010	292	603	982	1394	1843	2327	2849
33	78	175	294	437	607	804	1027	292	590	954	1378	1839	2336	2870
34	80	180	301	447	619	819	1045	292	584	930	1355	1828	2338	2884
35	83	185	308	457	632	833	1062	292	584	910	1309	1779	2301	2859
36	85	190	316	466	644	848	1079	292	584	887	1257	1692	2207	2778
37	88	194	323	476	656	863	1097	292	584	877	1216	1612	2081	2642
38	90	199	331	486	669	878	1114	292	584	877	1183	1537	1958	2462
39	92	204	338	496	681	893	1131	292	584	877	1169	1479	1848	2293
40	95	209	345	506	693	907	1148	292	584	877	1169	1461	1776	2159

Figure C.03.a: Table of HRRs of Class A Motor & 1.5 ft. Cable Tray Fires

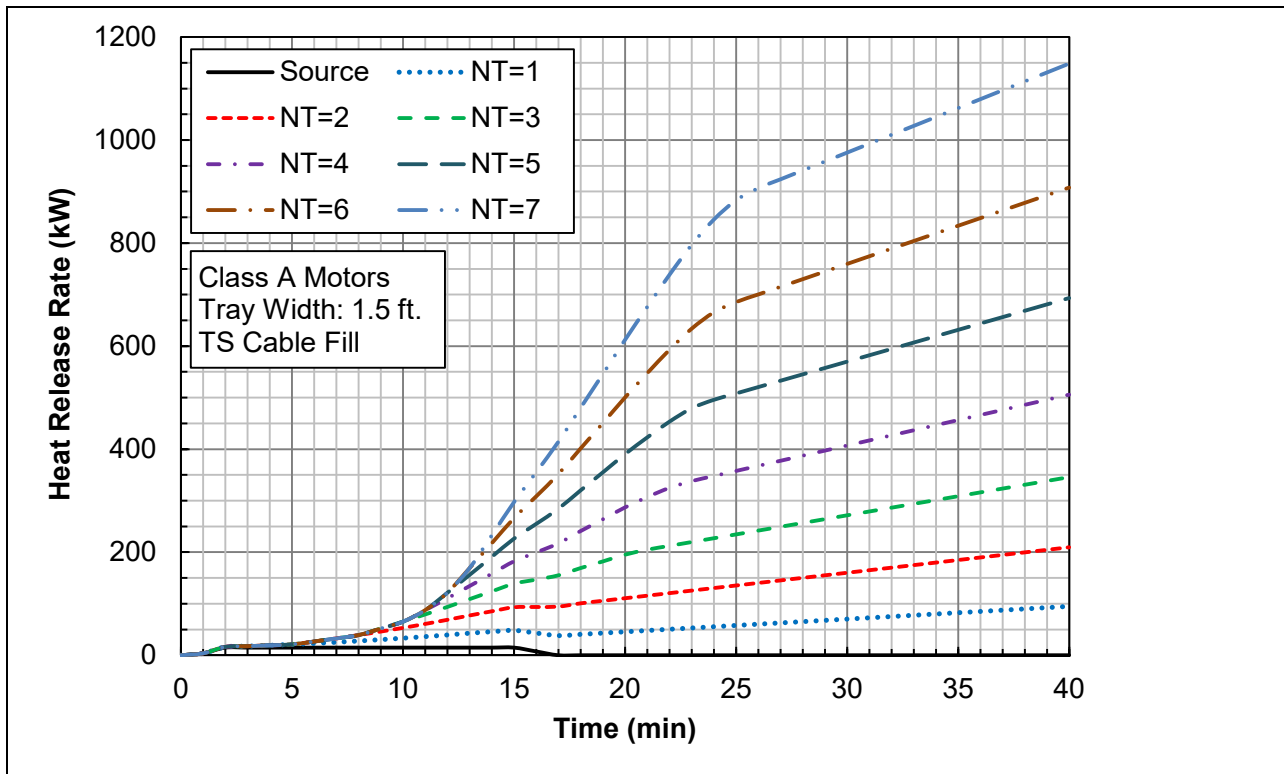


Figure C.03.b: HRR Plots of Class A Motor & 1.5 ft. TS Cable Tray Fires

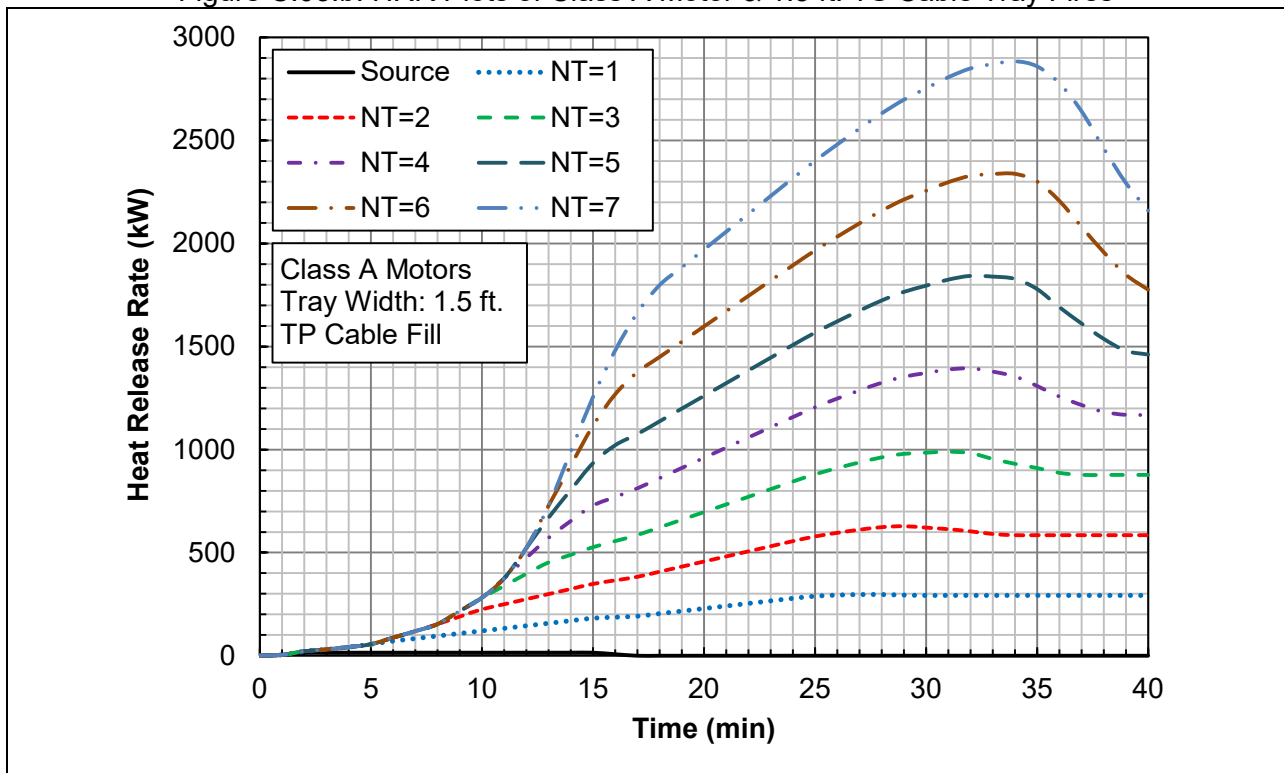


Figure C.03.c: HRR Plots of Class A Motor & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2	17	17	17	17	17	17	17	27	27	27	27	27	27	27
3	20	20	20	20	20	20	20	45	45	45	45	45	45	45
4	24	24	24	24	24	24	24	68	68	68	68	68	68	68
5	27	27	27	27	27	27	27	96	96	96	96	96	96	96
6	31	38	38	38	38	38	38	126	159	159	159	159	159	159
7	36	50	50	50	50	50	50	151	222	222	222	222	222	222
8	41	63	63	63	63	63	63	176	290	290	290	290	290	290
9	46	77	89	89	89	89	89	200	364	417	417	417	417	417
10	51	91	115	115	115	115	115	225	434	547	547	547	547	547
11	57	106	143	160	160	160	160	250	483	660	734	734	734	734
12	64	122	172	206	227	227	227	275	533	779	932	1027	1027	1027
13	71	139	203	254	297	323	323	299	582	889	1127	1322	1438	1438
14	76	155	233	302	367	419	450	324	632	963	1291	1591	1827	1964
15	81	171	263	350	438	517	579	349	681	1037	1441	1852	2214	2491
16	79	180	286	392	502	609	702	366	723	1103	1532	2034	2527	2951
17	76	189	310	435	569	703	829	383	765	1170	1624	2150	2749	3325
18	81	201	338	482	640	802	960	408	814	1244	1722	2273	2897	3594
19	86	211	364	528	710	900	1091	432	863	1318	1821	2397	3045	3767
20	91	221	390	574	781	1000	1224	457	913	1392	1920	2520	3194	3940
21	96	231	409	614	845	1094	1352	482	962	1466	2019	2644	3342	4113
22	101	241	424	650	907	1185	1477	506	1012	1540	2117	2767	3490	4285
23	106	251	439	676	959	1267	1593	531	1061	1614	2216	2891	3638	4458
24	111	261	454	696	992	1331	1691	556	1110	1689	2315	3014	3786	4631
25	116	270	469	716	1016	1371	1766	577	1156	1759	2410	3134	3931	4800
26	121	280	484	735	1041	1400	1813	588	1191	1819	2495	3243	4065	4959
27	126	290	498	755	1066	1430	1848	593	1222	1874	2574	3347	4194	5113
28	131	300	513	775	1090	1459	1882	593	1246	1923	2648	3446	4317	5261
29	136	310	528	795	1115	1489	1917	588	1256	1957	2707	3530	4425	5394
30	140	320	543	814	1140	1519	1951	584	1242	1968	2743	3590	4510	5503
31	145	330	558	834	1164	1548	1986	584	1227	1978	2777	3649	4594	5612
32	150	340	572	854	1189	1578	2020	584	1206	1965	2789	3685	4655	5698
33	155	349	587	874	1214	1608	2055	584	1181	1908	2757	3678	4673	5740
34	160	359	602	893	1239	1637	2090	584	1169	1861	2710	3656	4675	5767
35	165	369	617	913	1263	1667	2124	584	1169	1820	2618	3558	4601	5718
36	170	379	632	933	1288	1696	2159	584	1169	1773	2515	3383	4414	5555
37	175	389	646	953	1313	1726	2193	584	1169	1753	2433	3224	4162	5284
38	180	399	661	972	1337	1756	2228	584	1169	1753	2366	3075	3915	4924
39	185	409	676	992	1362	1785	2262	584	1169	1753	2338	2959	3696	4587
40	190	419	691	1012	1387	1815	2297	584	1169	1753	2338	2922	3552	4318

Figure C.04.a: Table of HRRs of Class A Motor & 3.0 ft. Cable Tray Fires

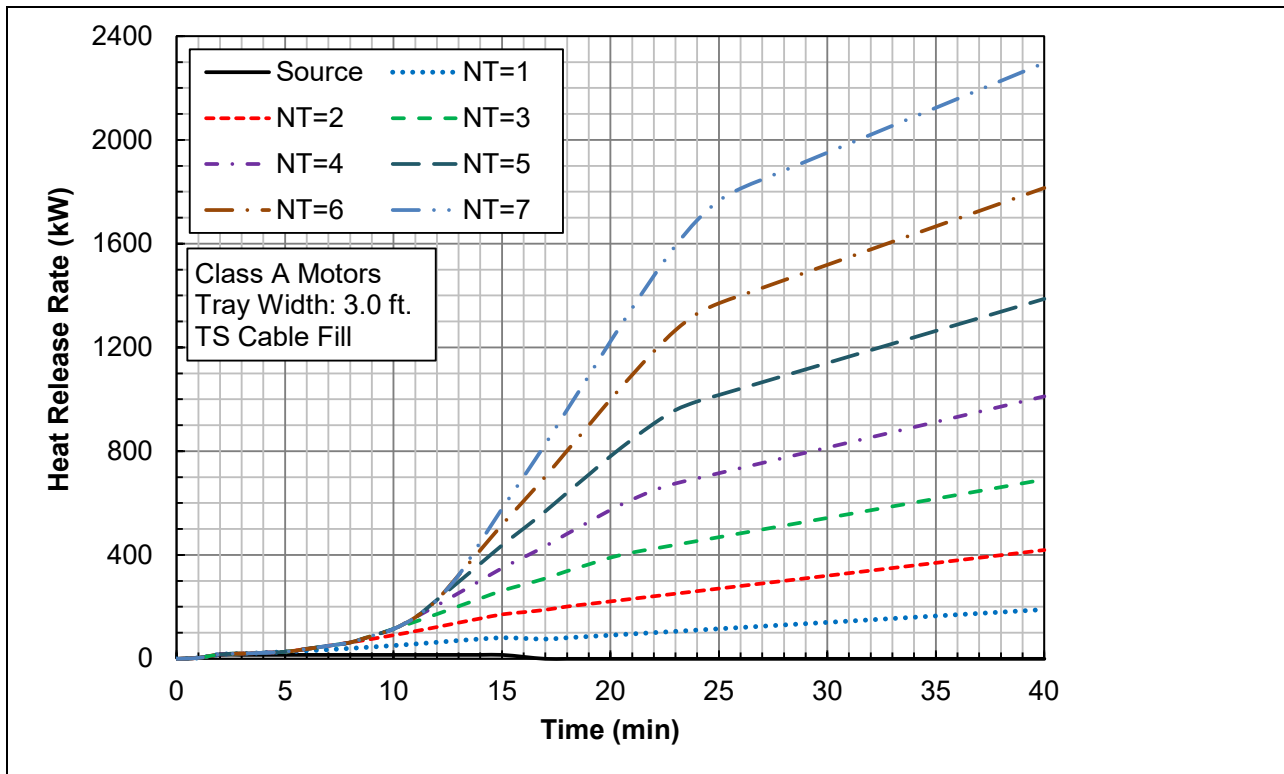


Figure C.04.b: HRR Plots of Class A Motor & 3.0 ft. TS Cable Tray Fires

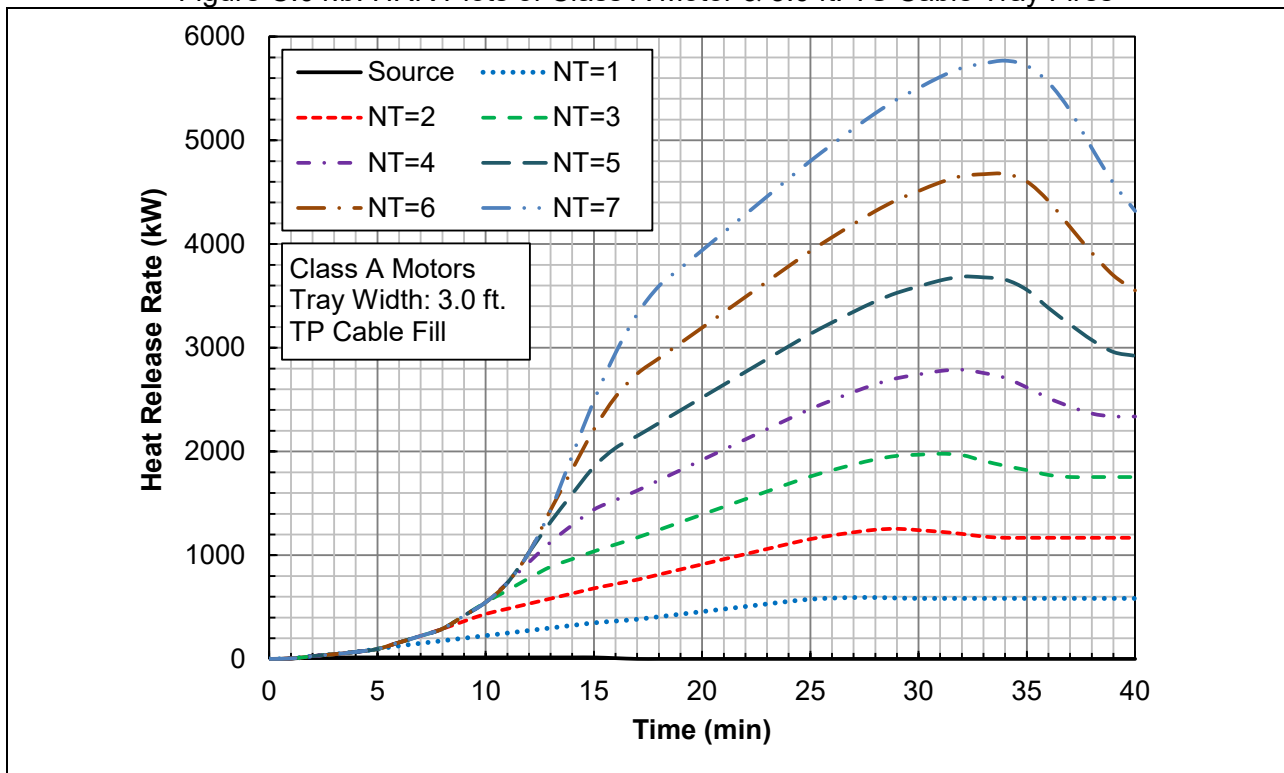
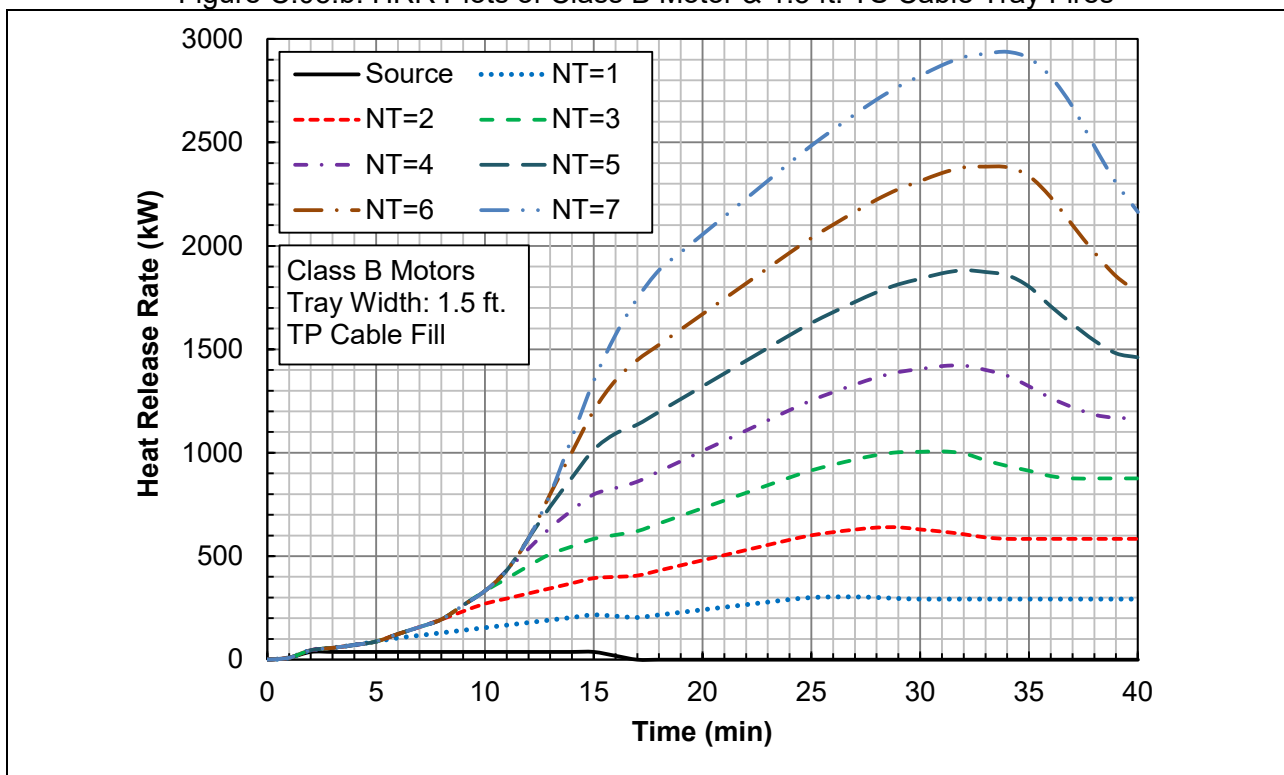
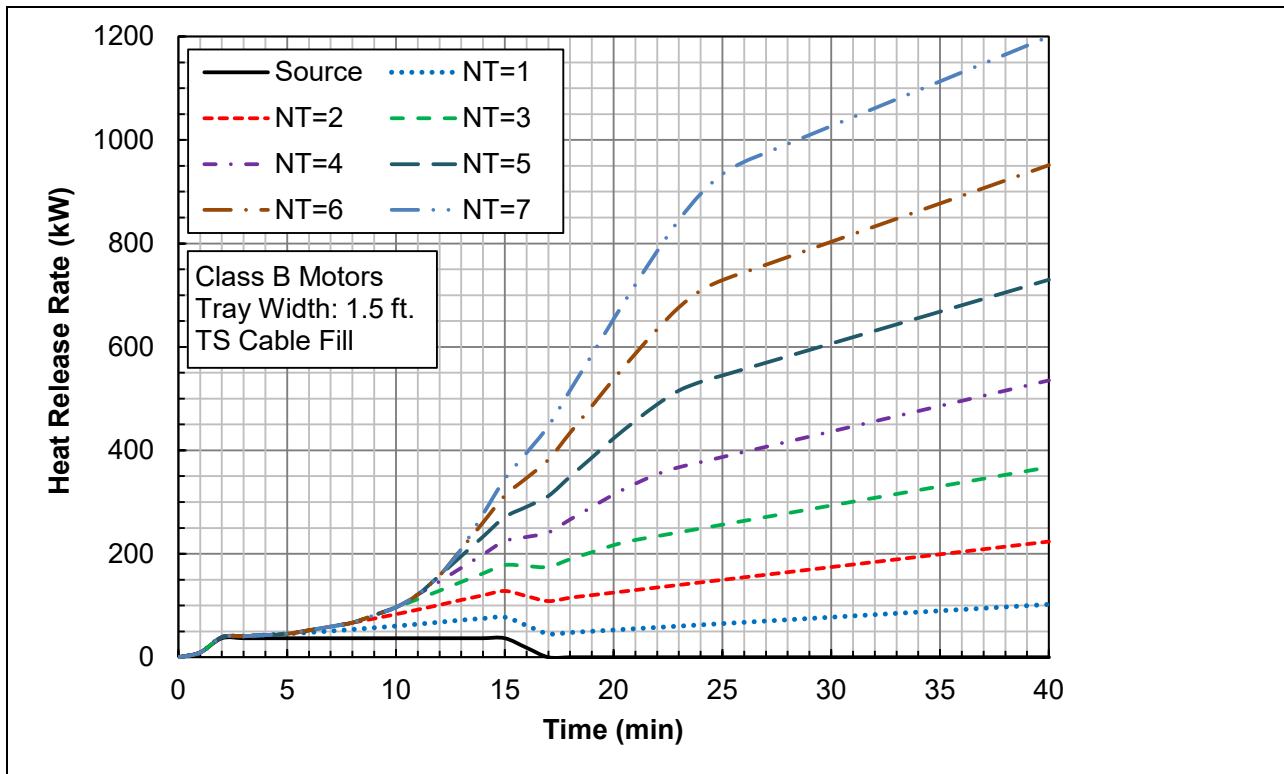


Figure C.04.c: HRR Plots of Class A Motor & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	9	9	9	9	9	9	9	9	9	9	9	9	9	9
2	39	39	39	39	39	39	39	46	46	46	46	46	46	46
3	41	41	41	41	41	41	41	57	57	57	57	57	57	57
4	43	43	43	43	43	43	43	71	71	71	71	71	71	71
5	45	45	45	45	45	45	45	88	88	88	88	88	88	88
6	48	52	52	52	52	52	52	105	124	124	124	124	124	124
7	51	59	59	59	59	59	59	117	158	158	158	158	158	158
8	54	67	67	67	67	67	67	130	195	195	195	195	195	195
9	57	75	82	82	82	82	82	142	234	263	263	263	263	263
10	61	83	97	97	97	97	97	154	271	332	332	332	332	332
11	64	92	112	121	121	121	121	167	296	392	431	431	431	431
12	68	101	129	147	158	158	158	179	320	454	536	586	586	586
13	72	111	146	173	196	209	209	191	345	510	637	740	800	800
14	75	120	162	199	233	261	277	204	370	547	722	880	1003	1074
15	78	128	178	225	271	312	345	216	394	585	799	1014	1203	1347
16	61	118	176	233	291	347	395	210	401	603	830	1093	1350	1569
17	45	109	175	241	312	382	447	204	407	622	861	1136	1448	1746
18	48	115	190	266	349	434	516	216	431	659	910	1198	1522	1882
19	50	120	203	290	386	485	584	228	456	696	959	1259	1596	1969
20	53	125	217	315	423	538	654	241	481	733	1009	1321	1670	2055
21	55	130	227	336	457	587	720	253	506	770	1058	1383	1744	2142
22	58	135	234	354	489	634	785	265	530	807	1107	1445	1818	2228
23	60	140	242	367	516	676	845	278	555	844	1157	1506	1892	2315
24	63	145	249	377	532	709	896	290	580	881	1206	1568	1966	2401
25	65	150	256	387	545	729	934	300	602	915	1253	1627	2038	2485
26	68	155	264	397	557	744	958	303	617	943	1293	1679	2102	2561
27	70	160	271	407	569	759	975	303	629	967	1330	1729	2164	2636
28	73	165	279	417	582	774	992	300	639	990	1364	1776	2223	2707
29	75	170	286	427	594	788	1010	295	640	1003	1390	1814	2274	2770
30	78	175	293	437	606	803	1027	292	630	1005	1405	1840	2313	2821
31	80	179	301	446	619	818	1044	292	620	1007	1419	1867	2352	2873
32	83	184	308	456	631	833	1061	292	607	997	1421	1882	2379	2912
33	85	189	316	466	644	848	1079	292	591	964	1400	1873	2383	2929
34	87	194	323	476	656	863	1096	292	584	937	1373	1858	2379	2938
35	90	199	330	486	668	877	1113	292	584	913	1321	1803	2337	2907
36	92	204	338	496	681	892	1131	292	584	888	1265	1708	2234	2817
37	95	209	345	506	693	907	1148	292	584	877	1220	1622	2100	2672
38	97	214	353	516	705	922	1165	292	584	877	1184	1542	1969	2482
39	100	219	360	525	718	937	1182	292	584	877	1169	1480	1853	2304
40	102	224	367	535	730	951	1200	292	584	877	1169	1461	1777	2164

Figure C.05.a: Table of HRRs of Class B Motor & 1.5 ft. Cable Tray Fires



Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	9	9	9	9	9	9	9	9	9	9	9	9	9	9
2	41	41	41	41	41	41	41	55	55	55	55	55	55	55
3	45	45	45	45	45	45	45	77	77	77	77	77	77	77
4	49	49	49	49	49	49	49	105	105	105	105	105	105	105
5	54	54	54	54	54	54	54	139	139	139	139	139	139	139
6	59	67	67	67	67	67	67	173	211	211	211	211	211	211
7	65	82	82	82	82	82	82	197	279	279	279	279	279	279
8	71	97	97	97	97	97	97	222	352	352	352	352	352	352
9	77	113	126	126	126	126	126	247	431	490	490	490	490	490
10	84	130	156	156	156	156	156	272	505	628	628	628	628	628
11	91	147	188	206	206	206	206	296	554	746	826	826	826	826
12	99	166	220	256	279	279	279	321	604	870	1034	1134	1134	1134
13	107	185	254	309	354	381	381	346	653	984	1238	1443	1564	1564
14	113	203	287	361	429	484	516	370	702	1058	1407	1723	1969	2110
15	118	220	319	412	505	588	652	395	752	1132	1561	1992	2369	2657
16	104	218	334	447	563	675	772	401	783	1188	1641	2167	2681	3120
17	91	217	349	482	623	764	894	407	814	1243	1721	2272	2896	3492
18	96	231	379	533	699	868	1032	432	863	1317	1820	2395	3044	3765
19	101	240	406	581	772	971	1169	457	912	1391	1919	2519	3192	3938
20	106	250	433	629	846	1075	1308	481	962	1465	2017	2642	3340	4111
21	111	260	453	671	914	1174	1441	506	1011	1539	2116	2766	3488	4283
22	116	270	468	708	978	1268	1570	531	1060	1614	2215	2889	3636	4456
23	121	280	483	735	1031	1353	1690	555	1110	1688	2314	3013	3784	4629
24	126	290	498	755	1065	1418	1792	580	1159	1762	2412	3136	3932	4802
25	130	300	513	774	1090	1458	1868	600	1203	1831	2506	3254	4075	4969
26	135	310	527	794	1114	1488	1915	605	1233	1885	2585	3358	4204	5123
27	140	319	542	814	1139	1518	1950	605	1258	1935	2660	3457	4328	5271
28	145	329	557	834	1164	1547	1985	600	1278	1979	2729	3551	4446	5414
29	150	339	572	853	1188	1577	2019	590	1280	2006	2781	3628	4547	5540
30	155	349	587	873	1213	1607	2054	584	1260	2010	2809	3681	4625	5643
31	160	359	602	893	1238	1636	2088	584	1239	2014	2838	3734	4704	5746
32	165	369	616	913	1262	1666	2123	584	1214	1995	2843	3764	4758	5825
33	170	379	631	932	1287	1695	2157	584	1183	1928	2801	3747	4765	5857
34	175	389	646	952	1312	1725	2192	584	1169	1873	2745	3716	4759	5875
35	180	398	661	972	1336	1755	2227	584	1169	1827	2642	3605	4673	5814
36	185	408	676	992	1361	1784	2261	584	1169	1775	2529	3415	4469	5634
37	190	418	690	1011	1386	1814	2296	584	1169	1753	2440	3244	4200	5344
38	195	428	705	1031	1410	1844	2330	584	1169	1753	2368	3084	3937	4963
39	200	438	720	1051	1435	1873	2365	584	1169	1753	2338	2961	3706	4608
40	205	448	735	1071	1460	1903	2399	584	1169	1753	2338	2922	3554	4327

Figure C.06.a: Table of HRRs of Class B Motor & 3.0 ft. Cable Tray Fires

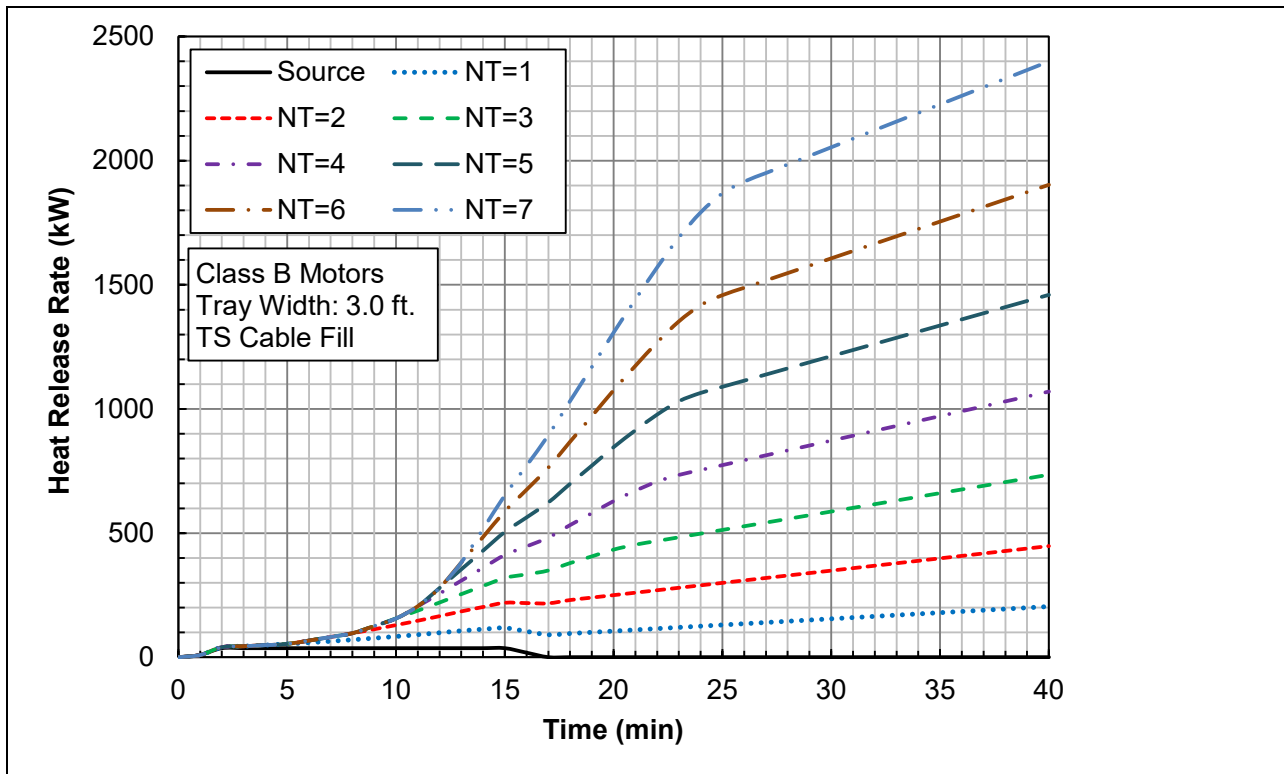


Figure C.06.b: HRR Plots of Class B Motor & 3.0 ft. TS Cable Tray Fires

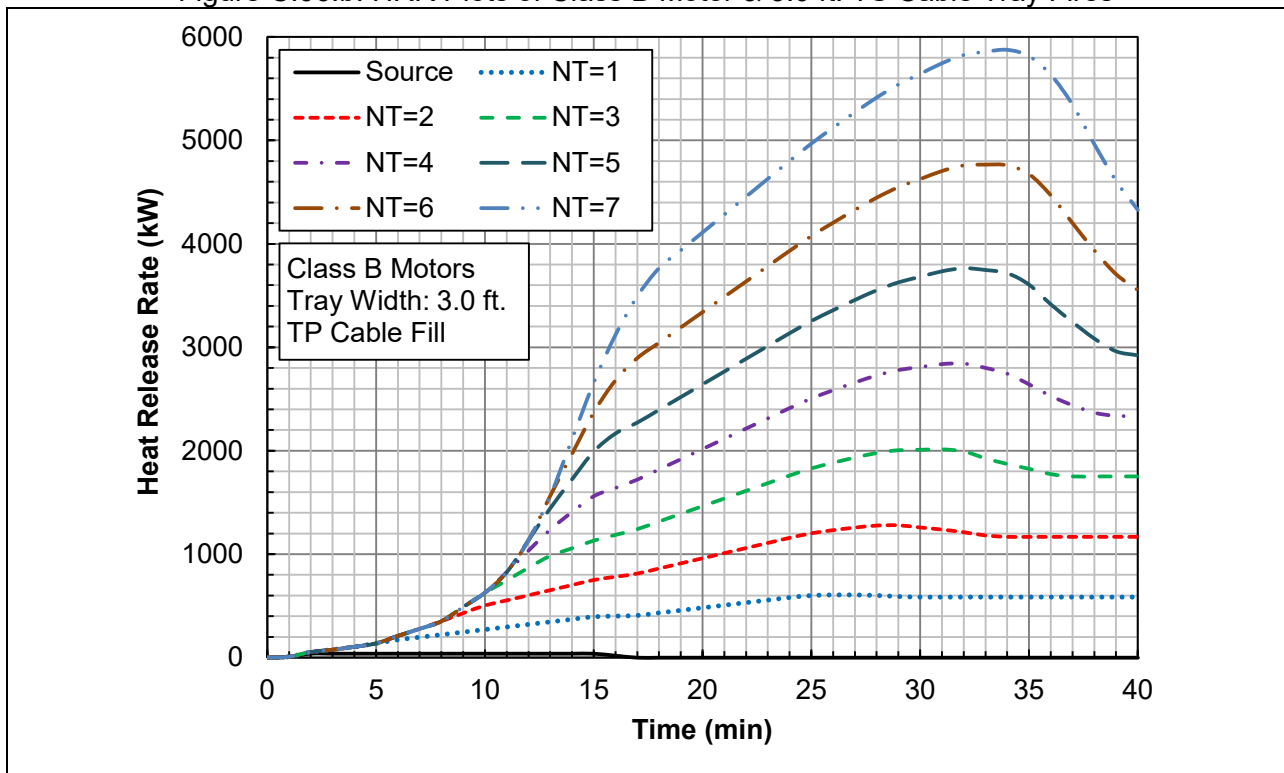
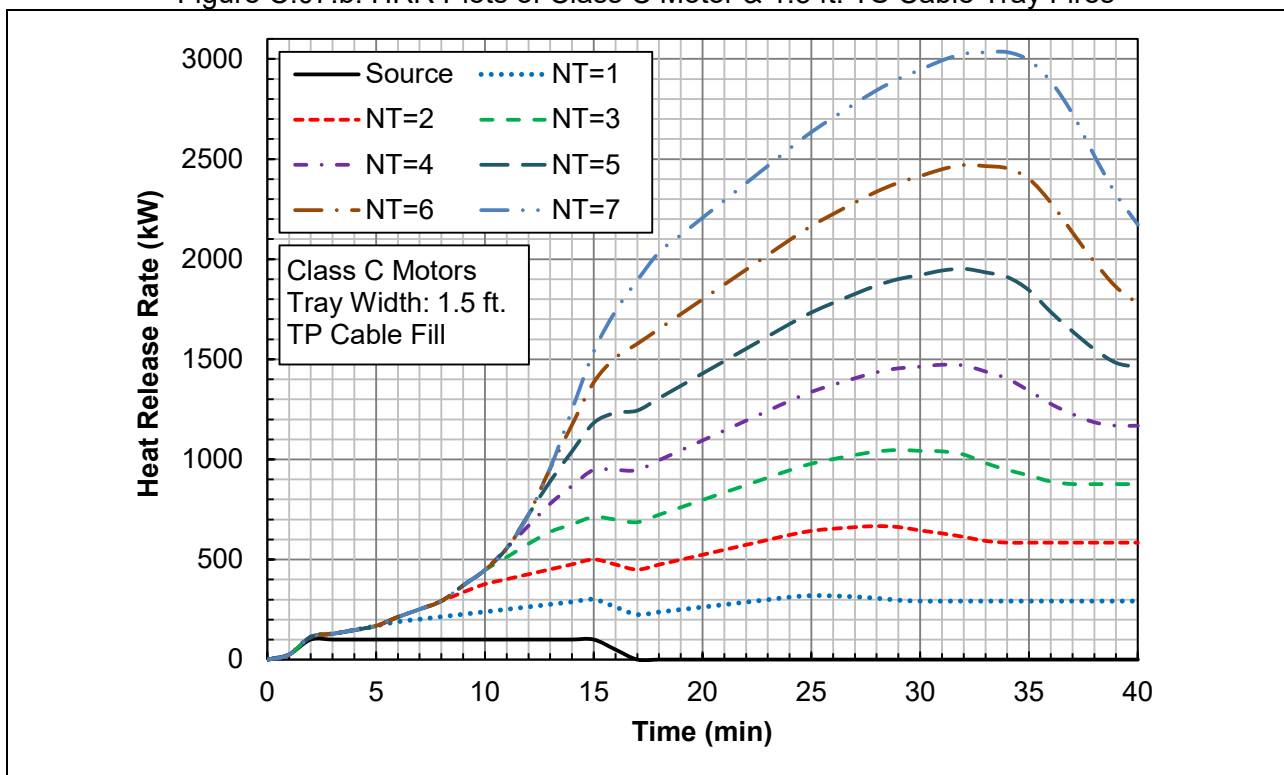
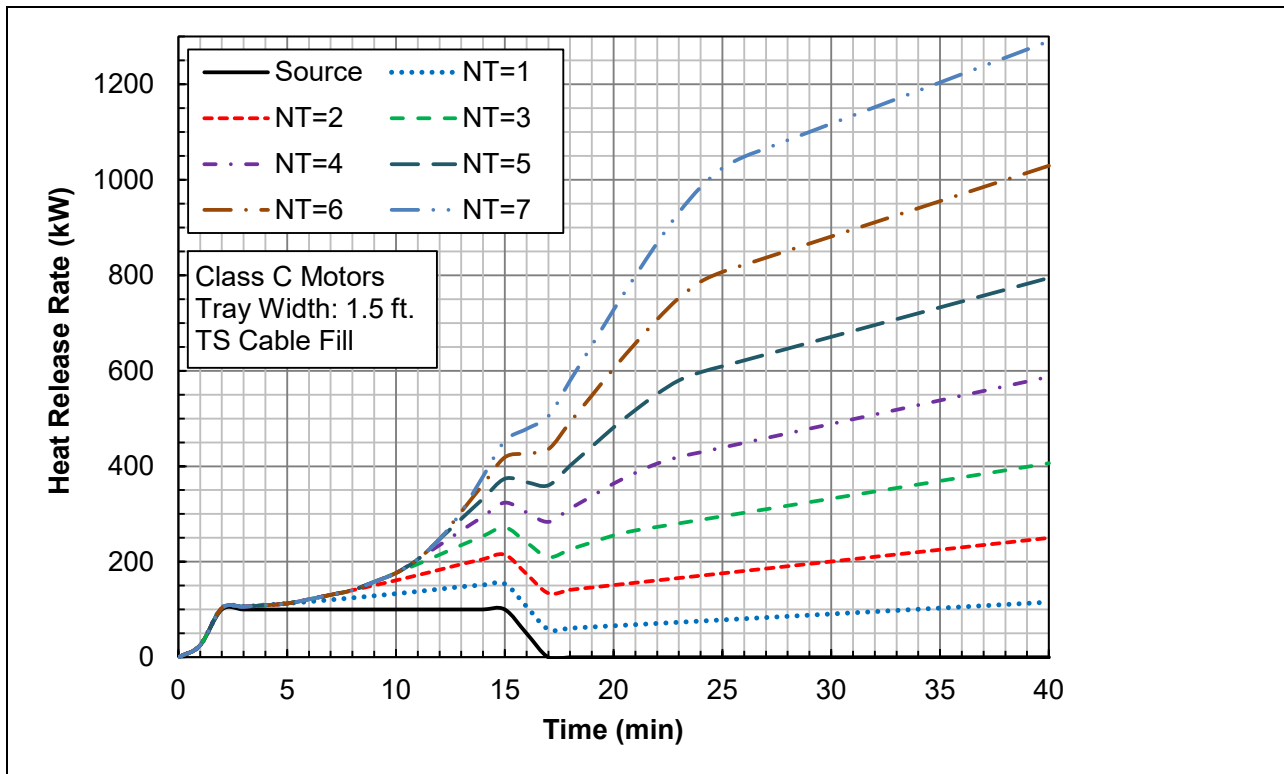


Figure C.06.c: HRR Plots of Class B Motor & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	25	25	25	25	25	25	25	25	25	25	25	25	25	25
2	103	103	103	103	103	103	103	113	113	113	113	113	113	113
3	106	106	106	106	106	106	106	129	129	129	129	129	129	129
4	109	109	109	109	109	109	109	148	148	148	148	148	148	148
5	113	113	113	113	113	113	113	169	169	169	169	169	169	169
6	116	122	122	122	122	122	122	190	213	213	213	213	213	213
7	120	131	131	131	131	131	131	202	252	252	252	252	252	252
8	124	140	140	140	140	140	140	214	293	293	293	293	293	293
9	128	151	158	158	158	158	158	227	337	371	371	371	371	371
10	133	161	176	176	176	176	176	239	377	448	448	448	448	448
11	138	172	195	205	205	205	205	251	402	512	556	556	556	556
12	142	183	215	235	247	247	247	264	427	578	669	724	724	724
13	147	195	235	265	290	305	305	276	451	638	779	891	956	956
14	151	205	254	295	332	362	379	288	476	675	868	1040	1172	1247
15	154	215	272	324	374	419	453	301	501	712	948	1182	1385	1538
16	106	174	241	303	367	427	478	263	475	699	948	1232	1507	1741
17	58	134	210	283	360	436	505	225	450	686	947	1244	1577	1894
18	61	141	226	311	401	492	580	238	475	724	996	1306	1652	2034
19	63	146	241	337	441	548	653	250	499	761	1046	1367	1726	2120
20	66	151	255	364	482	604	728	262	524	798	1095	1429	1800	2207
21	68	156	266	386	518	657	799	275	549	835	1145	1491	1874	2293
22	71	161	273	405	552	707	868	287	573	872	1194	1553	1948	2379
23	73	166	280	419	580	752	932	299	598	909	1243	1614	2022	2466
24	76	171	288	429	597	786	985	312	623	946	1293	1676	2096	2552
25	78	176	295	439	610	807	1025	320	643	979	1338	1734	2166	2635
26	81	181	303	449	622	822	1049	318	654	1001	1373	1781	2226	2707
27	83	186	310	459	634	837	1066	314	662	1022	1406	1826	2283	2776
28	86	191	317	469	647	851	1083	307	667	1039	1436	1868	2338	2843
29	88	196	325	479	659	866	1100	297	662	1047	1455	1901	2382	2900
30	91	200	332	488	671	881	1118	292	645	1042	1463	1921	2415	2945
31	93	205	340	498	684	896	1135	292	631	1040	1473	1943	2449	2992
32	95	210	347	508	696	911	1152	292	613	1024	1470	1952	2470	3026
33	98	215	354	518	708	926	1170	292	593	981	1440	1934	2465	3032
34	100	220	362	528	721	940	1187	292	584	948	1404	1911	2454	3034
35	103	225	369	538	733	955	1204	292	584	920	1343	1845	2400	2992
36	105	230	377	548	745	970	1221	292	584	890	1277	1736	2283	2887
37	108	235	384	558	758	985	1239	292	584	877	1227	1639	2133	2725
38	110	240	392	567	770	1000	1256	292	584	877	1186	1550	1988	2516
39	113	245	399	577	782	1014	1273	292	584	877	1169	1482	1861	2323
40	115	250	406	587	795	1029	1290	292	584	877	1169	1461	1779	2172

Figure C.07.a: Table of HRRs of Class C Motor & 1.5 ft. Cable Tray Fires



Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	25	25	25	25	25	25	25	25	25	25	25	25	25	25
2	106	106	106	106	106	106	106	127	127	127	127	127	127	127
3	112	112	112	112	112	112	112	159	159	159	159	159	159	159
4	118	118	118	118	118	118	118	196	196	196	196	196	196	196
5	125	125	125	125	125	125	125	238	238	238	238	238	238	238
6	133	143	143	143	143	143	143	279	326	326	326	326	326	326
7	140	162	162	162	162	162	162	304	404	404	404	404	404	404
8	148	181	181	181	181	181	181	328	486	486	486	486	486	486
9	157	201	216	216	216	216	216	353	574	642	642	642	642	642
10	166	222	253	253	253	253	253	378	654	795	795	795	795	795
11	175	244	290	310	310	310	310	402	704	923	1012	1012	1012	1012
12	185	266	329	370	394	394	394	427	753	1056	1238	1347	1347	1347
13	195	290	369	430	480	509	509	452	802	1177	1458	1681	1811	1811
14	202	310	407	489	564	623	657	477	852	1251	1636	1979	2244	2394
15	207	329	444	547	648	737	806	501	901	1325	1797	2264	2669	2975
16	162	299	431	557	684	803	907	476	901	1349	1845	2415	2965	3432
17	117	269	419	567	721	871	1010	451	900	1373	1894	2488	3155	3788
18	122	282	452	622	803	985	1159	475	949	1447	1993	2612	3303	4068
19	127	292	481	674	882	1096	1306	500	999	1521	2092	2735	3451	4240
20	132	302	510	727	963	1209	1456	525	1048	1595	2190	2858	3599	4413
21	137	312	531	772	1036	1314	1598	549	1098	1669	2289	2982	3748	4586
22	142	322	546	811	1104	1415	1736	574	1147	1743	2388	3105	3896	4759
23	147	332	561	839	1160	1505	1863	599	1196	1817	2487	3229	4044	4932
24	151	342	576	858	1195	1573	1969	623	1246	1891	2585	3352	4192	5105
25	156	352	590	878	1219	1614	2049	640	1287	1957	2676	3467	4332	5269
26	161	361	605	898	1244	1644	2097	636	1308	2003	2746	3562	4452	5414
27	166	371	620	918	1269	1673	2132	627	1324	2043	2811	3652	4566	5553
28	171	381	635	937	1293	1703	2166	613	1334	2079	2871	3737	4675	5687
29	176	391	650	957	1318	1733	2201	594	1324	2094	2911	3801	4764	5801
30	181	401	665	977	1343	1762	2235	584	1291	2085	2927	3842	4830	5890
31	186	411	679	997	1367	1792	2270	584	1261	2080	2946	3886	4899	5984
32	191	421	694	1016	1392	1821	2304	584	1226	2048	2939	3904	4941	6051
33	196	431	709	1036	1417	1851	2339	584	1186	1963	2879	3868	4930	6065
34	201	440	724	1056	1441	1881	2374	584	1169	1895	2807	3821	4908	6067
35	206	450	739	1076	1466	1910	2408	584	1169	1840	2686	3689	4801	5985
36	211	460	753	1095	1491	1940	2443	584	1169	1779	2555	3472	4566	5774
37	216	470	768	1115	1516	1970	2477	584	1169	1753	2453	3278	4265	5450
38	221	480	783	1135	1540	1999	2512	584	1169	1753	2372	3101	3976	5033
39	226	490	798	1155	1565	2029	2546	584	1169	1753	2338	2965	3722	4647
40	230	500	813	1174	1590	2058	2581	584	1169	1753	2338	2922	3557	4344

Figure C.08.a: Table of HRRs of Class C Motor & 3.0 ft. Cable Tray Fires

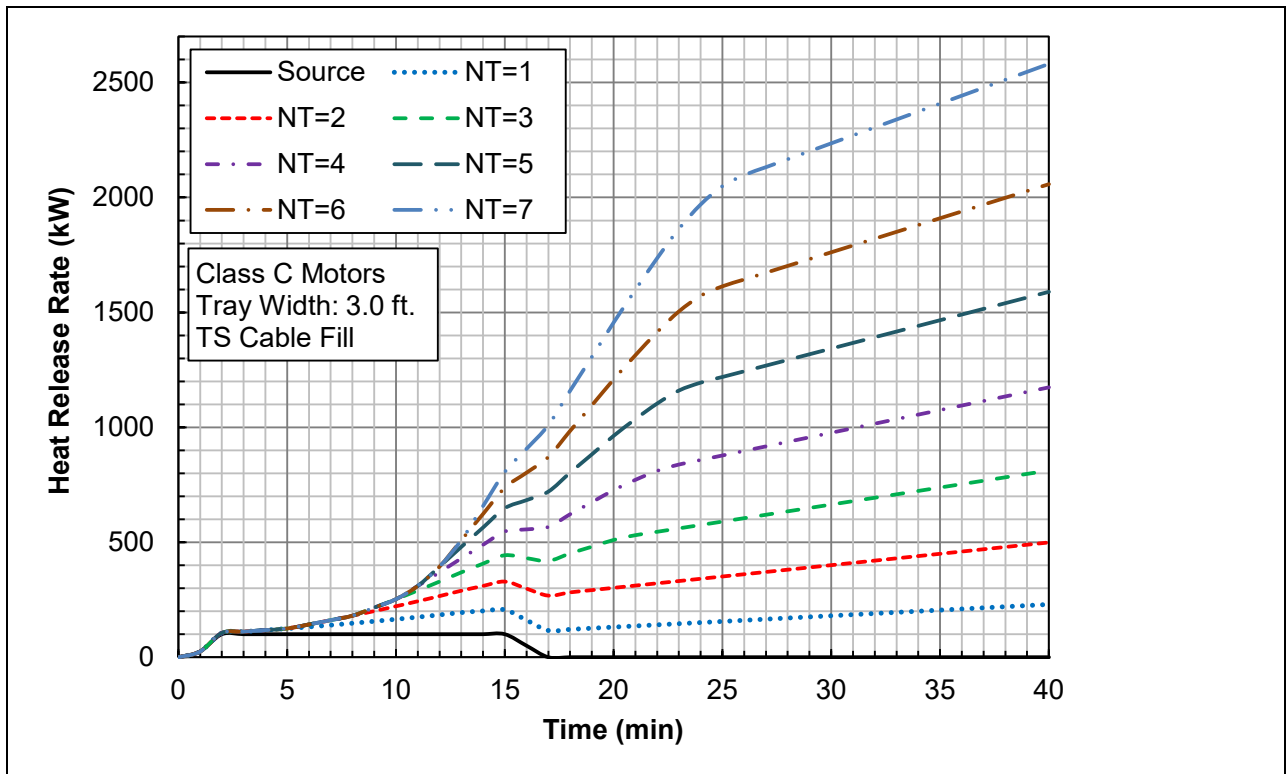


Figure C.08.b: HRR Plots of Class C Motor & 3.0 ft. TS Cable Tray Fires

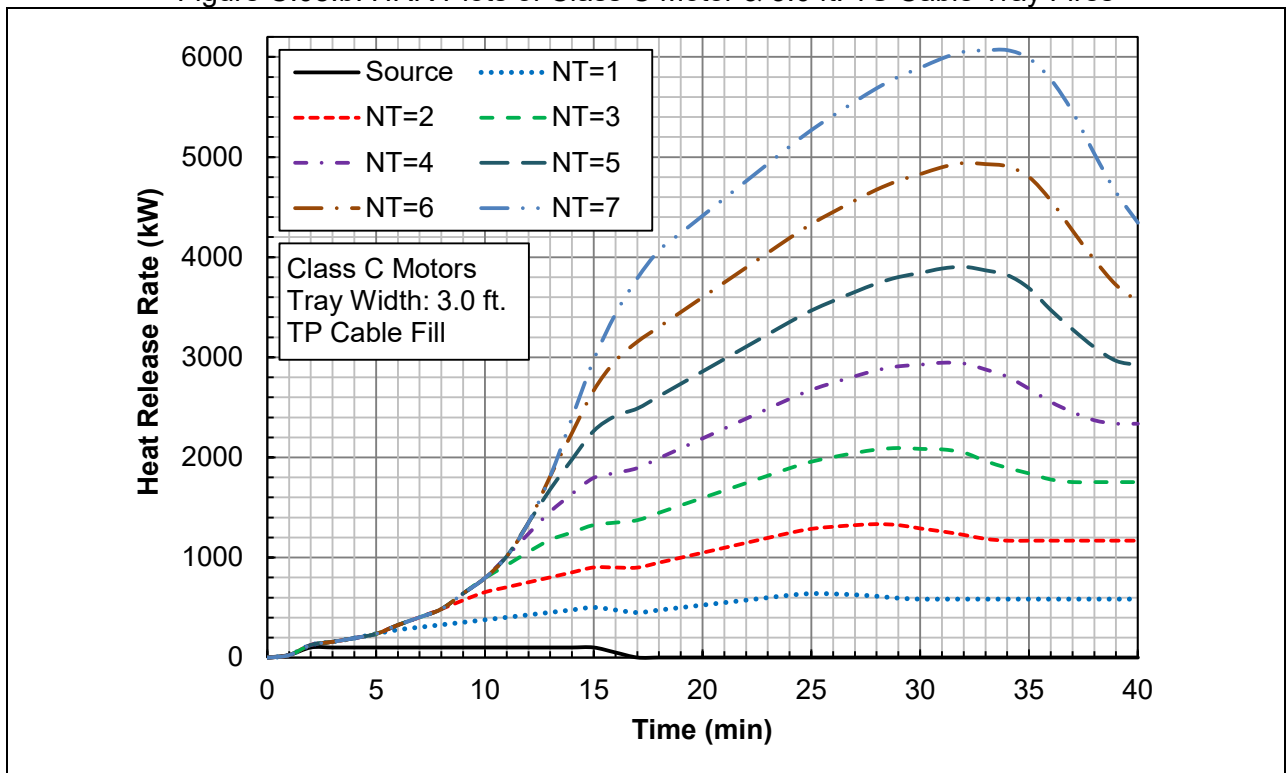


Figure C.08.c: HRR Plots of Class C Motor & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	30	30	30	30	30	30	30	30	30	30	30	30	30	30
1	30	30	30	30	30	30	30	30	30	30	30	30	30	30
2	31	31	31	31	31	31	31	37	37	37	37	37	37	37
3	33	33	33	33	33	33	33	47	47	47	47	47	47	47
4	35	35	35	35	35	35	35	60	60	60	60	60	60	60
5	37	37	37	37	37	37	37	75	75	75	75	75	75	75
6	39	43	43	43	43	43	43	91	108	108	108	108	108	108
7	42	50	50	50	50	50	50	103	141	141	141	141	141	141
8	44	57	57	57	57	57	57	115	176	176	176	176	176	176
9	47	64	70	70	70	70	70	128	214	242	242	242	242	242
10	50	72	84	84	84	84	84	140	250	308	308	308	308	308
11	51	77	96	104	104	104	104	149	271	363	401	401	401	401
12	51	82	108	125	136	136	136	159	293	420	499	548	548	548
13	52	88	121	147	169	183	183	168	315	473	596	695	754	754
14	52	93	134	169	202	229	245	178	336	507	676	829	949	1018
15	51	99	146	191	236	276	308	187	358	541	748	958	1142	1283
16	51	104	159	213	270	324	372	196	380	575	795	1051	1301	1517
17	50	109	172	236	305	373	437	206	402	609	841	1109	1414	1706
18	50	113	184	258	338	421	501	215	423	643	887	1168	1485	1839
19	49	115	194	278	371	468	565	224	445	677	934	1227	1556	1922
20	49	117	204	299	404	516	629	234	467	711	980	1285	1627	2005
21	51	122	214	319	437	564	694	246	491	748	1030	1347	1701	2092
22	54	126	221	337	468	610	758	258	516	785	1079	1409	1775	2178
23	56	131	229	350	494	651	817	271	541	822	1128	1471	1849	2265
24	58	136	236	360	511	684	866	283	565	859	1178	1532	1924	2351
25	61	141	244	370	523	704	904	293	588	894	1225	1592	1995	2435
26	63	146	251	380	536	718	928	297	604	923	1266	1646	2061	2514
27	66	151	258	390	548	733	945	299	618	950	1305	1697	2125	2589
28	68	156	266	400	560	748	962	298	630	973	1341	1745	2185	2662
29	71	161	273	410	573	763	980	294	633	989	1369	1785	2238	2727
30	73	166	281	419	585	778	997	292	625	993	1385	1814	2279	2781
31	76	171	288	429	597	792	1014	292	616	997	1401	1842	2320	2834
32	78	176	295	439	610	807	1031	292	605	989	1406	1859	2349	2875
33	81	181	303	449	622	822	1049	292	591	958	1388	1853	2356	2894
34	83	186	310	459	634	837	1066	292	584	933	1362	1840	2355	2906
35	86	191	318	469	647	852	1083	292	584	911	1314	1789	2316	2879
36	88	196	325	479	659	867	1101	292	584	887	1260	1698	2218	2794
37	91	201	332	489	672	881	1118	292	584	877	1218	1616	2089	2654
38	93	205	340	498	684	896	1135	292	584	877	1183	1539	1962	2470
39	96	210	347	508	696	911	1152	292	584	877	1169	1480	1850	2298
40	98	215	355	518	709	926	1170	292	584	877	1169	1461	1776	2161

Figure C.09.a: Table of HRRs of Class A Dry Transformer & 1.5 ft. Cable Tray Fires

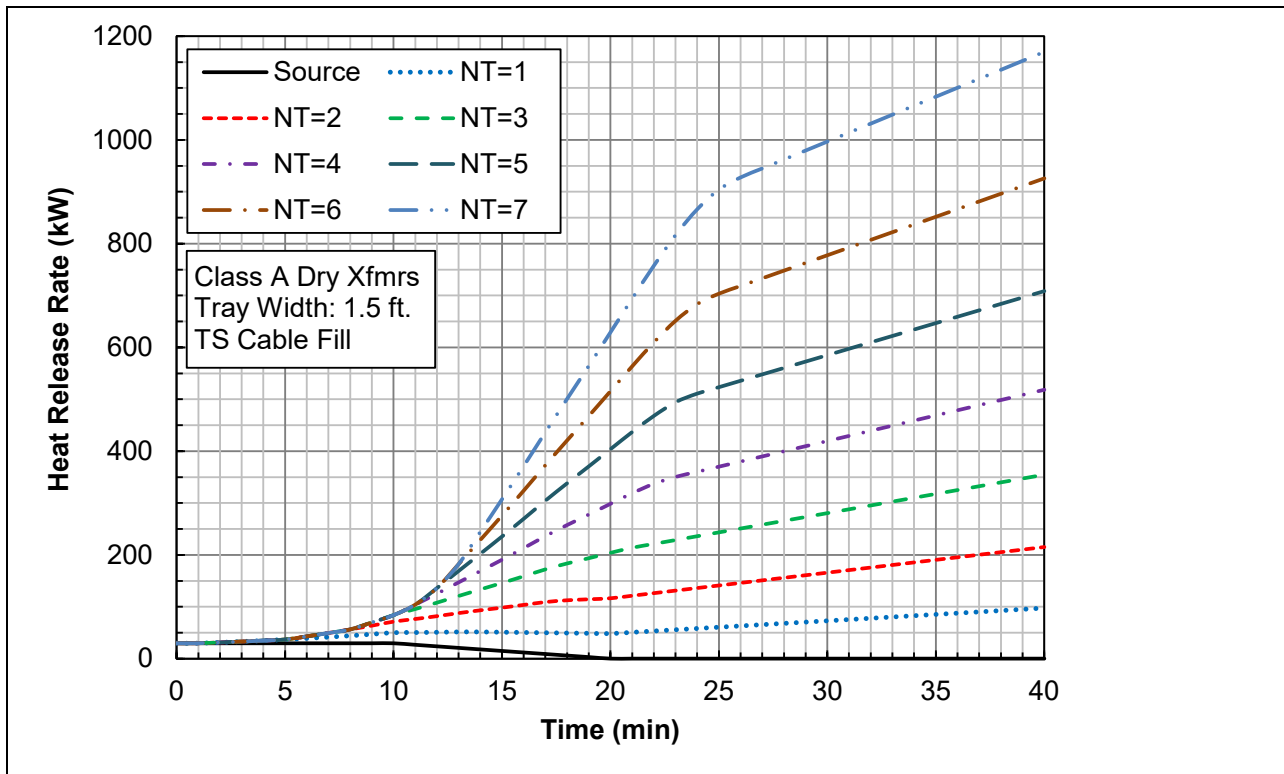


Figure C.09.b: HRR Plots of Class A Dry Transformer & 1.5 ft. TS Cable Tray Fires

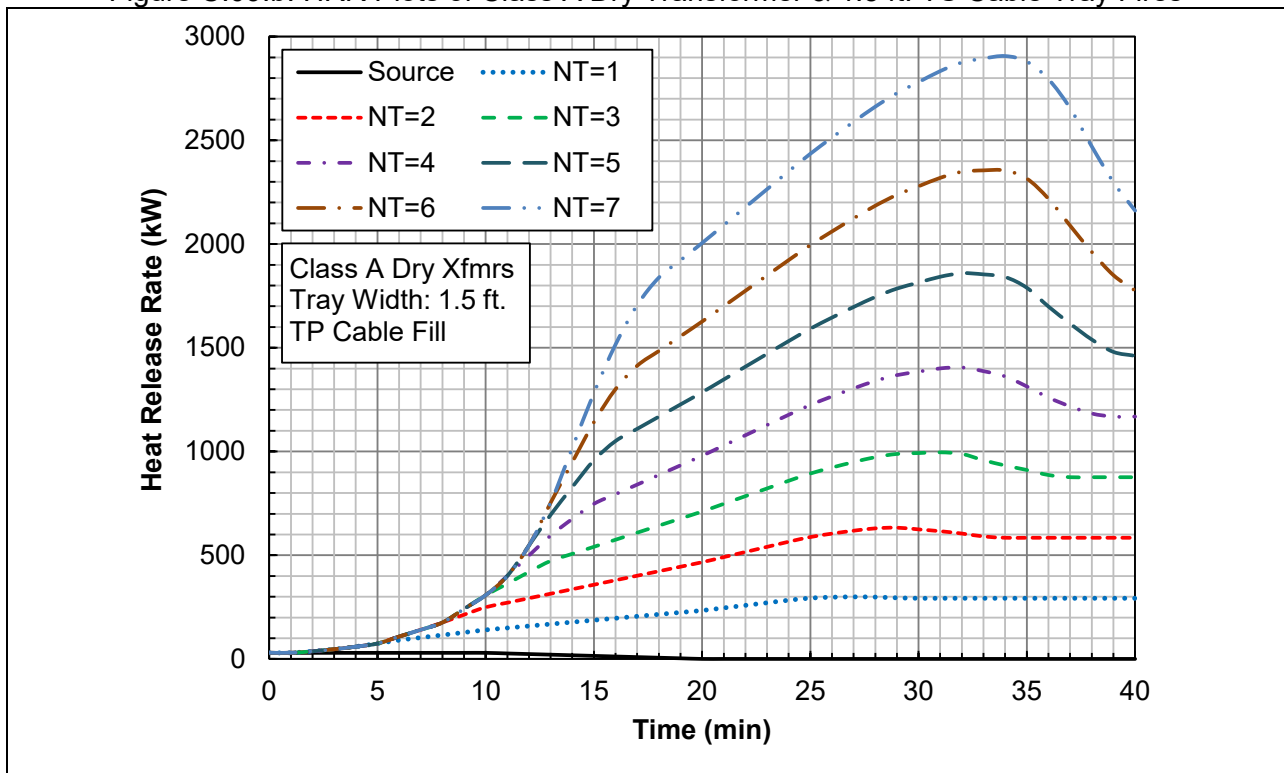


Figure C.09.c: HRR Plots of Class A Dry Transformer & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	30	30	30	30	30	30	30	30	30	30	30	30	30	30
1	30	30	30	30	30	30	30	30	30	30	30	30	30	30
2	33	33	33	33	33	33	33	45	45	45	45	45	45	45
3	36	36	36	36	36	36	36	64	64	64	64	64	64	64
4	40	40	40	40	40	40	40	89	89	89	89	89	89	89
5	44	44	44	44	44	44	44	119	119	119	119	119	119	119
6	49	56	56	56	56	56	56	152	187	187	187	187	187	187
7	54	69	69	69	69	69	69	176	252	252	252	252	252	252
8	59	83	83	83	83	83	83	201	322	322	322	322	322	322
9	65	98	110	110	110	110	110	226	398	453	453	453	453	453
10	71	113	138	138	138	138	138	250	469	586	586	586	586	586
11	74	126	165	182	182	182	182	272	516	699	775	775	775	775
12	78	140	192	227	249	249	249	294	562	817	975	1072	1072	1072
13	83	155	221	273	318	344	344	315	609	925	1170	1369	1487	1487
14	86	169	249	320	387	440	471	337	655	996	1333	1640	1880	2018
15	88	182	277	367	456	537	600	359	701	1067	1482	1901	2269	2551
16	89	196	306	415	528	636	731	380	748	1138	1577	2089	2591	3021
17	91	210	335	464	601	737	865	402	794	1209	1673	2210	2819	3403
18	93	219	361	509	670	836	996	424	840	1281	1769	2330	2964	3671
19	95	226	384	553	739	933	1126	445	887	1352	1865	2451	3109	3841
20	97	233	408	597	808	1031	1259	467	933	1423	1960	2571	3254	4011
21	102	243	428	638	874	1127	1389	492	983	1497	2059	2694	3403	4184
22	107	253	443	674	936	1220	1515	517	1032	1571	2158	2818	3551	4356
23	112	263	457	701	989	1303	1633	541	1081	1645	2257	2941	3699	4529
24	117	273	472	720	1022	1367	1733	566	1131	1719	2355	3065	3847	4702
25	122	283	487	740	1047	1407	1809	586	1176	1789	2450	3184	3991	4871
26	127	292	502	760	1071	1437	1856	595	1209	1847	2532	3291	4123	5027
27	132	302	517	780	1096	1466	1890	598	1237	1899	2610	3393	4249	5179
28	137	312	531	799	1121	1496	1925	596	1260	1947	2682	3490	4371	5325
29	142	322	546	819	1146	1526	1959	589	1266	1978	2738	3570	4476	5455
30	147	332	561	839	1170	1555	1994	584	1249	1986	2770	3628	4558	5562
31	152	342	576	859	1195	1585	2028	584	1232	1993	2802	3684	4640	5668
32	156	352	591	878	1220	1615	2063	584	1209	1977	2811	3718	4698	5751
33	161	362	606	898	1244	1644	2098	584	1181	1917	2775	3707	4711	5789
34	166	371	620	918	1269	1674	2132	584	1169	1866	2725	3681	4710	5812
35	171	381	635	938	1294	1703	2167	584	1169	1823	2628	3577	4631	5758
36	176	391	650	957	1318	1733	2201	584	1169	1774	2521	3396	4437	5588
37	181	401	665	977	1343	1763	2236	584	1169	1753	2436	3232	4178	5309
38	186	411	680	997	1368	1792	2270	584	1169	1753	2367	3079	3924	4940
39	191	421	694	1017	1392	1822	2305	584	1169	1753	2338	2960	3700	4596
40	196	431	709	1036	1417	1852	2340	584	1169	1753	2338	2922	3552	4322

Figure C.10.a: Table of HRRs of Class A Dry Transformer & 3.0 ft. Cable Tray Fires

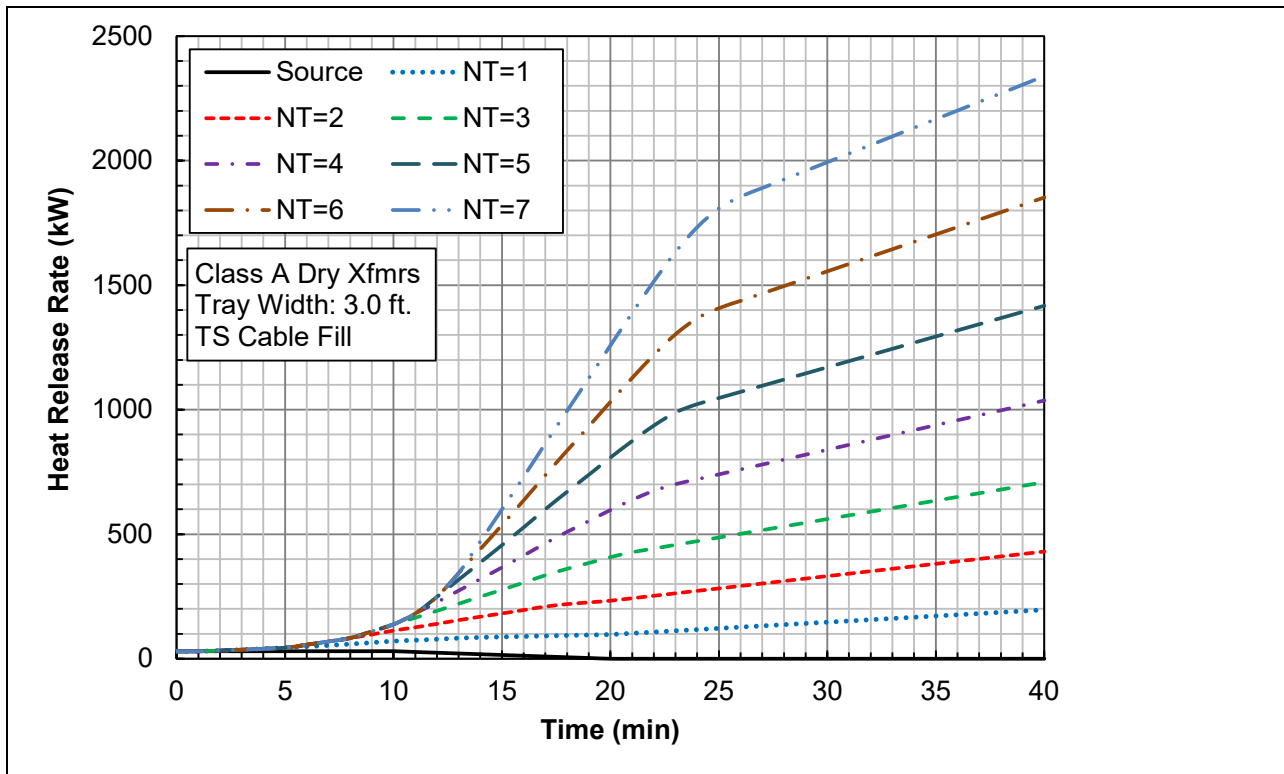


Figure C.10.b: HRR Plots of Class A Dry Transformer & 3.0 ft. TS Cable Tray Fires

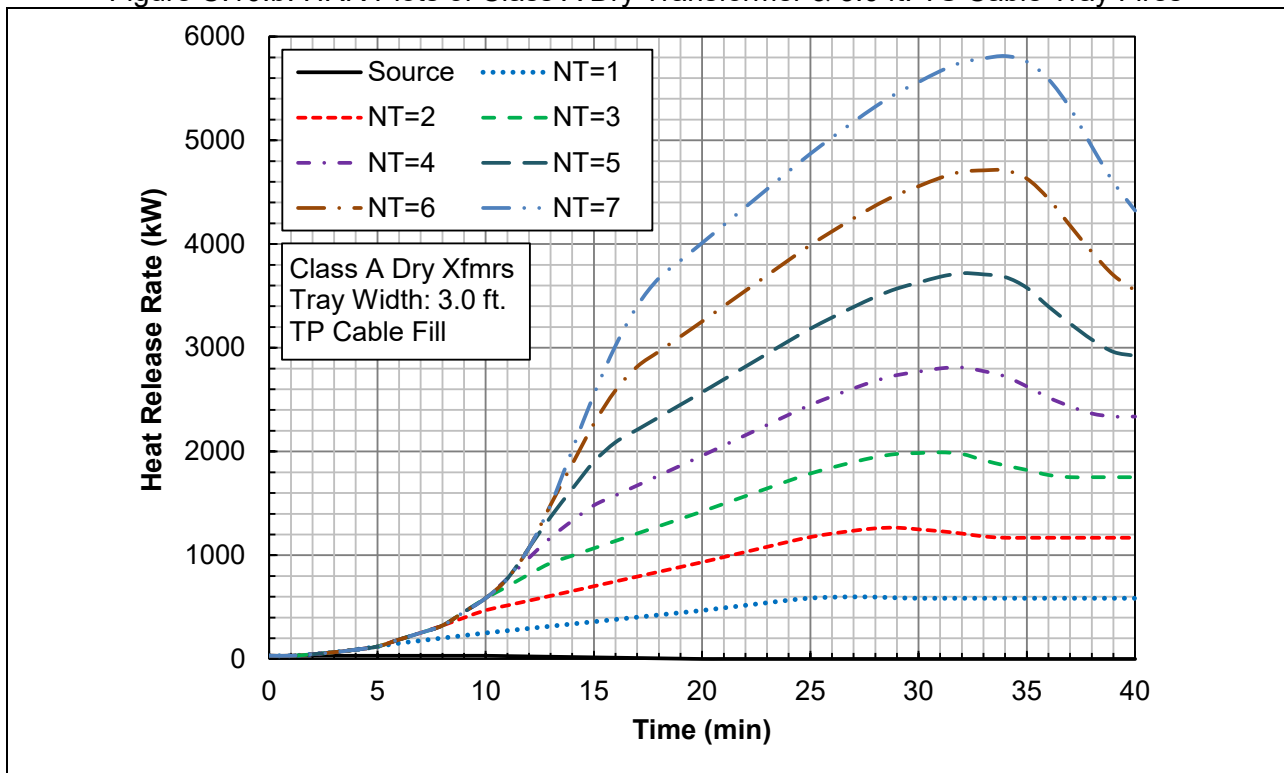


Figure C.10.c: HRR Plots of Class A Dry Transformer & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	70	70	70	70	70	70	70	70	70	70	70	70	70	70
1	70	70	70	70	70	70	70	70	70	70	70	70	70	70
2	72	72	72	72	72	72	72	81	81	81	81	81	81	81
3	75	75	75	75	75	75	75	94	94	94	94	94	94	94
4	77	77	77	77	77	77	77	110	110	110	110	110	110	110
5	80	80	80	80	80	80	80	128	128	128	128	128	128	128
6	83	88	88	88	88	88	88	147	168	168	168	168	168	168
7	86	96	96	96	96	96	96	159	204	204	204	204	204	204
8	90	104	104	104	104	104	104	171	242	242	242	242	242	242
9	94	113	120	120	120	120	120	184	283	315	315	315	315	315
10	97	122	137	137	137	137	137	196	322	387	387	387	387	387
11	94	125	147	156	156	156	156	202	339	441	483	483	483	483
12	92	128	157	176	188	188	188	207	357	498	584	636	636	636
13	89	132	168	197	221	235	235	212	375	549	682	788	850	850
14	85	134	179	217	253	281	298	218	393	579	761	925	1052	1124
15	81	136	189	238	285	328	361	223	410	609	832	1056	1250	1398
16	76	138	199	258	319	376	426	228	428	639	875	1147	1411	1636
17	72	140	210	280	353	425	492	234	446	669	917	1201	1522	1828
18	67	140	219	299	385	472	556	239	463	699	960	1256	1589	1959
19	63	138	226	317	416	518	620	244	481	729	1002	1311	1656	2038
20	58	136	233	335	447	565	684	250	499	759	1044	1366	1723	2118
21	61	141	243	356	482	616	753	262	523	796	1094	1427	1797	2204
22	63	146	250	375	515	664	819	274	548	833	1143	1489	1872	2290
23	66	151	258	389	542	708	881	287	573	871	1192	1551	1946	2377
24	68	156	265	399	559	741	932	299	597	908	1242	1613	2020	2463
25	71	161	272	409	571	761	971	308	619	941	1288	1671	2091	2546
26	73	165	280	418	584	776	995	309	632	967	1326	1721	2153	2621
27	76	170	287	428	596	791	1012	307	643	990	1361	1769	2213	2694
28	78	175	295	438	609	806	1030	303	651	1010	1394	1814	2270	2763
29	80	180	302	448	621	821	1047	296	649	1021	1417	1850	2318	2824
30	83	185	309	458	633	835	1064	292	636	1020	1429	1874	2355	2872
31	85	190	317	468	646	850	1082	292	624	1021	1441	1898	2392	2922
32	88	195	324	478	658	865	1099	292	609	1008	1441	1911	2417	2959
33	90	200	332	488	670	880	1116	292	592	971	1417	1898	2417	2971
34	93	205	339	497	683	895	1133	292	584	941	1385	1880	2410	2977
35	95	210	346	507	695	909	1151	292	584	916	1330	1820	2363	2942
36	98	215	354	517	707	924	1168	292	584	888	1270	1719	2254	2846
37	100	220	361	527	720	939	1185	292	584	877	1223	1629	2113	2694
38	103	225	369	537	732	954	1203	292	584	877	1185	1545	1976	2496
39	105	230	376	547	744	969	1220	292	584	877	1169	1481	1856	2312
40	108	235	383	557	757	983	1237	292	584	877	1169	1461	1778	2167

Figure C.11.a: Table of HRRs of Class B Dry Transformer & 1.5 ft. Cable Tray Fires

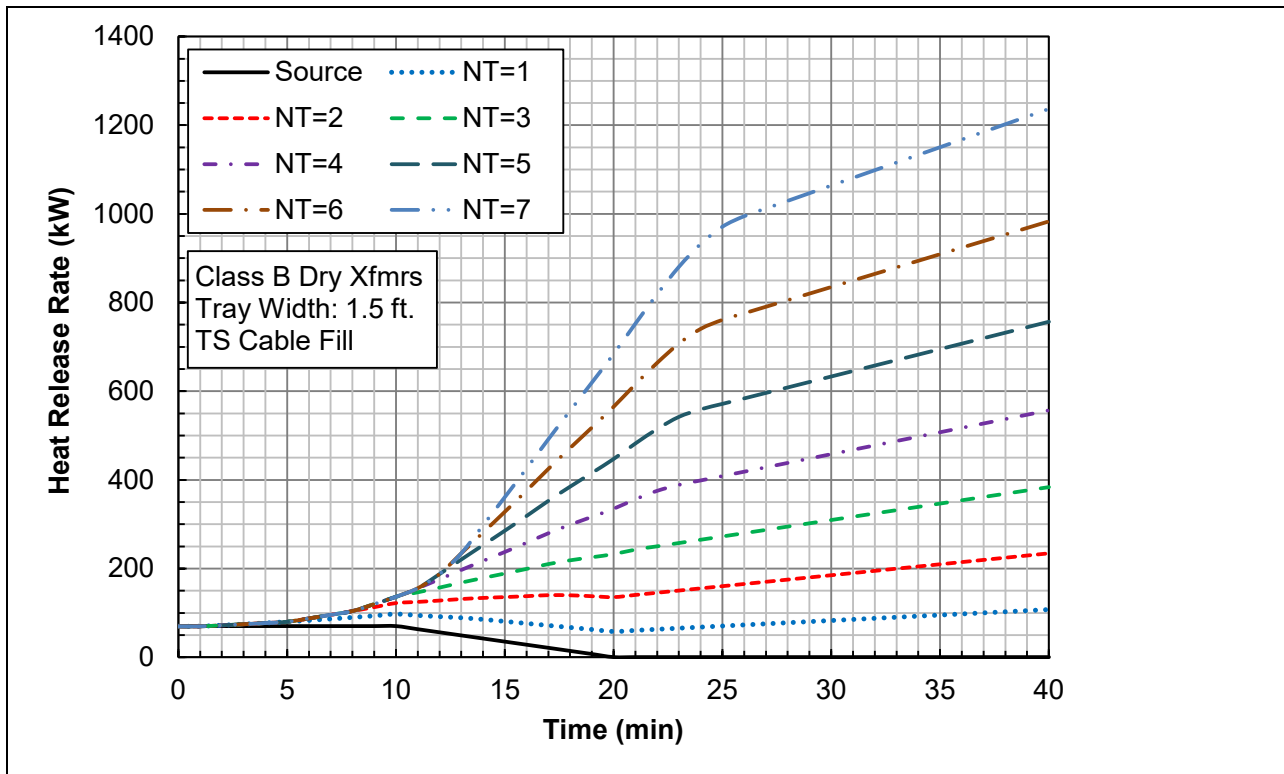


Figure C.11.b: HRR Plots of Class B Dry Transformer & 1.5 ft. TS Cable Tray Fires

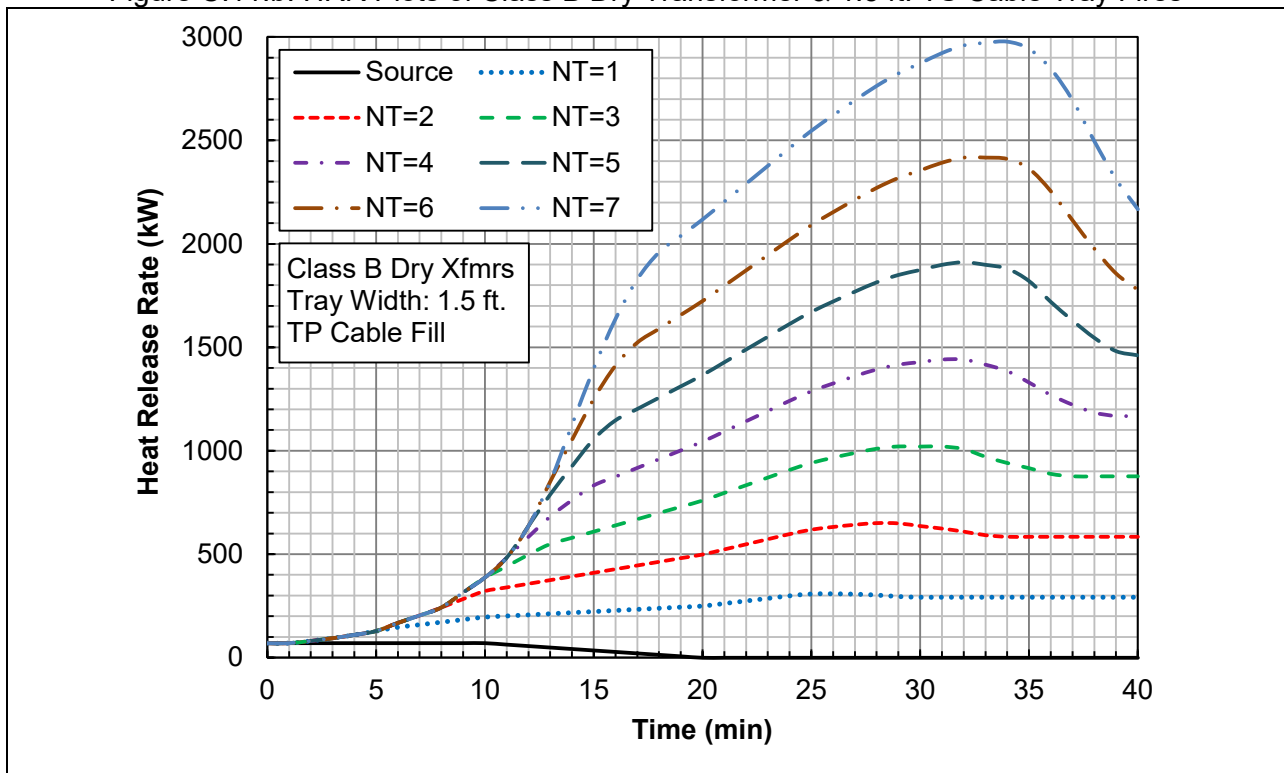


Figure C.11.c: HRR Plots of Class B Dry Transformer & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	70	70	70	70	70	70	70	70	70	70	70	70	70	70
1	70	70	70	70	70	70	70	70	70	70	70	70	70	70
2	74	74	74	74	74	74	74	91	91	91	91	91	91	91
3	79	79	79	79	79	79	79	118	118	118	118	118	118	118
4	85	85	85	85	85	85	85	150	150	150	150	150	150	150
5	90	90	90	90	90	90	90	187	187	187	187	187	187	187
6	96	106	106	106	106	106	106	224	266	266	266	266	266	266
7	103	122	122	122	122	122	122	248	337	337	337	337	337	337
8	110	139	139	139	139	139	139	273	414	414	414	414	414	414
9	117	156	170	170	170	170	170	298	497	559	559	559	559	559
10	125	175	203	203	203	203	203	322	574	704	704	704	704	704
11	126	187	230	249	249	249	249	340	616	819	902	902	902	902
12	127	200	258	296	319	319	319	358	658	940	1111	1215	1215	1215
13	129	214	288	345	392	420	420	375	701	1049	1315	1527	1652	1652
14	129	226	316	393	464	521	553	393	743	1116	1480	1807	2061	2206
15	127	237	343	440	536	621	687	411	785	1184	1630	2076	2465	2760
16	125	248	371	489	609	724	824	428	828	1251	1722	2266	2794	3245
17	123	259	399	538	684	829	963	446	870	1318	1813	2382	3023	3635
18	121	266	423	584	756	930	1098	464	913	1385	1905	2498	3165	3904
19	119	269	444	626	824	1030	1232	482	955	1452	1997	2615	3306	4069
20	116	272	465	670	894	1130	1369	499	997	1519	2089	2731	3447	4235
21	121	282	485	713	964	1232	1505	524	1047	1593	2187	2855	3595	4408
22	126	291	500	750	1030	1329	1638	549	1096	1667	2286	2978	3743	4581
23	131	301	515	778	1084	1415	1762	573	1145	1741	2385	3102	3891	4754
24	136	311	530	797	1118	1482	1865	598	1195	1815	2484	3225	4039	4927
25	141	321	545	817	1143	1523	1943	616	1238	1883	2576	3342	4181	5093
26	146	331	560	837	1168	1552	1990	618	1264	1934	2652	3442	4306	5243
27	151	341	574	857	1192	1582	2025	614	1285	1980	2722	3538	4426	5387
28	156	351	589	876	1217	1611	2059	606	1301	2020	2787	3628	4541	5527
29	161	361	604	896	1242	1641	2094	592	1298	2042	2834	3699	4637	5648
30	166	370	619	916	1266	1671	2129	584	1272	2041	2858	3747	4710	5745
31	171	380	634	936	1291	1700	2163	584	1248	2041	2883	3797	4784	5844
32	176	390	648	955	1316	1730	2198	584	1219	2017	2883	3822	4833	5918
33	181	400	663	975	1340	1760	2232	584	1184	1942	2833	3797	4833	5943
34	186	410	678	995	1365	1789	2267	584	1169	1882	2771	3759	4820	5954
35	191	420	693	1015	1390	1819	2301	584	1169	1832	2661	3640	4726	5885
36	195	430	708	1034	1415	1848	2336	584	1169	1777	2540	3438	4509	5692
37	200	440	722	1054	1439	1878	2370	584	1169	1753	2445	3258	4227	5388
38	205	449	737	1074	1464	1908	2405	584	1169	1753	2370	3091	3953	4992
39	210	459	752	1094	1489	1937	2440	584	1169	1753	2338	2962	3713	4624
40	215	469	767	1113	1513	1967	2474	584	1169	1753	2338	2922	3555	4334

Figure C.12.a: Table of HRRs of Class B Dry Transformer & 3.0 ft. Cable Tray Fires

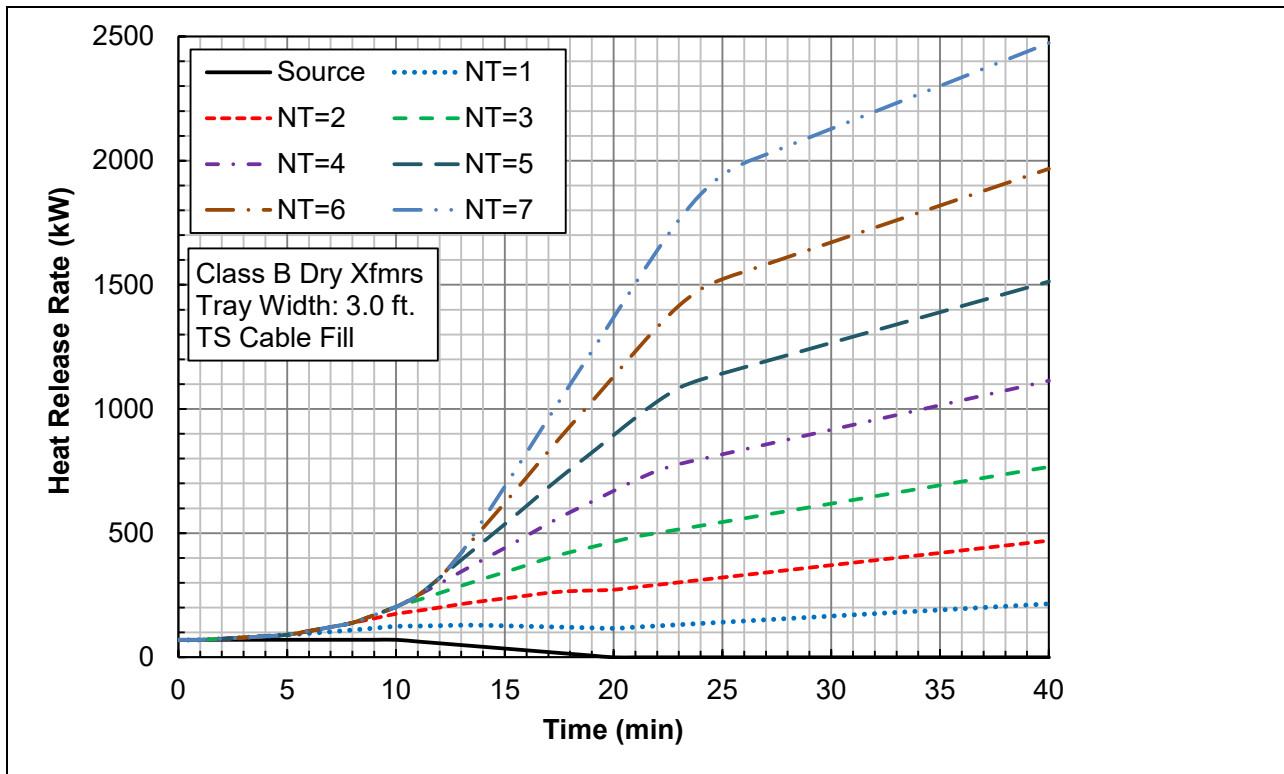


Figure C.12.b: HRR Plots of Class B Dry Transformer & 3.0 ft. TS Cable Tray Fires

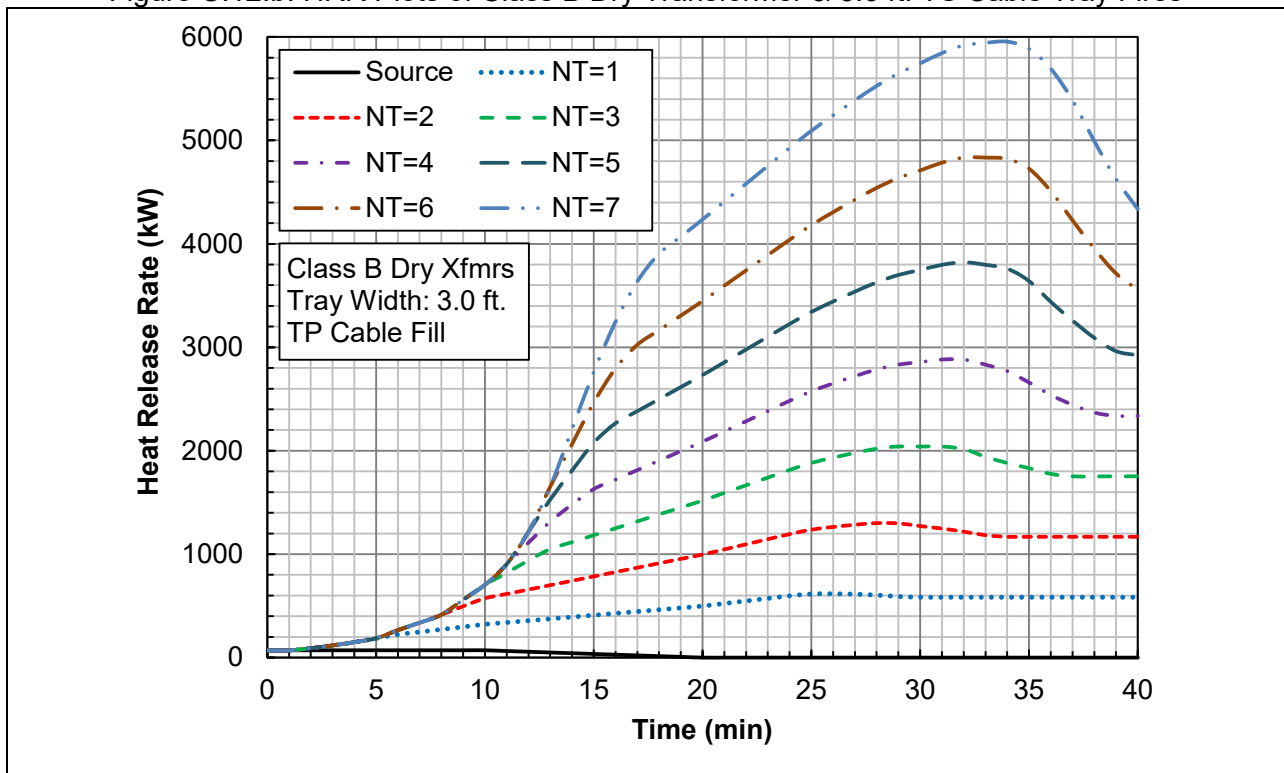


Figure C.12.c: HRR Plots of Class B Dry Transformer & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	130	130	130	130	130	130	130	130	130	130	130	130	130	130
1	130	130	130	130	130	130	130	130	130	130	130	130	130	130
2	134	134	134	134	134	134	134	146	146	146	146	146	146	146
3	137	137	137	137	137	137	137	165	165	165	165	165	165	165
4	141	141	141	141	141	141	141	186	186	186	186	186	186	186
5	145	145	145	145	145	145	145	210	210	210	210	210	210	210
6	150	155	155	155	155	155	155	233	260	260	260	260	260	260
7	154	166	166	166	166	166	166	245	301	301	301	301	301	301
8	159	177	177	177	177	177	177	258	345	345	345	345	345	345
9	164	188	197	197	197	197	197	270	392	429	429	429	429	429
10	169	200	217	217	217	217	217	282	434	510	510	510	510	510
11	161	199	225	235	235	235	235	282	446	564	611	611	611	611
12	154	199	233	254	267	267	267	281	458	620	717	775	775	775
13	146	199	242	274	301	316	316	280	469	670	819	936	1004	1004
14	137	197	250	293	333	364	381	280	481	694	898	1078	1216	1294
15	127	194	256	311	364	411	446	279	493	718	967	1213	1424	1582
16	116	192	263	330	397	459	513	278	504	742	1004	1302	1588	1830
17	106	189	271	349	430	508	580	278	516	766	1040	1351	1698	2025
18	95	183	275	365	460	555	645	277	528	790	1076	1399	1759	2154
19	84	175	277	379	489	600	709	276	539	814	1113	1448	1820	2228
20	74	167	279	394	518	646	774	276	551	838	1149	1497	1881	2301
21	76	172	290	417	556	701	848	288	576	875	1199	1558	1955	2388
22	79	177	297	438	591	753	920	301	600	912	1248	1620	2029	2474
23	81	182	305	452	620	800	986	313	625	949	1297	1682	2103	2560
24	84	187	312	462	638	835	1040	325	650	986	1347	1744	2177	2647
25	86	192	320	471	650	856	1081	332	669	1018	1391	1800	2246	2728
26	89	197	327	481	662	870	1105	328	677	1038	1423	1845	2303	2798
27	91	202	334	491	675	885	1123	320	682	1056	1453	1887	2357	2864
28	94	207	342	501	687	900	1140	311	685	1070	1480	1926	2409	2928
29	96	212	349	511	700	915	1157	298	676	1074	1496	1955	2450	2981
30	99	217	357	521	712	930	1174	292	655	1066	1500	1971	2479	3022
31	101	222	364	531	724	945	1192	292	637	1060	1507	1990	2510	3066
32	104	227	371	541	737	959	1209	292	617	1040	1500	1995	2528	3096
33	106	231	379	550	749	974	1226	292	594	992	1464	1972	2516	3097
34	109	236	386	560	761	989	1244	292	584	954	1423	1943	2500	3094
35	111	241	394	570	774	1004	1261	292	584	924	1357	1871	2440	3046
36	113	246	401	580	786	1019	1278	292	584	891	1286	1754	2313	2931
37	116	251	408	590	798	1033	1295	292	584	877	1231	1650	2153	2758
38	118	256	416	600	811	1048	1313	292	584	877	1187	1555	2000	2538
39	121	261	423	610	823	1063	1330	292	584	877	1169	1483	1866	2335
40	123	266	431	620	835	1078	1347	292	584	877	1169	1461	1780	2177

Figure C.13.a: Table of HRRs of Class C Dry Transformer & 1.5 ft. Cable Tray Fires

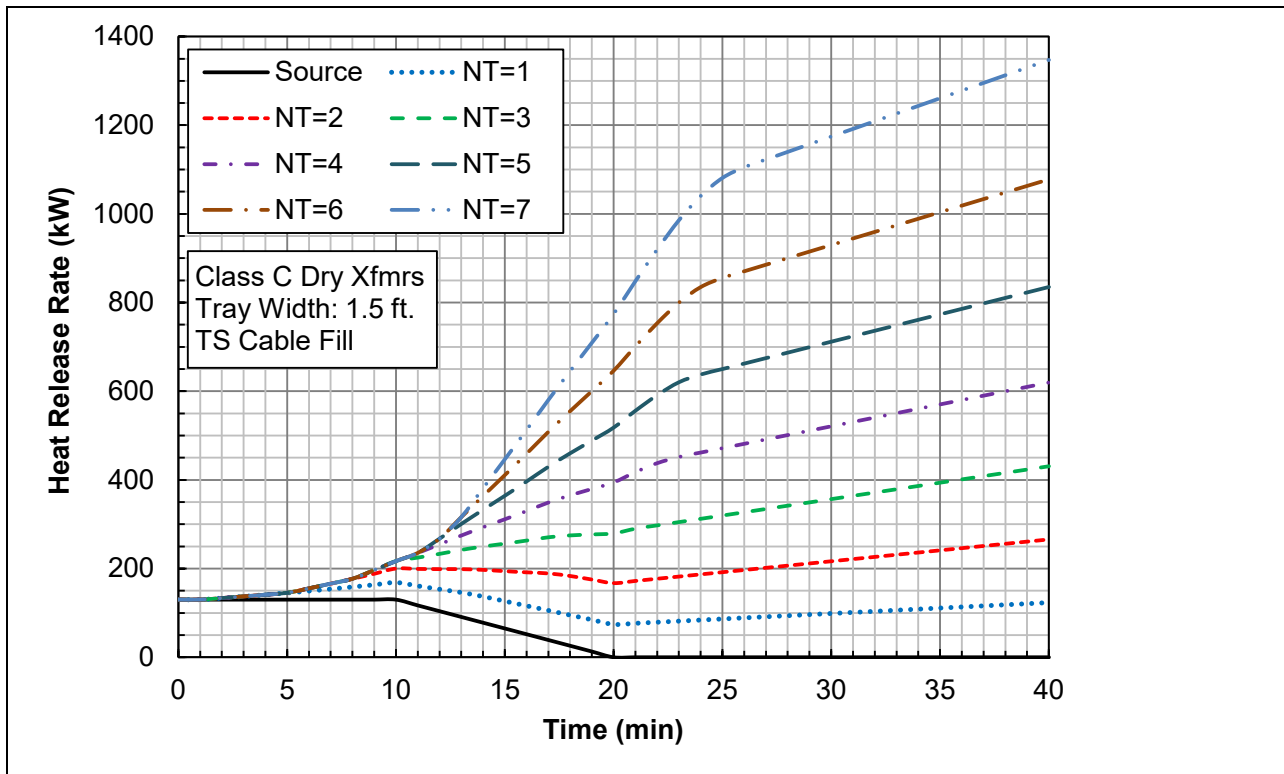


Figure C.13.b: HRR Plots of Class C Dry Transformer & 1.5 ft. TS Cable Tray Fires

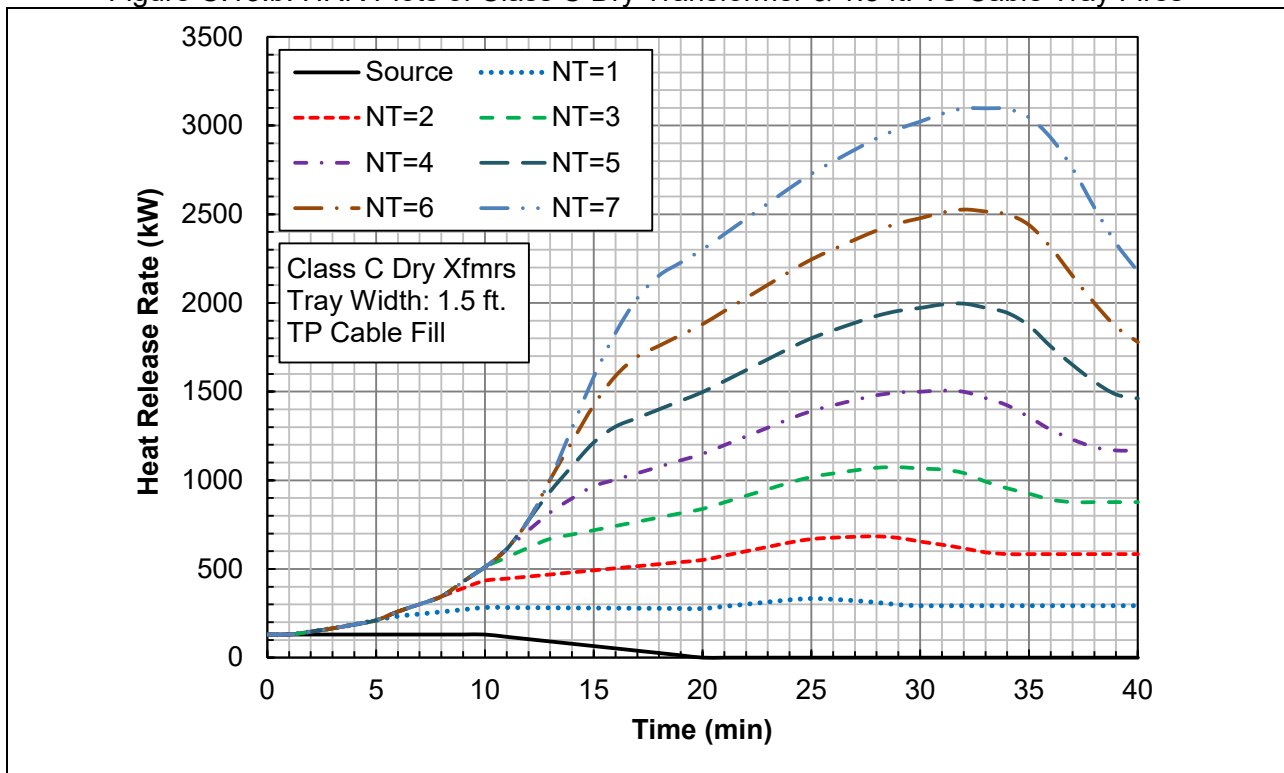


Figure C.13.c: HRR Plots of Class C Dry Transformer & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	130	130	130	130	130	130	130	130	130	130	130	130	130	130
1	130	130	130	130	130	130	130	130	130	130	130	130	130	130
2	137	137	137	137	137	137	137	162	162	162	162	162	162	162
3	144	144	144	144	144	144	144	200	200	200	200	200	200	200
4	152	152	152	152	152	152	152	243	243	243	243	243	243	243
5	161	161	161	161	161	161	161	291	291	291	291	291	291	291
6	169	181	181	181	181	181	181	336	389	389	389	389	389	389
7	178	202	202	202	202	202	202	361	472	472	472	472	472	472
8	188	224	224	224	224	224	224	385	560	560	560	560	560	560
9	197	247	263	263	263	263	263	410	653	727	727	727	727	727
10	208	270	304	304	304	304	304	435	738	891	891	891	891	891
11	205	282	332	354	354	354	354	446	775	1011	1106	1106	1106	1106
12	203	294	362	405	431	431	431	458	811	1137	1331	1445	1445	1445
13	202	307	393	458	510	541	541	470	848	1249	1547	1782	1917	1917
14	196	316	421	508	587	649	684	482	884	1310	1718	2078	2354	2510
15	188	324	447	557	663	756	828	493	920	1371	1870	2360	2782	3100
16	180	331	474	607	741	866	973	505	957	1432	1955	2552	3125	3609
17	172	339	502	659	820	977	1121	517	993	1493	2041	2662	3356	4012
18	164	341	524	704	894	1084	1265	528	1029	1554	2127	2773	3491	4283
19	156	338	541	746	964	1187	1405	540	1066	1615	2213	2883	3626	4443
20	148	335	559	788	1036	1292	1548	552	1102	1676	2298	2993	3761	4602
21	153	344	580	835	1112	1402	1696	576	1152	1750	2397	3117	3910	4775
22	158	354	595	875	1182	1507	1839	601	1201	1824	2496	3240	4058	4948
23	163	364	609	903	1241	1600	1971	626	1250	1898	2595	3364	4206	5121
24	168	374	624	923	1276	1670	2080	650	1300	1972	2693	3487	4354	5294
25	173	384	639	943	1300	1711	2162	665	1339	2036	2782	3601	4492	5456
26	178	394	654	963	1325	1741	2210	656	1354	2076	2847	3690	4606	5595
27	182	404	669	982	1350	1771	2245	641	1364	2111	2906	3774	4715	5729
28	187	414	684	1002	1374	1800	2280	621	1369	2141	2960	3853	4818	5857
29	192	423	698	1022	1399	1830	2314	596	1352	2148	2992	3910	4900	5963
30	197	433	713	1042	1424	1859	2349	584	1310	2131	3000	3942	4957	6045
31	202	443	728	1061	1448	1889	2383	584	1275	2120	3014	3981	5021	6133
32	207	453	743	1081	1473	1919	2418	584	1234	2081	2999	3991	5055	6192
33	212	463	758	1101	1498	1948	2452	584	1189	1985	2928	3944	5033	6195
34	217	473	772	1121	1522	1978	2487	584	1169	1909	2846	3887	5001	6187
35	222	483	787	1140	1547	2008	2522	584	1169	1848	2714	3742	4880	6092
36	227	493	802	1160	1572	2037	2556	584	1169	1781	2571	3507	4626	5862
37	232	502	817	1180	1597	2067	2591	584	1169	1753	2461	3300	4307	5516
38	237	512	832	1200	1621	2096	2625	584	1169	1753	2374	3111	4000	5076
39	242	522	846	1219	1646	2126	2660	584	1169	1753	2338	2967	3733	4671
40	247	532	861	1239	1671	2156	2694	584	1169	1753	2338	2922	3560	4354

Figure C.14.a: Table of HRRs of Class C Dry Transformer & 3.0 ft. Cable Tray Fires

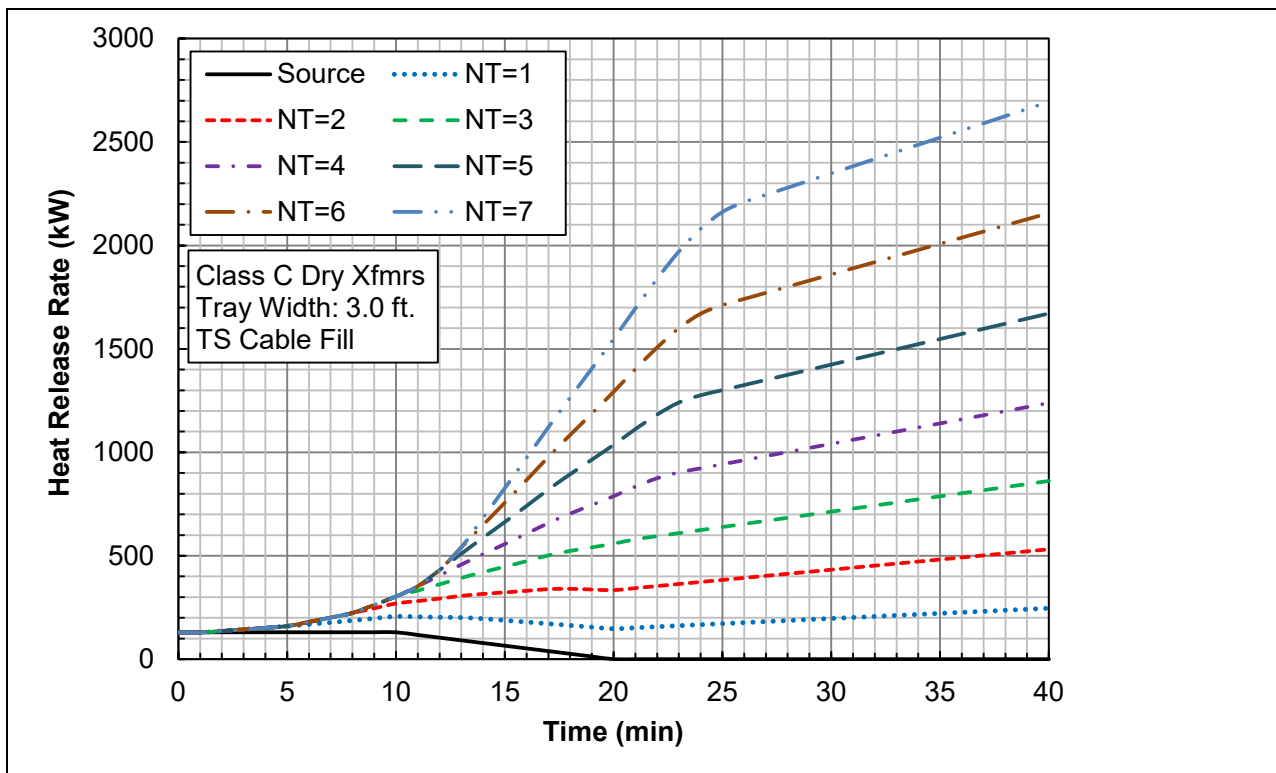


Figure C.14.b: HRR Plots of Class C Dry Transformer & 3.0 ft. TS Cable Tray Fires

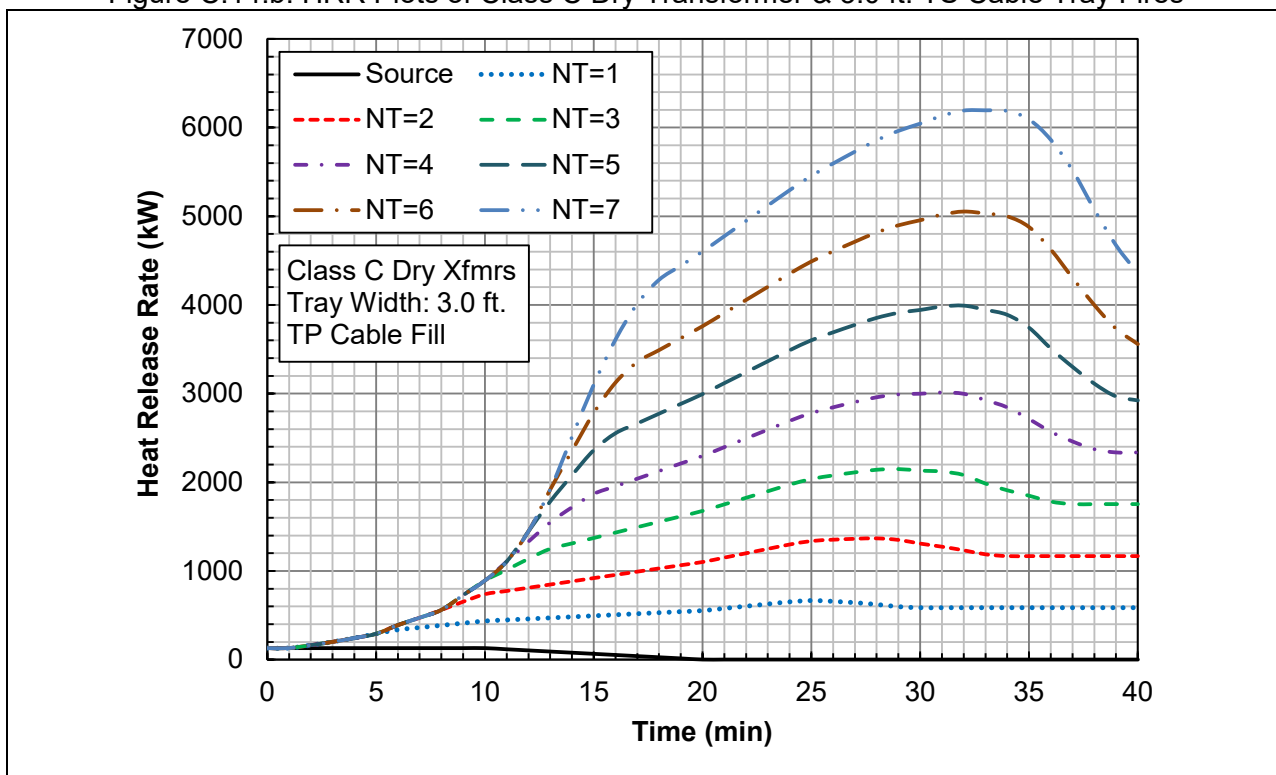


Figure C.14.c: HRR Plots of Class C Dry Transformer & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	16	16	16	16	16	16	16	16	16	16	16	16	16	16
2	57	57	57	57	57	57	57	73	73	73	73	73	73	73
3	113	113	113	113	113	113	113	149	149	149	149	149	149	149
4	183	183	183	183	183	183	183	241	241	241	241	241	241	241
5	267	267	267	267	267	267	267	348	348	348	348	348	348	348
6	304	311	311	311	311	311	311	406	438	438	438	438	438	438
7	305	320	320	320	320	320	320	414	481	481	481	481	481	481
8	307	329	329	329	329	329	329	422	526	526	526	526	526	526
9	309	338	348	348	348	348	348	430	573	615	615	615	615	615
10	310	348	367	367	367	367	367	438	615	702	702	702	702	702
11	312	358	387	398	398	398	398	446	635	769	822	822	822	822
12	314	368	407	431	445	445	445	453	655	839	946	1009	1009	1009
13	316	378	427	463	492	508	508	460	674	900	1065	1193	1266	1266
14	315	386	445	494	537	570	589	467	694	932	1157	1353	1502	1585
15	311	391	462	523	581	631	669	474	713	963	1237	1504	1731	1900
16	308	397	478	552	625	692	749	480	731	994	1281	1604	1912	2170
17	304	402	494	581	669	754	831	486	750	1025	1324	1659	2031	2380
18	300	403	507	607	710	812	909	492	767	1055	1366	1714	2099	2520
19	295	401	516	629	748	868	984	497	785	1085	1409	1769	2166	2599
20	290	398	525	652	786	924	1061	501	802	1114	1450	1823	2232	2677
21	283	394	527	668	819	975	1131	505	818	1142	1491	1876	2297	2755
22	277	390	525	680	847	1021	1198	508	833	1170	1531	1928	2362	2832
23	268	384	522	684	867	1060	1258	510	847	1196	1570	1979	2425	2908
24	259	377	517	682	873	1084	1303	510	860	1221	1607	2029	2487	2982
25	247	367	510	677	871	1091	1331	501	863	1237	1635	2069	2540	3047
26	231	354	499	668	864	1087	1337	473	847	1233	1643	2090	2573	3093
27	206	331	479	651	849	1075	1327	432	819	1218	1640	2099	2595	3127
28	109	237	387	561	762	990	1245	318	717	1128	1563	2034	2542	3086
29	111	242	394	571	775	1005	1262	300	701	1125	1572	2056	2576	3132
30	114	247	402	581	787	1020	1280	292	673	1109	1568	2064	2597	3166
31	116	252	409	591	799	1035	1297	292	650	1098	1570	2078	2623	3205
32	119	257	417	601	812	1050	1314	292	625	1071	1556	2076	2634	3227
33	121	262	424	611	824	1064	1332	292	596	1012	1509	2042	2612	3218
34	124	267	431	621	837	1079	1349	292	584	967	1459	2005	2587	3205
35	126	271	439	630	849	1094	1366	292	584	931	1382	1920	2514	3145
36	129	276	446	640	861	1109	1383	292	584	893	1300	1787	2369	3012
37	131	281	454	650	874	1124	1401	292	584	877	1238	1670	2192	2820
38	133	286	461	660	886	1139	1418	292	584	877	1189	1565	2022	2578
39	136	291	468	670	898	1153	1435	292	584	877	1169	1486	1876	2358
40	138	296	476	680	911	1168	1453	292	584	877	1169	1461	1782	2187

Figure C.15.a: Table of HRRs of Generic Transient & 1.5 ft. Cable Tray Fires

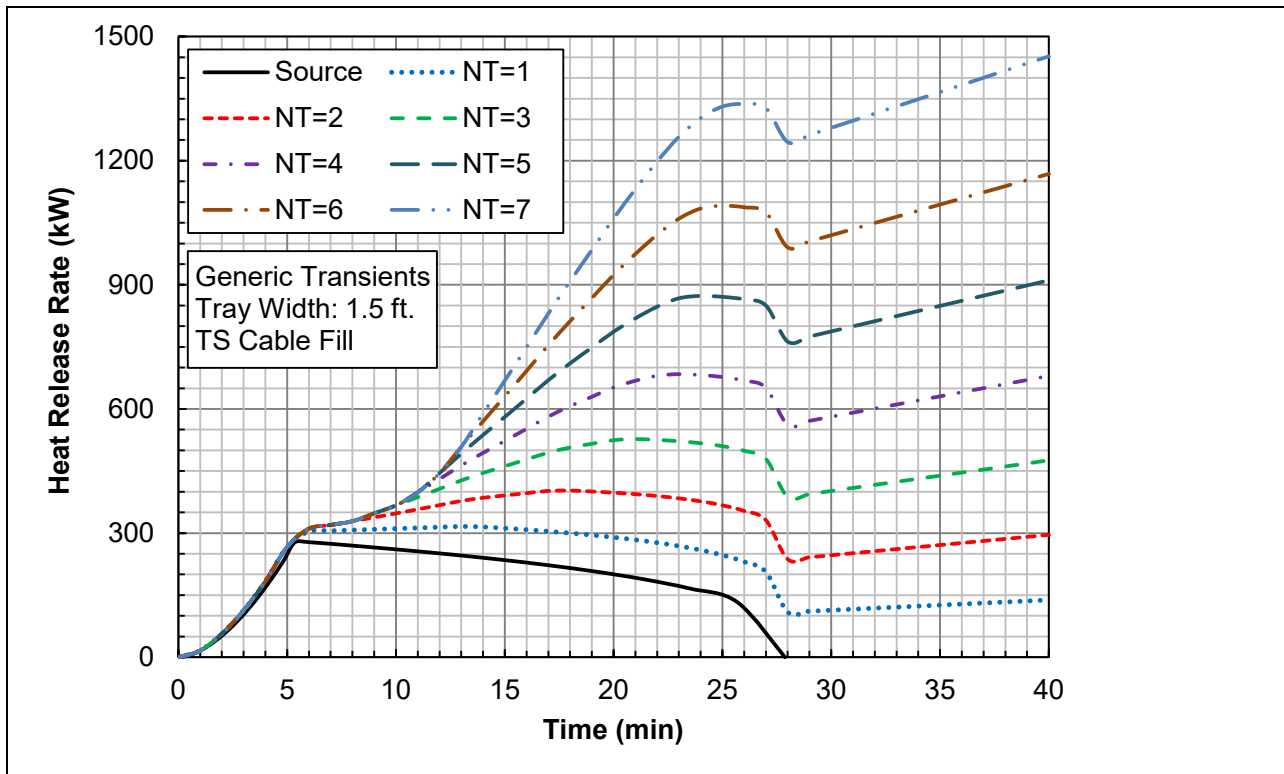


Figure C.15.b: HRR Plots of Generic Transient & 1.5 ft. TS Cable Tray Fires

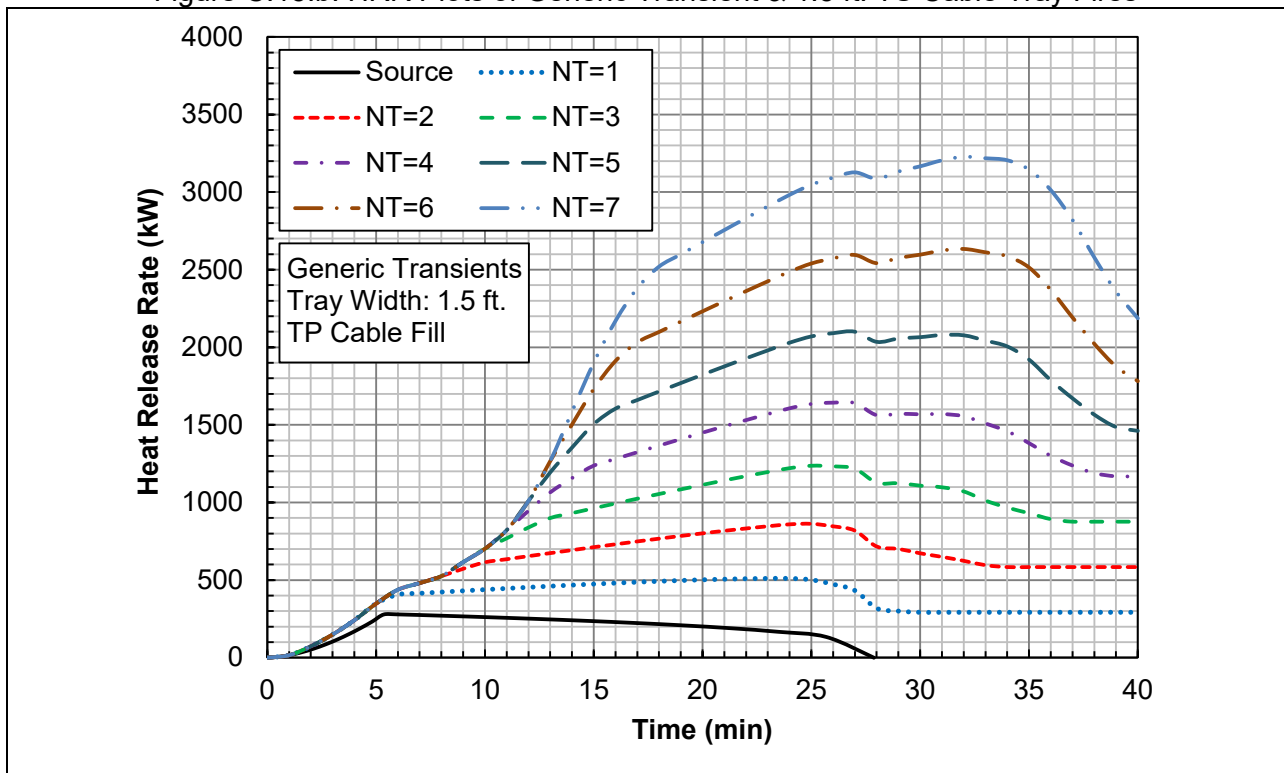


Figure C.15.c: HRR Plots of Generic Transient & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	16	16	16	16	16	16	16	16	16	16	16	16	16	16
2	61	61	61	61	61	61	61	95	95	95	95	95	95	95
3	123	123	123	123	123	123	123	195	195	195	195	195	195	195
4	198	198	198	198	198	198	198	313	313	313	313	313	313	313
5	287	287	287	287	287	287	287	450	450	450	450	450	450	450
6	329	343	343	343	343	343	343	534	598	598	598	598	598	598
7	337	365	365	365	365	365	365	555	687	687	687	687	687	687
8	344	388	388	388	388	388	388	575	782	782	782	782	782	782
9	352	411	430	430	430	430	430	596	881	966	966	966	966	966
10	360	435	473	473	473	473	473	616	969	1143	1143	1143	1143	1143
11	368	460	517	541	541	541	541	636	1014	1282	1387	1387	1387	1387
12	377	485	563	610	639	639	639	655	1058	1427	1642	1767	1767	1767
13	386	510	609	681	738	771	771	675	1103	1554	1884	2140	2286	2286
14	389	531	650	747	833	900	938	694	1147	1623	2073	2465	2763	2929
15	388	548	688	811	926	1027	1103	713	1190	1691	2240	2773	3227	3565
16	387	565	727	875	1021	1155	1270	732	1234	1759	2333	2979	3595	4111
17	386	582	766	940	1116	1286	1439	750	1277	1827	2425	3096	3841	4538
18	384	591	798	998	1205	1409	1602	768	1319	1894	2517	3213	3982	4824
19	381	593	823	1050	1288	1528	1761	786	1362	1961	2609	3329	4123	4989
20	379	595	848	1103	1372	1648	1921	802	1403	2027	2700	3445	4263	5154
21	375	597	862	1144	1445	1757	2071	819	1444	2093	2790	3560	4403	5318
22	370	597	868	1177	1511	1860	2214	834	1484	2157	2879	3674	4541	5482
23	365	596	872	1196	1562	1948	2344	848	1523	2221	2967	3787	4679	5644
24	358	594	874	1203	1586	2009	2447	860	1560	2283	3054	3898	4815	5805
25	348	589	875	1209	1596	2037	2517	857	1581	2329	3125	3993	4935	5949
26	334	581	871	1210	1602	2048	2548	818	1567	2339	3160	4053	5020	6059
27	312	563	858	1202	1600	2051	2555	766	1539	2336	3181	4100	5091	6154
28	218	474	774	1123	1525	1981	2490	636	1434	2256	3126	4069	5084	6173
29	222	484	789	1142	1550	2010	2525	600	1403	2249	3144	4111	5152	6265
30	227	494	803	1162	1574	2040	2560	584	1346	2217	3137	4129	5194	6332
31	232	503	818	1182	1599	2070	2594	584	1300	2196	3140	4157	5247	6409
32	237	513	833	1202	1624	2099	2629	584	1249	2143	3111	4153	5267	6455
33	242	523	848	1221	1648	2129	2663	584	1193	2025	3018	4085	5224	6436
34	247	533	863	1241	1673	2159	2698	584	1169	1934	2918	4009	5173	6410
35	252	543	878	1261	1698	2188	2732	584	1169	1863	2765	3840	5028	6290
36	257	553	892	1281	1722	2218	2767	584	1169	1786	2601	3573	4739	6025
37	262	563	907	1300	1747	2248	2801	584	1169	1753	2476	3341	4383	5639
38	267	573	922	1320	1772	2277	2836	584	1169	1753	2378	3130	4044	5157
39	272	582	937	1340	1796	2307	2871	584	1169	1753	2338	2971	3752	4716
40	277	592	952	1360	1821	2336	2905	584	1169	1753	2338	2922	3564	4373

Figure C.16.a: Table of HRRs of Generic Transient & 3.0 ft. Cable Tray Fires

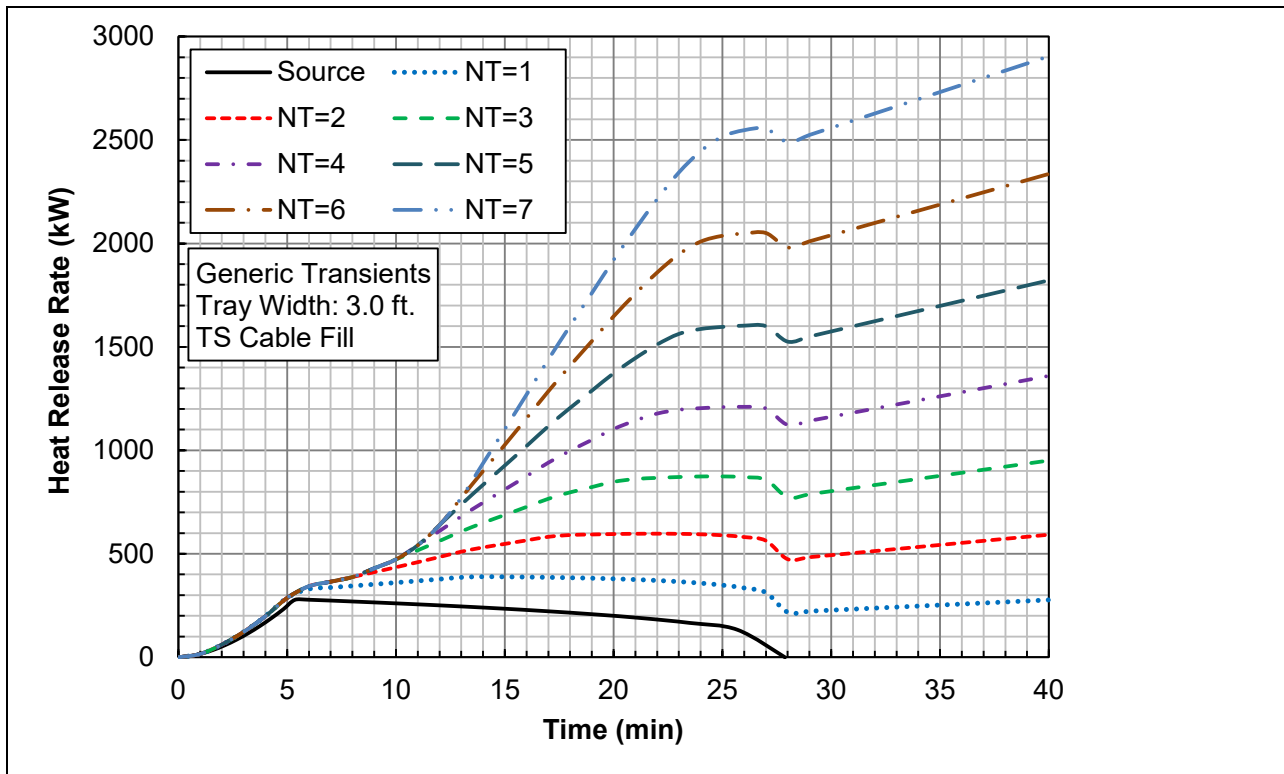


Figure C.16.b: HRR Plots of Generic Transient & 3.0 ft. TS Cable Tray Fires

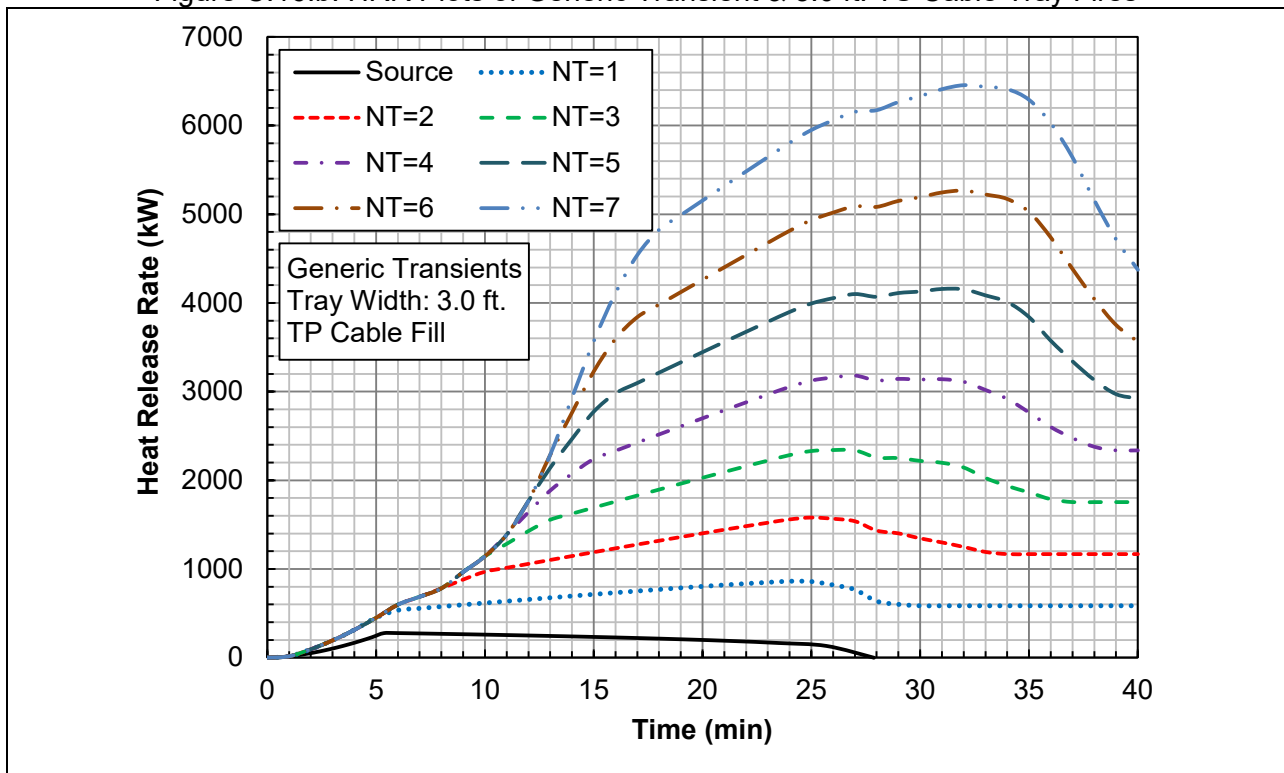


Figure C.16.c: HRR Plots of Generic Transient & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	9	9	9	9	9	9	9	9	9	9	9	9	9	9
2	34	34	34	34	34	34	34	47	47	47	47	47	47	47
3	67	67	67	67	67	67	67	96	96	96	96	96	96	96
4	109	109	109	109	109	109	109	155	155	155	155	155	155	155
5	158	158	158	158	158	158	158	225	225	225	225	225	225	225
6	162	168	168	168	168	168	168	248	275	275	275	275	275	275
7	164	177	177	177	177	177	177	258	314	314	314	314	314	314
8	167	186	186	186	186	186	186	268	357	357	357	357	357	357
9	170	195	203	203	203	203	203	278	402	439	439	439	439	439
10	172	205	221	221	221	221	221	288	442	520	520	520	520	520
11	175	214	240	251	251	251	251	297	464	584	632	632	632	632
12	178	225	259	281	294	294	294	307	486	652	750	808	808	808
13	181	235	279	312	338	353	353	317	508	712	862	981	1049	1049
14	182	244	297	341	381	412	430	326	530	746	952	1134	1273	1352
15	182	251	314	369	423	470	506	335	552	780	1032	1279	1492	1652
16	181	258	330	398	465	528	582	344	573	813	1078	1379	1668	1911
17	180	265	348	427	508	588	660	353	594	847	1124	1437	1787	2117
18	179	269	361	453	549	644	735	362	615	880	1169	1495	1857	2256
19	177	270	373	476	587	699	809	370	636	913	1215	1553	1927	2338
20	175	270	384	500	625	754	883	378	656	946	1260	1610	1997	2420
21	173	270	390	519	658	805	953	386	676	978	1304	1667	2066	2502
22	170	270	392	533	688	852	1019	393	695	1010	1348	1723	2135	2582
23	166	268	393	541	712	893	1080	399	714	1040	1391	1779	2202	2663
24	161	266	393	544	722	920	1127	404	731	1070	1433	1833	2269	2742
25	154	261	391	544	725	932	1159	401	741	1092	1468	1880	2328	2813
26	143	253	384	540	723	933	1169	382	734	1098	1486	1910	2371	2868
27	93	205	339	498	683	895	1134	322	686	1062	1463	1899	2373	2882
28	95	210	347	508	695	910	1151	311	688	1077	1489	1938	2424	2946
29	98	215	354	518	708	925	1169	298	679	1080	1504	1966	2464	2998
30	100	220	362	527	720	940	1186	292	657	1070	1508	1981	2491	3038
31	103	225	369	537	732	954	1203	292	639	1064	1514	2000	2523	3082
32	105	230	376	547	745	969	1220	292	618	1044	1506	2004	2539	3110
33	108	235	384	557	757	984	1238	292	595	995	1469	1980	2527	3111
34	110	240	391	567	769	999	1255	292	584	956	1427	1950	2510	3106
35	113	245	399	577	782	1014	1272	292	584	925	1360	1876	2448	3057
36	115	250	406	587	794	1028	1290	292	584	891	1287	1757	2319	2940
37	118	255	413	597	807	1043	1307	292	584	877	1231	1652	2157	2765
38	120	259	421	606	819	1058	1324	292	584	877	1187	1557	2002	2543
39	123	264	428	616	831	1073	1341	292	584	877	1169	1484	1867	2338
40	125	269	436	626	844	1088	1359	292	584	877	1169	1461	1780	2178

Figure C17.a: Table of HRRs of TCCL Transient & 1.5 ft. Cable Tray Fires

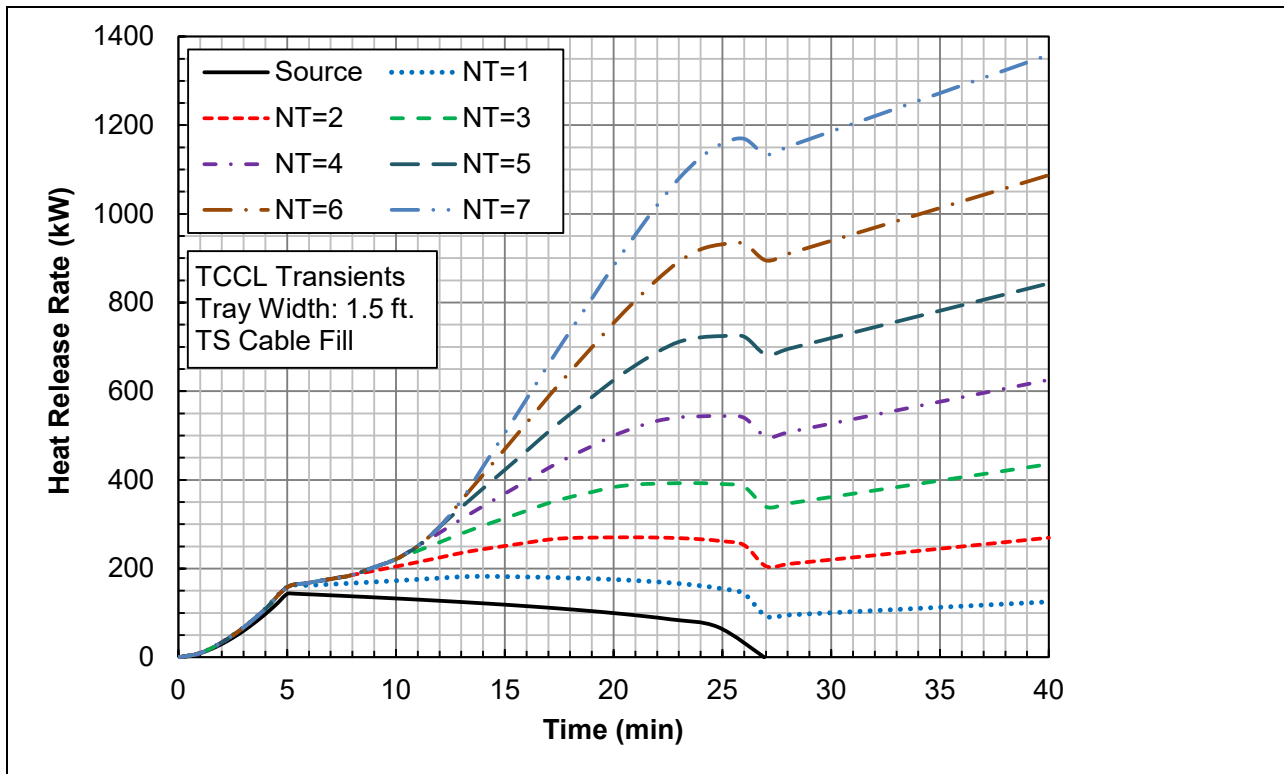


Figure C.17.b: HRR Plots of TCCL Transient & 1.5 ft. TS Cable Tray Fires

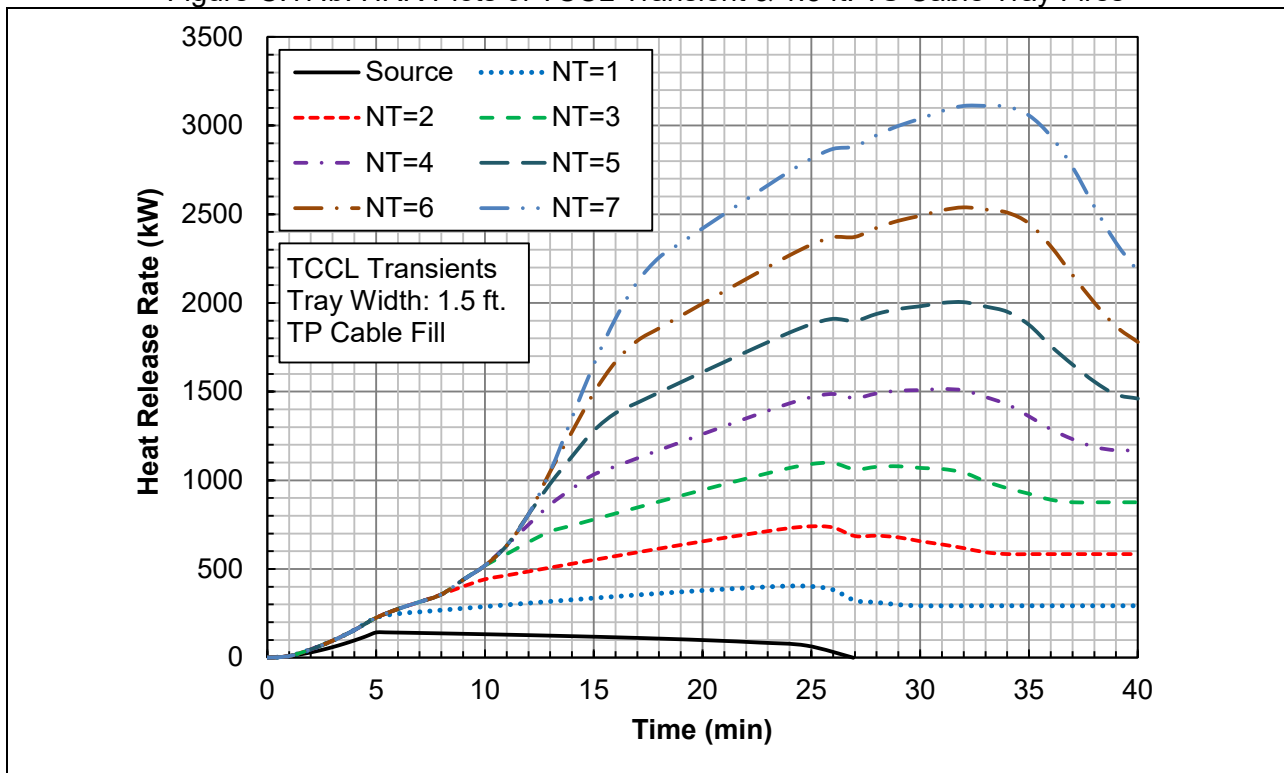


Figure C.17.c: HRR Plots of TCCL Transient & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	9	9	9	9	9	9	9	9	9	9	9	9	9	9
2	37	37	37	37	37	37	37	64	64	64	64	64	64	64
3	75	75	75	75	75	75	75	132	132	132	132	132	132	132
4	120	120	120	120	120	120	120	214	214	214	214	214	214	214
5	174	174	174	174	174	174	174	308	308	308	308	308	308	308
6	182	194	194	194	194	194	194	353	407	407	407	407	407	407
7	189	214	214	214	214	214	214	376	489	489	489	489	489	489
8	197	234	234	234	234	234	234	398	576	576	576	576	576	576
9	204	255	272	272	272	272	272	421	668	743	743	743	743	743
10	212	277	310	310	310	310	310	443	752	907	907	907	907	907
11	221	299	350	372	372	372	372	465	799	1039	1134	1134	1134	1134
12	229	322	391	435	461	461	461	487	845	1176	1372	1488	1488	1488
13	238	346	433	499	552	583	583	509	892	1299	1600	1838	1974	1974
14	243	366	472	560	640	702	738	531	938	1370	1783	2146	2425	2582
15	245	383	509	620	727	821	893	552	985	1441	1945	2440	2866	3185
16	247	401	546	681	815	941	1050	574	1031	1512	2040	2642	3220	3707
17	248	419	584	742	905	1064	1209	595	1077	1582	2136	2762	3462	4122
18	249	429	615	798	989	1181	1363	616	1122	1652	2231	2882	3606	4403
19	250	435	641	849	1069	1294	1514	636	1168	1723	2326	3001	3750	4572
20	251	441	668	900	1150	1409	1667	657	1213	1792	2420	3120	3894	4740
21	251	446	684	942	1222	1515	1811	677	1257	1861	2514	3239	4037	4908
22	250	450	694	978	1288	1615	1950	696	1301	1930	2607	3357	4180	5076
23	249	454	702	1000	1340	1702	2076	714	1344	1998	2700	3474	4322	5242
24	247	456	710	1012	1368	1765	2179	732	1386	2065	2791	3590	4463	5408
25	242	457	715	1022	1383	1797	2251	736	1416	2119	2870	3694	4591	5561
26	233	453	716	1028	1394	1813	2286	712	1416	2144	2919	3768	4690	5684
27	186	410	679	996	1366	1790	2268	644	1373	2125	2925	3799	4745	5764
28	191	420	693	1015	1391	1820	2303	623	1376	2153	2978	3877	4848	5891
29	196	430	708	1035	1416	1850	2337	596	1357	2159	3009	3932	4927	5996
30	201	440	723	1055	1440	1879	2372	584	1314	2140	3015	3963	4983	6076
31	206	450	738	1075	1465	1909	2406	584	1278	2129	3028	4000	5045	6163
32	210	460	753	1094	1490	1938	2441	584	1236	2088	3012	4009	5078	6221
33	215	470	767	1114	1514	1968	2476	584	1189	1989	2938	3959	5054	6221
34	220	479	782	1134	1539	1998	2510	584	1169	1912	2854	3900	5019	6211
35	225	489	797	1154	1564	2027	2545	584	1169	1849	2719	3753	4896	6113
36	230	499	812	1173	1588	2057	2579	584	1169	1782	2574	3514	4638	5880
37	235	509	827	1193	1613	2087	2614	584	1169	1753	2463	3305	4315	5530
38	240	519	842	1213	1638	2116	2648	584	1169	1753	2375	3113	4005	5085
39	245	529	856	1233	1662	2146	2683	584	1169	1753	2338	2967	3735	4676
40	250	539	871	1252	1687	2175	2717	584	1169	1753	2338	2922	3560	4356

Figure C.18.a: Table of HRRs of TCCL Transient & 3.0 ft. Cable Tray Fires

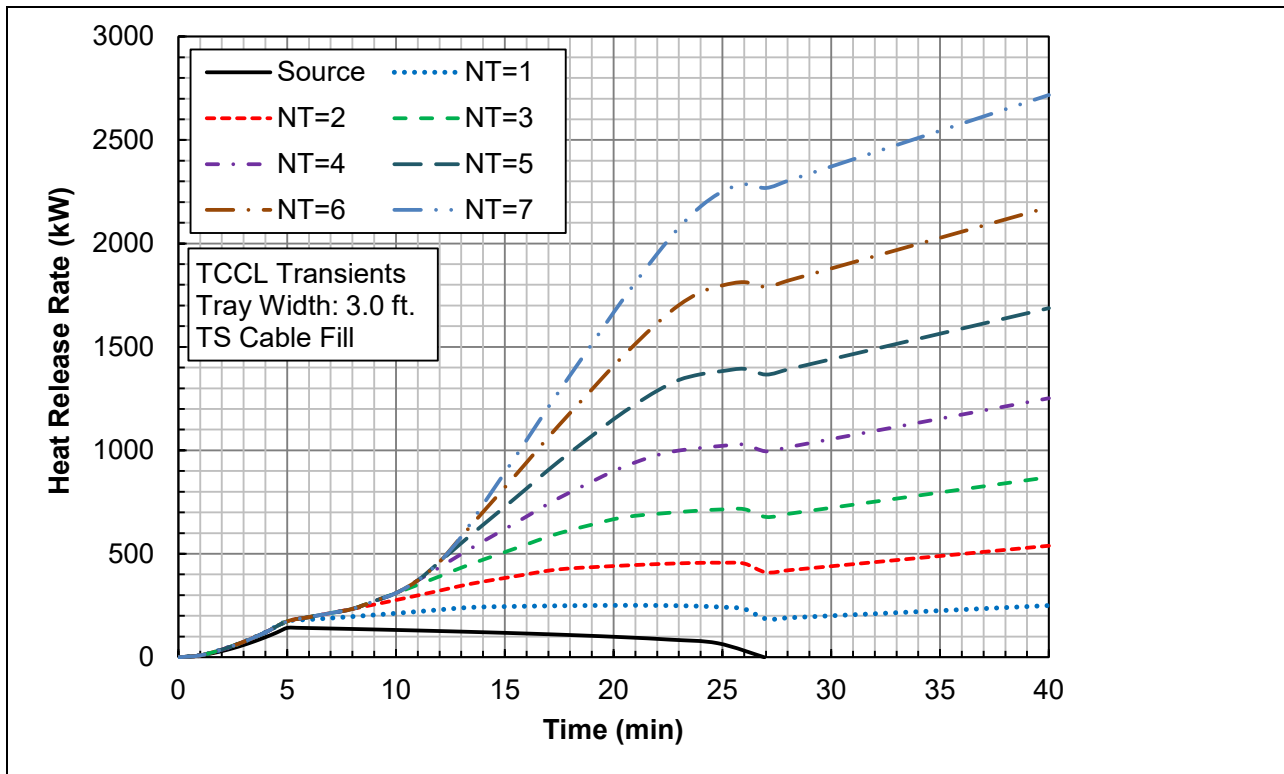


Figure C.18.b: HRR Plots of TCCL Transient & 3.0 ft. TS Cable Tray Fires

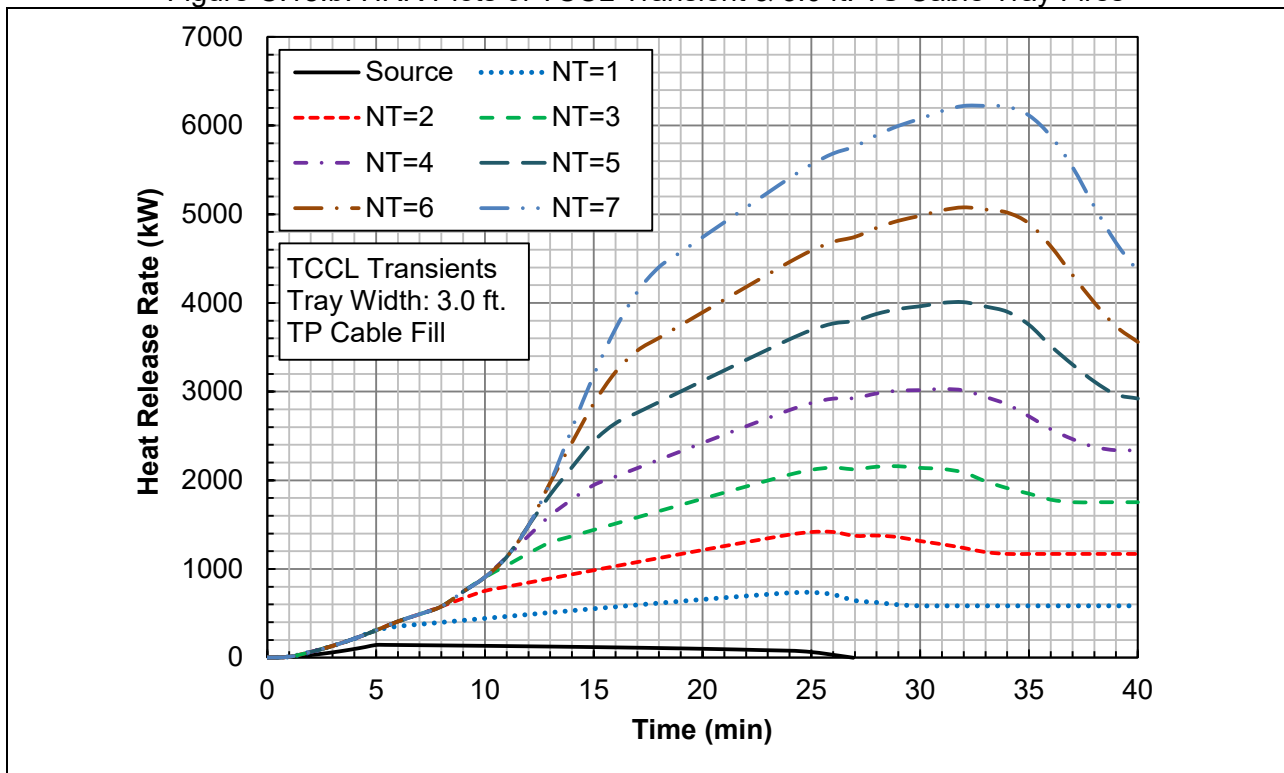


Figure C.18.c: HRR Plots of TCCL Transient & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	7	7	7	7	7	7	7	17	17	17	17	17	17	17
3	16	16	16	16	16	16	16	39	39	39	39	39	39	39
4	28	28	28	28	28	28	28	65	65	65	65	65	65	65
5	42	42	42	42	42	42	42	96	96	96	96	96	96	96
6	58	63	63	63	63	63	63	129	152	152	152	152	152	152
7	77	87	87	87	87	87	87	157	205	205	205	205	205	205
8	99	115	115	115	115	115	115	187	263	263	263	263	263	263
9	123	144	152	152	152	152	152	219	327	360	360	360	360	360
10	150	177	192	192	192	192	192	254	389	458	458	458	458	458
11	179	212	235	245	245	245	245	291	438	546	590	590	590	590
12	211	250	281	301	313	313	313	330	490	639	729	783	783	783
13	216	262	301	331	355	370	370	343	515	699	837	948	1012	1012
14	219	272	319	360	397	426	443	355	540	736	926	1095	1226	1301
15	222	281	337	388	438	482	516	367	564	773	1006	1237	1437	1589
16	224	291	356	418	480	540	591	380	589	810	1055	1336	1609	1840
17	227	301	375	447	523	598	666	392	614	847	1104	1398	1728	2042
18	229	307	391	475	564	654	740	404	638	884	1154	1460	1803	2182
19	231	312	405	500	603	709	813	417	663	921	1203	1522	1877	2268
20	234	317	420	526	643	765	887	429	688	958	1252	1583	1951	2354
21	227	313	421	540	670	808	948	433	703	986	1293	1636	2016	2432
22	221	309	419	550	695	849	1008	436	719	1014	1333	1689	2081	2509
23	215	305	418	555	714	884	1062	439	735	1042	1374	1742	2146	2587
24	208	301	416	556	722	909	1106	443	751	1070	1414	1794	2211	2664
25	202	297	415	557	725	921	1137	442	763	1095	1451	1843	2272	2738
26	195	293	413	558	729	927	1152	432	765	1109	1478	1883	2324	2802
27	189	289	412	559	732	933	1160	419	764	1121	1502	1919	2373	2863
28	182	285	410	559	736	938	1168	404	761	1130	1524	1953	2419	2922
29	176	281	409	560	739	944	1177	386	748	1130	1535	1977	2456	2971
30	169	277	407	561	742	950	1185	373	724	1117	1535	1990	2480	3008
31	163	273	406	562	746	956	1193	364	701	1107	1537	2004	2507	3046
32	156	269	404	563	749	962	1202	355	675	1083	1525	2004	2520	3072
33	150	265	402	564	753	968	1210	346	647	1033	1487	1979	2507	3071
34	143	261	401	565	756	974	1218	337	629	991	1444	1948	2488	3064
35	137	257	399	566	759	980	1227	328	620	955	1376	1874	2427	3016
36	130	253	398	567	763	985	1235	319	611	916	1302	1759	2303	2904
37	124	249	396	568	766	991	1243	310	602	894	1243	1655	2146	2735
38	117	245	395	569	770	997	1252	301	593	886	1195	1558	1994	2520
39	111	241	393	570	773	1003	1260	292	584	877	1169	1482	1860	2321
40	113	246	401	580	785	1018	1277	292	584	877	1169	1461	1778	2171

Figure C.19.a: Table of HRRs of Switchgear/Load Center & 1.5 ft. Cable Tray Fires

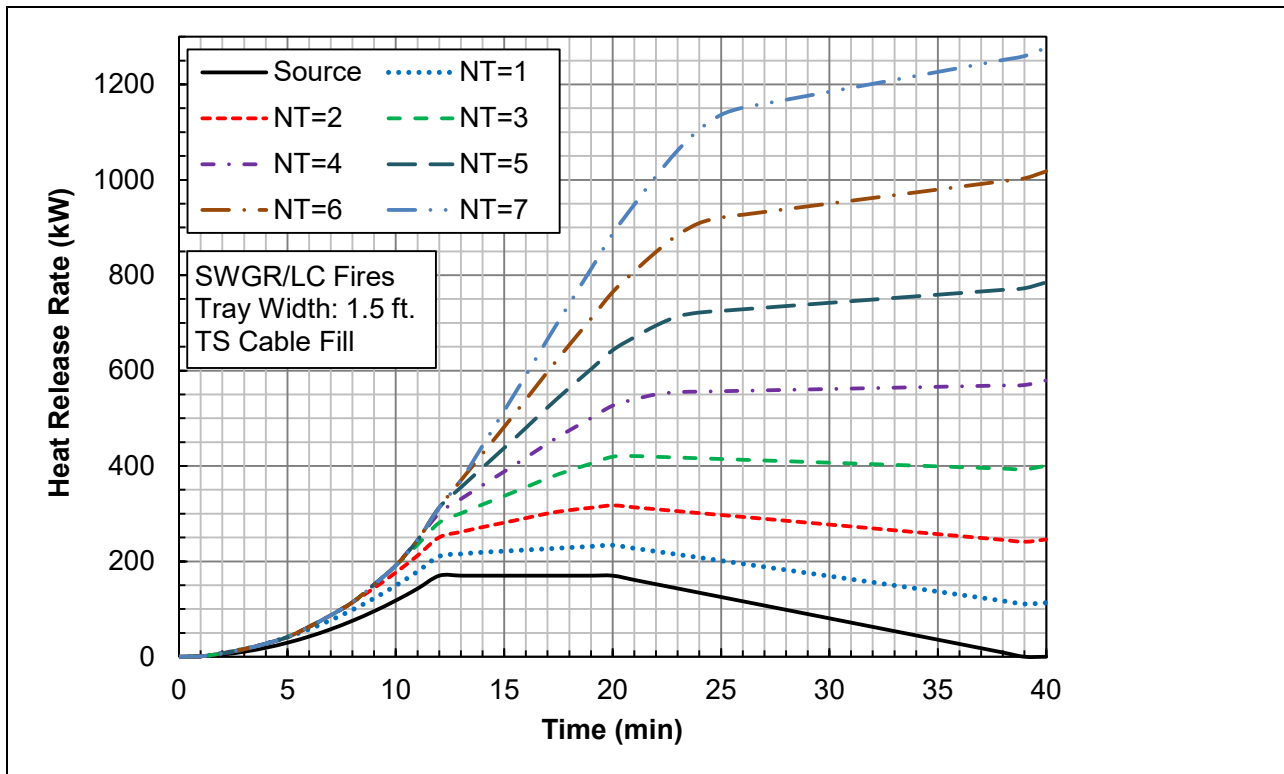


Figure C.19.b: HRR Plots of Switchgear/Load Center & 1.5 ft. TS Cable Tray Fires

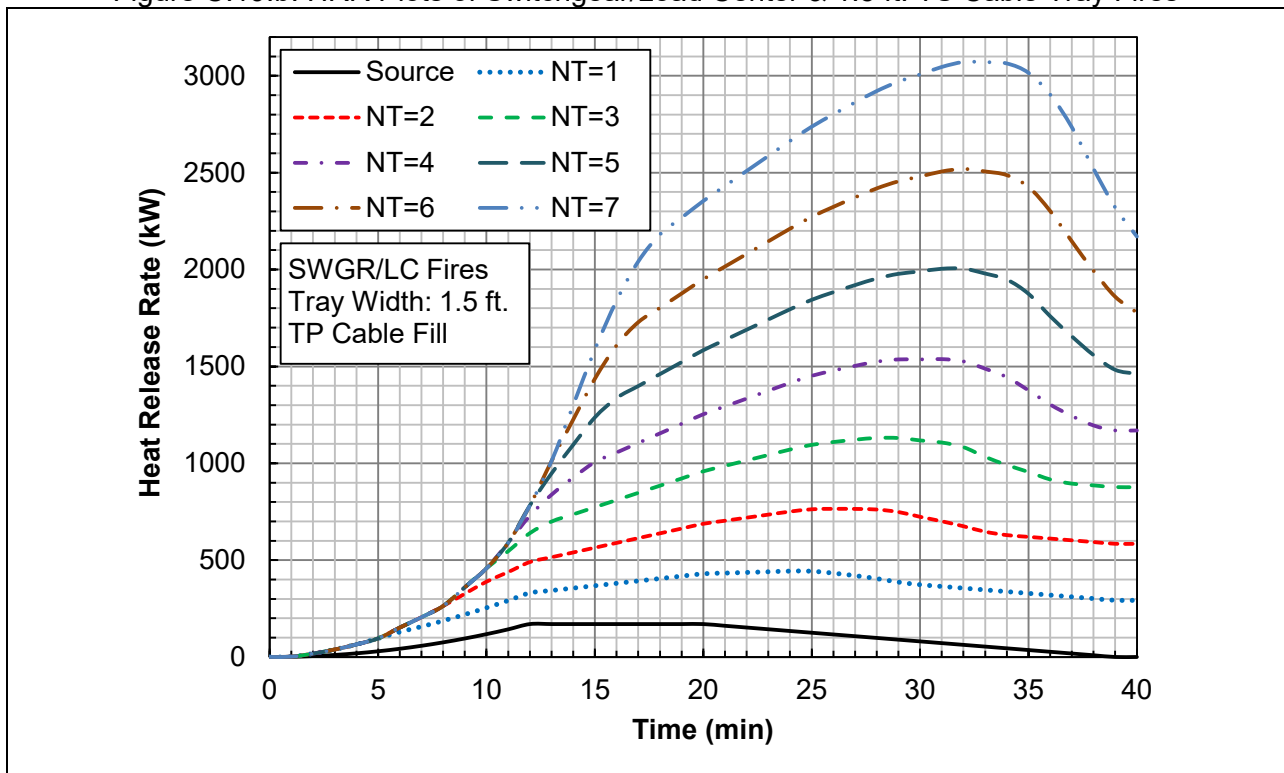


Figure C.19.c: HRR Plots of Switchgear/Load Center & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	10	10	10	10	10	10	10	30	30	30	30	30	30	30
3	22	22	22	22	22	22	22	67	67	67	67	67	67	67
4	36	36	36	36	36	36	36	111	111	111	111	111	111	111
5	54	54	54	54	54	54	54	162	162	162	162	162	162	162
6	74	84	84	84	84	84	84	215	261	261	261	261	261	261
7	96	117	117	117	117	117	117	255	352	352	352	352	352	352
8	122	153	153	153	153	153	153	298	451	451	451	451	451	451
9	150	193	208	208	208	208	208	342	558	624	624	624	624	624
10	181	236	266	266	266	266	266	389	660	798	798	798	798	798
11	215	282	328	347	347	347	347	439	734	949	1036	1036	1036	1036
12	251	331	393	432	457	457	457	491	810	1108	1288	1395	1395	1395
13	261	354	432	492	541	570	570	516	860	1228	1505	1726	1854	1854
14	268	374	469	550	624	682	716	540	909	1302	1682	2021	2283	2432
15	273	393	505	607	706	795	863	565	959	1376	1841	2304	2705	3008
16	278	412	542	665	791	909	1012	590	1008	1450	1940	2503	3048	3511
17	283	431	579	725	876	1025	1163	614	1057	1524	2039	2626	3287	3914
18	288	445	611	779	958	1138	1311	639	1107	1598	2137	2750	3435	4193
19	293	455	640	831	1036	1248	1456	664	1156	1672	2236	2873	3583	4366
20	298	465	669	883	1116	1359	1604	688	1205	1746	2335	2997	3731	4539
21	294	466	681	918	1179	1455	1736	704	1246	1811	2425	3111	3871	4703
22	290	466	687	948	1237	1545	1864	720	1286	1876	2515	3226	4010	4867
23	286	467	693	967	1284	1626	1981	736	1327	1941	2604	3340	4149	5031
24	282	468	698	977	1310	1684	2078	751	1367	2007	2694	3455	4288	5194
25	278	469	704	988	1326	1717	2148	759	1400	2064	2776	3561	4420	5351
26	274	470	710	999	1341	1737	2187	748	1413	2102	2839	3649	4532	5487
27	270	471	716	1010	1357	1758	2212	731	1421	2135	2896	3731	4639	5619
28	266	472	722	1021	1373	1779	2238	710	1424	2162	2949	3808	4740	5745
29	262	473	728	1031	1388	1799	2264	683	1407	2170	2981	3865	4822	5852
30	258	474	734	1042	1404	1820	2289	665	1367	2154	2990	3899	4880	5935
31	254	475	740	1053	1420	1841	2315	656	1329	2142	3002	3936	4942	6021
32	250	476	745	1064	1436	1861	2340	647	1287	2103	2988	3946	4977	6081
33	246	477	751	1075	1451	1882	2366	638	1240	2011	2921	3904	4960	6088
34	242	478	757	1085	1467	1903	2392	629	1213	1937	2843	3850	4931	6084
35	238	479	763	1096	1483	1923	2417	620	1205	1874	2716	3713	4818	5996
36	234	479	769	1107	1499	1944	2443	611	1196	1805	2578	3490	4578	5781
37	230	480	775	1118	1514	1965	2469	602	1187	1771	2469	3291	4274	5452
38	226	481	781	1129	1530	1985	2494	593	1178	1762	2380	3107	3979	5032
39	222	482	786	1139	1546	2006	2520	584	1169	1753	2338	2964	3720	4641
40	227	492	801	1159	1571	2036	2554	584	1169	1753	2338	2922	3557	4342

Figure C.20.a: Table of HRRs of Switchgear/Load Center & 3.0 ft. Cable Tray Fires

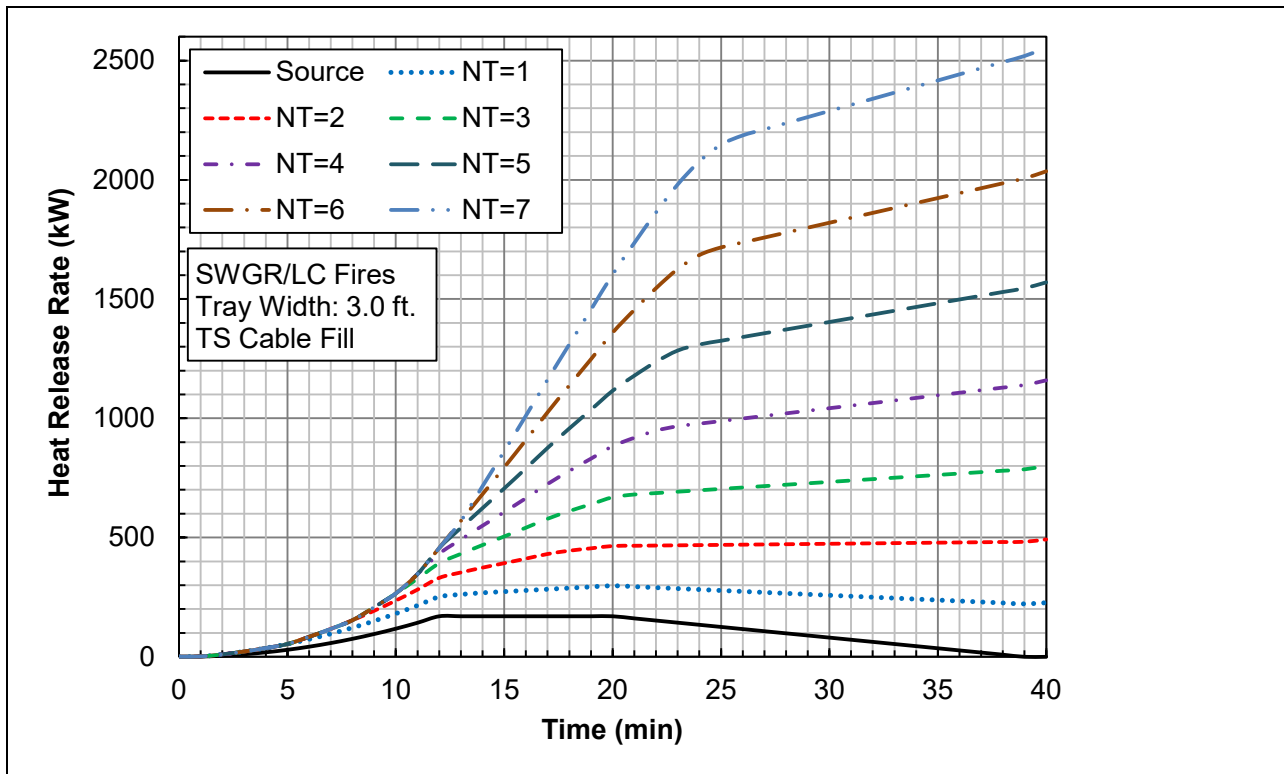


Figure C.20.b: HRR Plots of Switchgear/Load Center & 3.0 ft. TS Cable Tray Fires

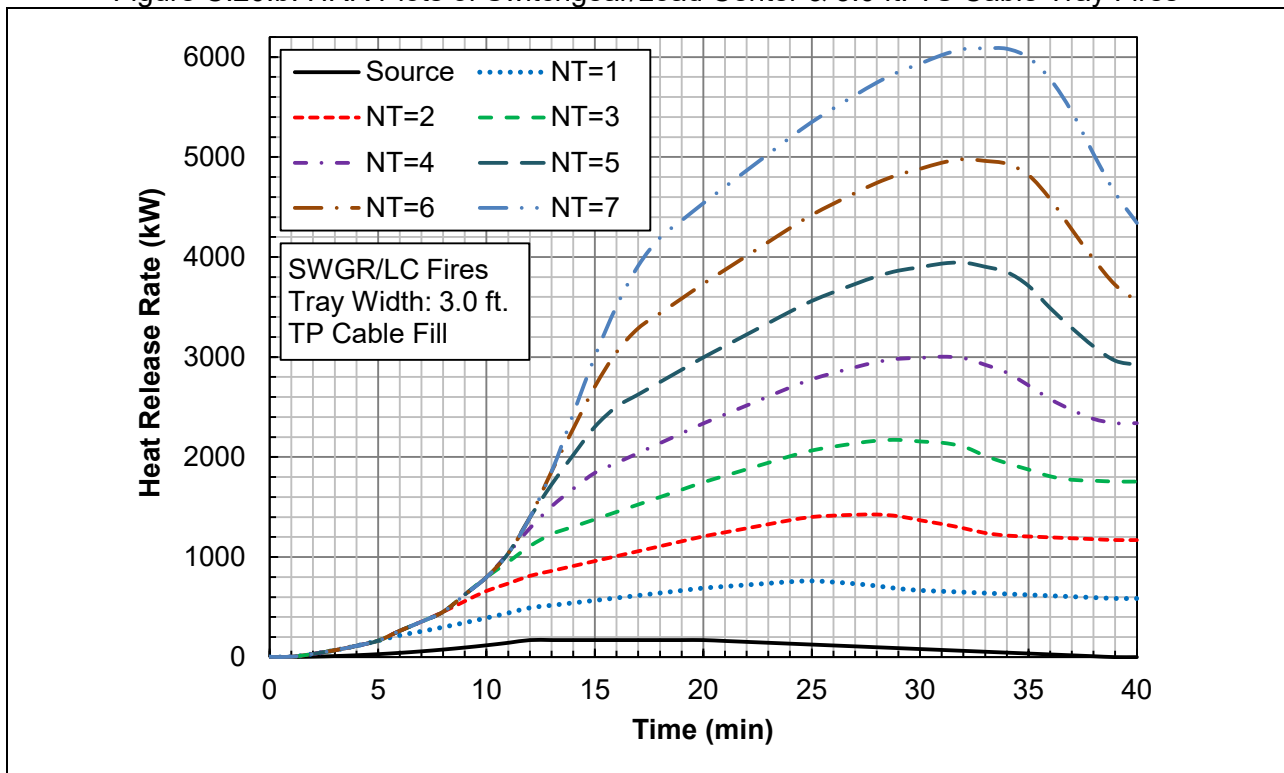


Figure C.20.c: HRR Plots of Switchgear/Load Center & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	6	6	6	6	6	6	6	15	15	15	15	15	15	15
3	13	13	13	13	13	13	13	34	34	34	34	34	34	34
4	22	22	22	22	22	22	22	57	57	57	57	57	57	57
5	34	34	34	34	34	34	34	84	84	84	84	84	84	84
6	47	52	52	52	52	52	52	113	135	135	135	135	135	135
7	62	72	72	72	72	72	72	137	184	184	184	184	184	184
8	79	94	94	94	94	94	94	163	237	237	237	237	237	237
9	98	119	126	126	126	126	126	191	294	326	326	326	326	326
10	119	145	160	160	160	160	160	221	350	417	417	417	417	417
11	143	174	197	206	206	206	206	252	394	498	540	540	540	540
12	168	206	235	255	267	267	267	285	439	583	671	724	724	724
13	172	216	254	283	307	322	322	297	464	642	777	886	949	949
14	176	226	272	312	348	376	393	310	489	679	865	1031	1160	1233
15	178	235	290	339	388	431	465	322	513	716	944	1170	1367	1517
16	181	245	307	368	429	487	538	334	538	753	993	1269	1537	1765
17	183	254	326	397	471	544	612	347	563	790	1042	1331	1656	1965
18	186	261	341	423	511	599	684	359	587	828	1092	1392	1730	2103
19	188	266	356	448	549	653	756	371	612	865	1141	1454	1804	2190
20	191	271	370	474	588	708	828	384	637	902	1191	1516	1878	2276
21	187	269	374	489	617	752	891	390	655	932	1233	1571	1945	2356
22	183	268	374	502	644	795	952	395	673	963	1276	1626	2013	2436
23	179	266	375	509	665	832	1008	401	691	993	1319	1682	2080	2516
24	175	264	376	512	675	859	1053	407	710	1024	1362	1737	2148	2596
25	170	263	377	516	681	873	1086	409	724	1051	1401	1789	2212	2672
26	166	261	378	519	687	882	1103	403	730	1069	1432	1831	2267	2740
27	162	260	379	523	693	890	1114	394	733	1084	1460	1872	2320	2805
28	158	258	380	526	699	898	1125	382	734	1097	1485	1909	2370	2867
29	154	257	381	529	705	907	1136	368	725	1101	1501	1937	2410	2920
30	150	255	382	533	710	915	1146	357	704	1092	1505	1954	2439	2961
31	146	254	383	536	716	923	1157	351	685	1085	1510	1971	2469	3003
32	142	252	384	539	722	932	1168	344	663	1065	1502	1976	2486	3032
33	138	250	384	543	728	940	1179	338	638	1020	1469	1955	2478	3036
34	134	249	385	546	734	948	1189	331	623	982	1430	1928	2463	3034
35	130	247	386	550	740	957	1200	325	617	950	1367	1860	2407	2991
36	126	246	387	553	745	965	1211	318	610	915	1298	1751	2289	2885
37	122	244	388	556	751	973	1222	312	604	896	1243	1652	2139	2723
38	118	243	389	560	757	981	1233	305	597	890	1198	1560	1993	2515
39	114	241	390	563	763	990	1243	299	591	883	1175	1488	1864	2322
40	110	239	391	566	769	998	1254	292	584	877	1169	1461	1778	2169

Figure C.21.a: Table of HRRs of MCC/Battery Charger & 1.5 ft. Cable Tray Fires

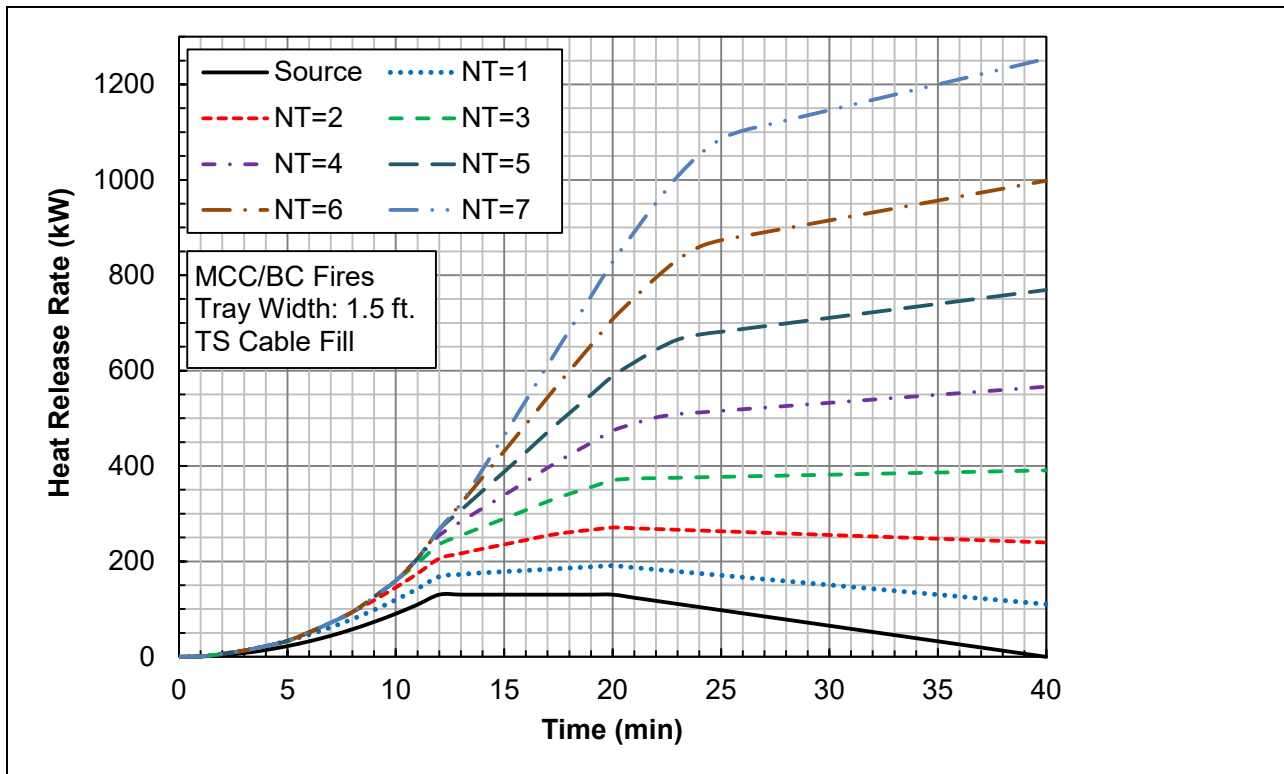


Figure C.21.b: HRR Plots of MCC/Battery Charger & 1.5 ft. TS Cable Tray Fires

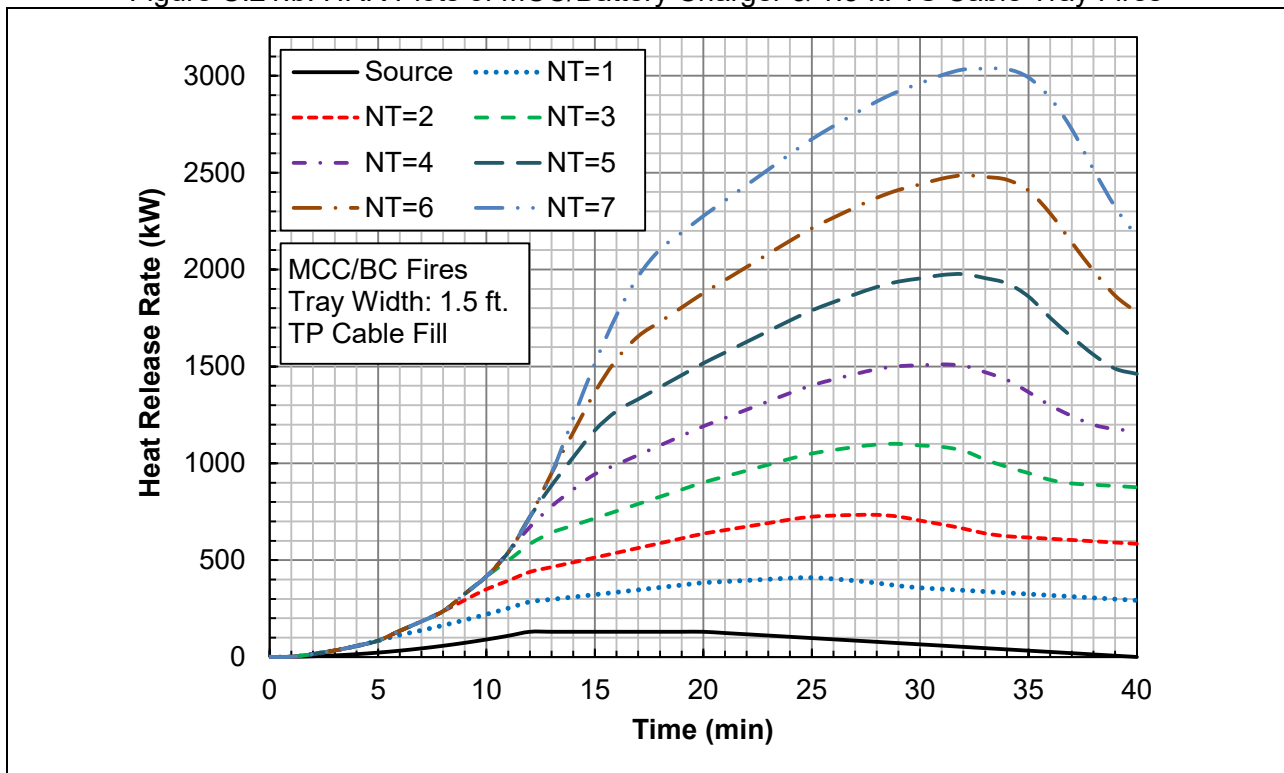


Figure C.21.c: HRR Plots of MCC/Battery Charger & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	8	8	8	8	8	8	8	27	27	27	27	27	27	27
3	18	18	18	18	18	18	18	59	59	59	59	59	59	59
4	30	30	30	30	30	30	30	99	99	99	99	99	99	99
5	45	45	45	45	45	45	45	146	146	146	146	146	146	146
6	61	71	71	71	71	71	71	194	238	238	238	238	238	238
7	80	99	99	99	99	99	99	231	323	323	323	323	323	323
8	100	130	130	130	130	130	130	269	415	415	415	415	415	415
9	123	164	179	179	179	179	179	309	515	579	579	579	579	579
10	149	201	230	230	230	230	230	351	610	744	744	744	744	744
11	176	240	284	303	303	303	303	394	678	887	972	972	972	972
12	206	281	341	379	403	403	403	440	748	1037	1212	1317	1317	1317
13	215	303	379	437	485	513	513	465	798	1155	1425	1641	1767	1767
14	222	322	414	493	566	623	656	489	847	1229	1600	1932	2189	2336
15	227	341	449	549	646	733	800	514	897	1303	1757	2211	2604	2903
16	232	359	485	605	728	844	945	539	946	1377	1856	2408	2944	3400
17	236	378	521	663	812	958	1093	563	995	1451	1955	2532	3181	3799
18	241	392	553	716	891	1068	1238	588	1045	1525	2054	2655	3329	4076
19	246	402	581	767	968	1176	1381	613	1094	1599	2152	2778	3477	4249
20	251	411	610	818	1046	1286	1526	637	1144	1673	2251	2902	3626	4422
21	250	415	624	855	1111	1381	1658	656	1186	1741	2343	3019	3767	4588
22	248	418	632	887	1170	1473	1786	674	1229	1808	2436	3136	3909	4755
23	247	422	640	908	1219	1554	1905	692	1272	1876	2528	3253	4050	4921
24	245	425	649	921	1247	1615	2002	710	1315	1943	2620	3370	4192	5087
25	243	428	657	934	1265	1649	2074	721	1351	2004	2705	3480	4327	5247
26	242	432	665	947	1283	1672	2115	715	1369	2047	2773	3572	4444	5388
27	240	435	673	961	1301	1695	2143	703	1382	2084	2835	3659	4555	5525
28	239	438	682	974	1319	1719	2171	686	1390	2117	2892	3740	4662	5656
29	237	442	690	987	1338	1742	2200	664	1378	2130	2930	3803	4749	5768
30	236	445	698	1000	1356	1765	2228	649	1343	2120	2945	3842	4813	5856
31	234	449	707	1014	1374	1788	2256	643	1311	2112	2962	3884	4879	5947
32	233	452	715	1027	1392	1811	2284	636	1273	2079	2953	3900	4920	6013
33	231	455	723	1040	1410	1834	2312	630	1230	1994	2893	3865	4910	6027
34	229	459	732	1053	1429	1857	2340	623	1208	1925	2821	3818	4887	6029
35	228	462	740	1067	1447	1881	2368	617	1201	1867	2701	3688	4782	5949
36	226	465	748	1080	1465	1904	2396	610	1195	1804	2571	3475	4553	5744
37	225	469	757	1093	1483	1927	2424	604	1188	1773	2467	3284	4259	5427
38	223	472	765	1106	1501	1950	2452	597	1182	1766	2383	3107	3973	5018
39	222	476	773	1120	1519	1973	2480	591	1175	1760	2344	2970	3722	4638
40	220	479	781	1133	1538	1996	2508	584	1169	1753	2338	2922	3556	4337

Figure C.22.a: Table of HRRs of MCC/Battery Charger & 3.0 ft. Cable Tray Fires

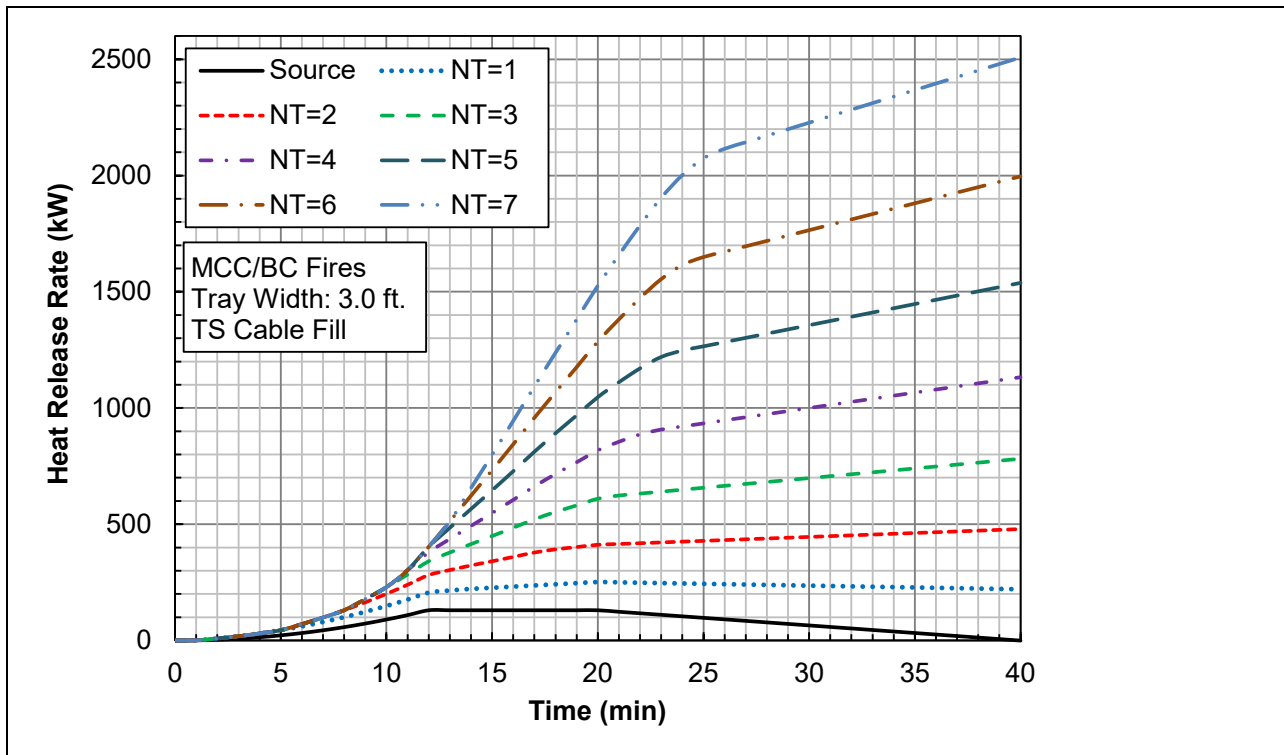


Figure C.22.b: HRR Plots of MCC/Battery Charger & 3.0 ft. TS Cable Tray Fires

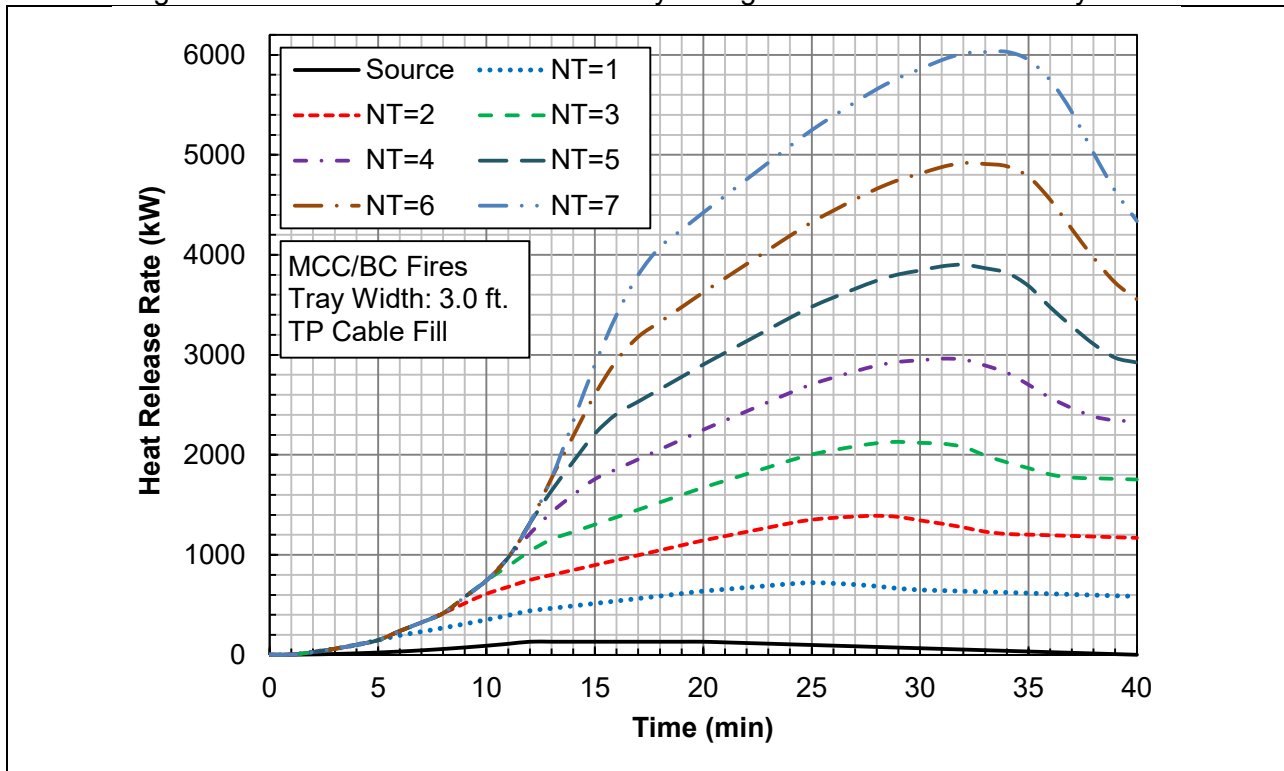


Figure C.22.c: HRR Plots of MCC/Battery Charger & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	8	8	8	8	8	8	8	19	19	19	19	19	19	19
3	18	18	18	18	18	18	18	42	42	42	42	42	42	42
4	31	31	31	31	31	31	31	70	70	70	70	70	70	70
5	47	47	47	47	47	47	47	104	104	104	104	104	104	104
6	66	72	72	72	72	72	72	140	164	164	164	164	164	164
7	88	99	99	99	99	99	99	170	220	220	220	220	220	220
8	113	130	130	130	130	130	130	204	283	283	283	283	283	283
9	141	163	171	171	171	171	171	239	350	384	384	384	384	384
10	172	200	216	216	216	216	216	278	417	488	488	488	488	488
11	206	240	264	274	274	274	274	320	471	581	625	625	625	625
12	243	284	315	335	348	348	348	364	527	679	771	825	825	825
13	248	295	335	366	391	405	405	376	552	740	881	993	1058	1058
14	251	306	354	395	433	463	480	389	577	777	970	1142	1274	1349
15	254	315	373	424	475	520	554	401	602	814	1050	1284	1487	1640
16	256	325	391	454	518	578	629	413	626	851	1099	1385	1660	1894
17	259	335	410	484	561	637	706	426	651	888	1149	1446	1780	2097
18	261	342	427	512	603	694	781	438	676	925	1198	1508	1854	2237
19	264	347	441	538	642	749	855	450	700	962	1248	1570	1928	2323
20	266	352	456	565	683	806	929	463	725	999	1297	1631	2002	2410
21	258	346	456	576	709	848	990	465	739	1025	1336	1683	2066	2486
22	250	340	453	586	732	888	1049	466	753	1052	1375	1734	2130	2562
23	242	335	450	589	750	922	1102	468	767	1078	1414	1785	2193	2637
24	234	329	447	588	757	946	1144	470	782	1105	1452	1836	2257	2713
25	226	324	443	587	758	956	1174	468	792	1127	1487	1883	2316	2785
26	218	318	440	587	760	960	1187	455	792	1140	1512	1920	2365	2847
27	210	313	437	586	762	965	1194	440	789	1149	1534	1954	2412	2906
28	202	307	434	586	764	969	1201	422	783	1156	1553	1986	2456	2962
29	194	301	431	585	766	973	1208	402	768	1153	1562	2008	2490	3008
30	186	296	428	584	767	977	1214	387	740	1138	1559	2017	2512	3042
31	177	290	425	584	769	982	1221	376	715	1125	1559	2029	2536	3079
32	169	285	422	583	771	986	1228	366	687	1098	1544	2027	2546	3102
33	161	279	418	582	773	990	1235	355	656	1045	1503	1998	2530	3098
34	153	273	415	582	775	995	1241	345	637	1000	1457	1964	2508	3088
35	145	268	412	581	777	999	1248	334	626	962	1386	1888	2444	3036
36	137	262	409	580	778	1003	1255	324	616	921	1309	1768	2315	2920
37	129	257	406	580	780	1007	1262	313	605	898	1248	1661	2154	2747
38	121	251	403	579	782	1012	1268	303	595	887	1196	1561	1999	2528
39	113	245	400	578	784	1016	1275	292	584	877	1169	1482	1861	2324
40	115	250	407	588	796	1031	1292	292	584	877	1169	1461	1779	2172

Figure C.23.a: Table of HRRs of Power Inverter & 1.5 ft. Cable Tray Fires

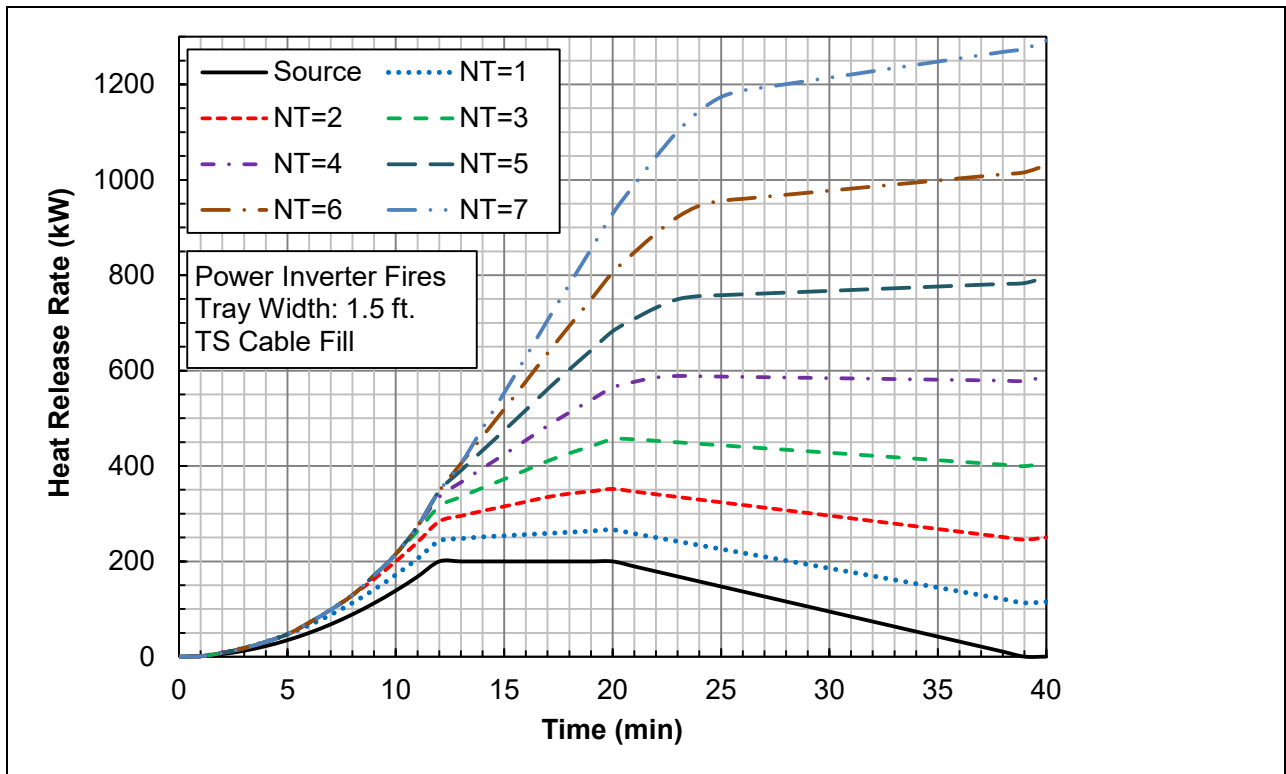


Figure C.23.b: HRR Plots of Power Inverter & 1.5 ft. TS Cable Tray Fires

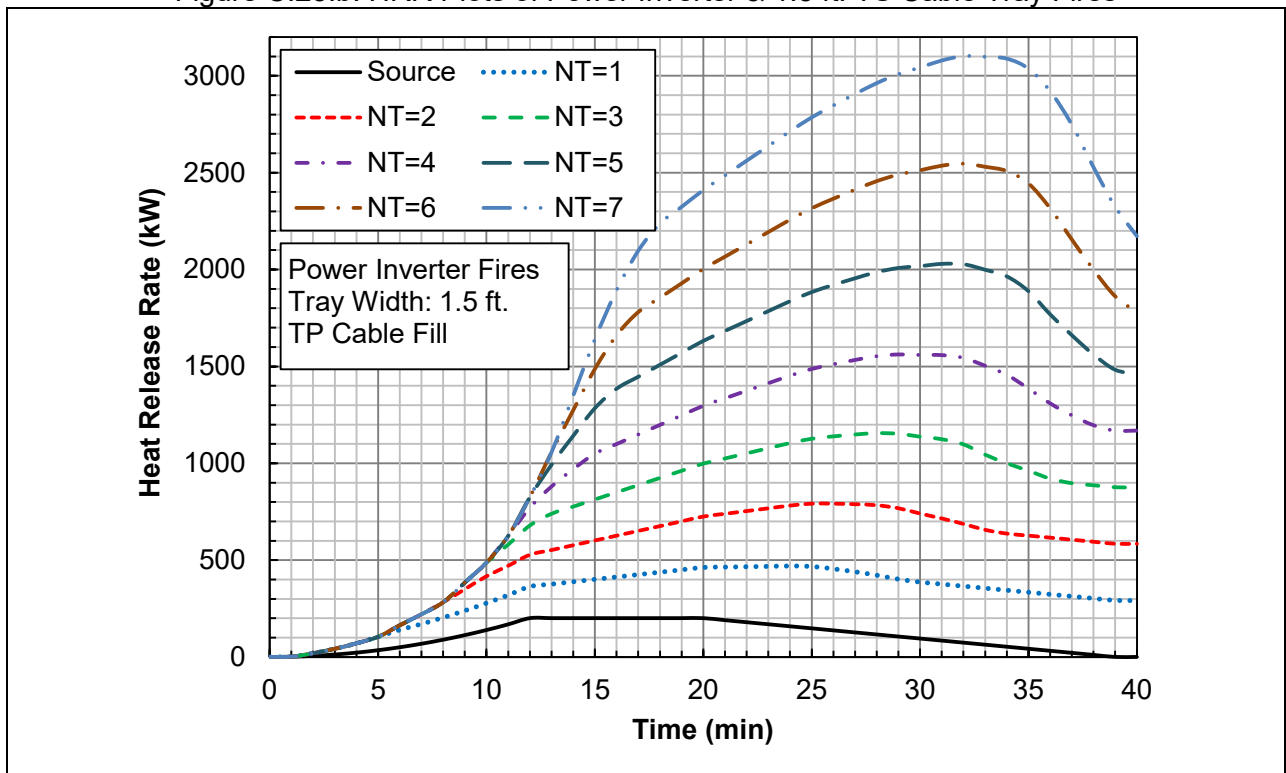


Figure C.23.c: HRR Plots of Power Inverter & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	11	11	11	11	11	11	11	32	32	32	32	32	32	32
3	24	24	24	24	24	24	24	71	71	71	71	71	71	71
4	41	41	41	41	41	41	41	119	119	119	119	119	119	119
5	60	60	60	60	60	60	60	174	174	174	174	174	174	174
6	83	93	93	93	93	93	93	230	277	277	277	277	277	277
7	109	130	130	130	130	130	130	273	373	373	373	373	373	373
8	138	170	170	170	170	170	170	318	476	476	476	476	476	476
9	170	214	229	229	229	229	229	366	588	656	656	656	656	656
10	205	262	292	292	292	292	292	418	695	837	837	837	837	837
11	244	313	359	379	379	379	379	471	774	994	1082	1082	1082	1082
12	285	367	430	471	495	495	495	528	855	1159	1341	1451	1451	1451
13	295	391	471	532	581	611	611	553	904	1279	1561	1785	1915	1915
14	303	411	509	591	666	725	759	577	954	1353	1740	2083	2348	2499
15	308	430	545	649	750	839	908	602	1003	1428	1900	2369	2774	3081
16	312	450	583	708	835	955	1059	627	1052	1502	1999	2569	3120	3588
17	317	470	621	769	923	1073	1212	651	1102	1576	2098	2693	3360	3994
18	322	484	654	824	1005	1187	1362	676	1151	1650	2196	2816	3509	4274
19	327	493	683	876	1085	1299	1509	701	1201	1724	2295	2940	3657	4447
20	332	503	712	929	1166	1412	1659	726	1250	1798	2394	3063	3805	4620
21	327	503	722	964	1228	1507	1791	740	1289	1861	2482	3176	3942	4782
22	321	502	727	992	1285	1597	1918	754	1328	1925	2570	3289	4080	4944
23	315	501	731	1009	1331	1676	2035	768	1367	1988	2659	3402	4218	5107
24	310	501	735	1018	1355	1734	2131	782	1405	2052	2747	3515	4355	5269
25	304	500	739	1028	1369	1765	2200	788	1436	2107	2827	3619	4485	5423
26	299	499	744	1037	1384	1784	2238	774	1446	2142	2886	3704	4594	5557
27	293	499	748	1046	1398	1803	2262	754	1451	2172	2941	3783	4697	5685
28	288	498	752	1055	1412	1822	2286	729	1451	2196	2990	3857	4796	5808
29	282	497	757	1065	1426	1841	2310	699	1431	2201	3019	3910	4874	5911
30	276	497	761	1074	1440	1860	2334	679	1386	2181	3024	3940	4929	5990
31	271	496	765	1083	1454	1879	2358	669	1346	2165	3033	3974	4987	6073
32	265	495	769	1092	1468	1898	2382	658	1300	2123	3015	3980	5018	6130
33	260	495	774	1101	1483	1918	2406	648	1250	2027	2944	3934	4997	6132
34	254	494	778	1111	1497	1937	2430	637	1221	1948	2861	3876	4963	6124
35	248	494	782	1120	1511	1956	2454	626	1211	1882	2729	3733	4845	6031
36	243	493	787	1129	1525	1975	2478	616	1200	1811	2587	3505	4599	5809
37	237	492	791	1138	1539	1994	2502	605	1190	1774	2474	3300	4288	5473
38	232	492	795	1148	1553	2013	2526	595	1179	1764	2382	3112	3987	5045
39	226	491	799	1157	1568	2032	2550	584	1169	1753	2338	2965	3723	4648
40	231	501	814	1177	1592	2062	2585	584	1169	1753	2338	2922	3557	4344

Figure C.24.a: Table of HRRs of Power Inverter & 3.0 ft. Cable Tray Fires

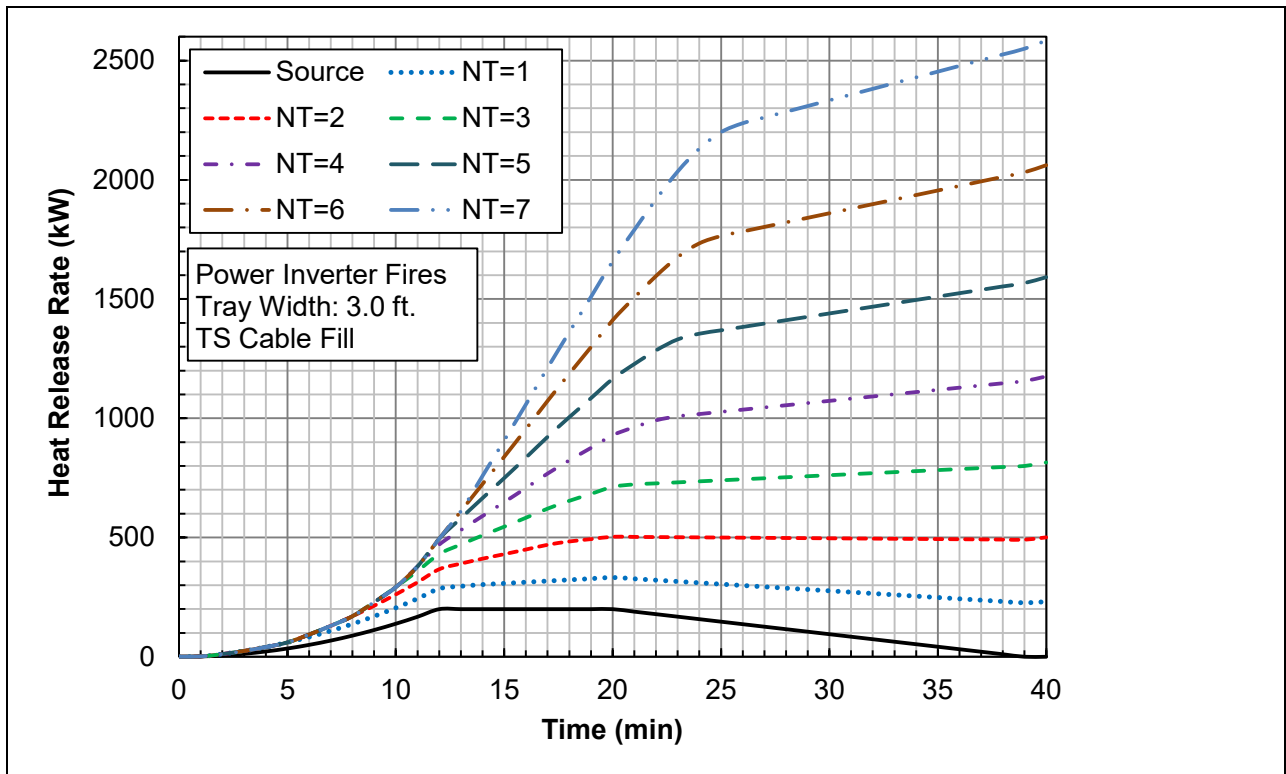


Figure C.24.b: HRR Plots of Power Inverter & 3.0 ft. TS Cable Tray Fires

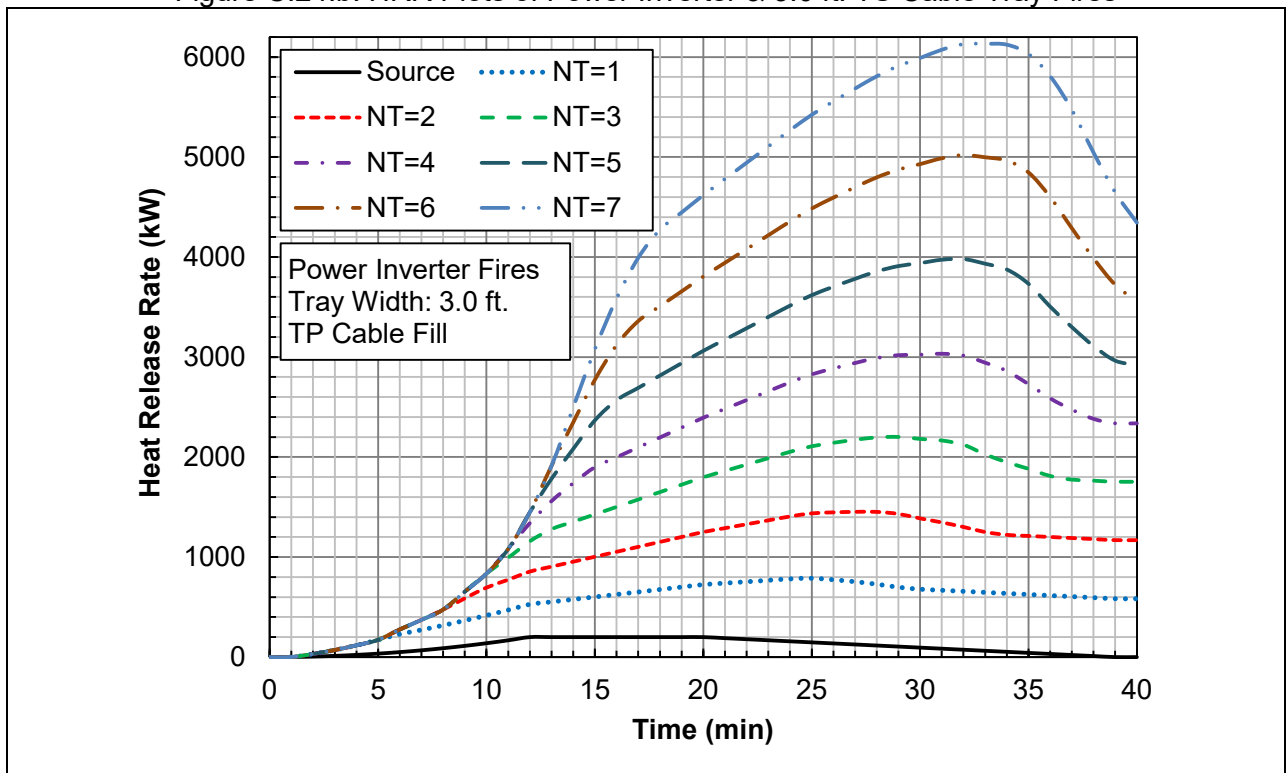


Figure C.24.c: HRR Plots of Power Inverter & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2	15	15	15	15	15	15	15	28	28	28	28	28	28	28
3	33	33	33	33	33	33	33	62	62	62	62	62	62	62
4	56	56	56	56	56	56	56	104	104	104	104	104	104	104
5	86	86	86	86	86	86	86	154	154	154	154	154	154	154
6	121	127	127	127	127	127	127	208	236	236	236	236	236	236
7	162	174	174	174	174	174	174	257	315	315	315	315	315	315
8	208	227	227	227	227	227	227	311	402	402	402	402	402	402
9	261	286	295	295	295	295	295	370	497	535	535	535	535	535
10	319	352	369	369	369	369	369	436	593	671	671	671	671	671
11	383	423	449	460	460	460	460	506	676	797	846	846	846	846
12	452	500	535	557	570	570	570	582	764	932	1031	1089	1089	1089
13	458	513	558	591	617	633	633	595	789	995	1147	1267	1336	1336
14	462	525	579	623	664	695	713	607	814	1032	1241	1424	1564	1643
15	465	535	599	655	709	756	793	619	838	1069	1324	1574	1788	1949
16	467	546	619	687	755	819	873	632	863	1106	1373	1677	1968	2213
17	470	557	640	720	803	882	955	644	888	1143	1422	1738	2091	2423
18	472	564	658	750	847	943	1035	656	912	1180	1472	1800	2165	2566
19	475	569	673	778	889	1003	1113	669	937	1217	1521	1862	2239	2652
20	477	574	689	806	932	1063	1192	681	962	1254	1571	1923	2313	2739
21	460	559	680	810	951	1098	1248	674	966	1271	1600	1965	2367	2805
22	442	544	667	810	967	1131	1300	666	971	1288	1629	2007	2421	2871
23	425	529	654	805	976	1159	1347	658	976	1305	1659	2049	2475	2938
24	407	513	642	794	974	1174	1382	651	981	1322	1688	2090	2529	3004
25	390	498	629	784	966	1175	1403	637	980	1334	1712	2127	2578	3065
26	372	483	617	774	959	1170	1408	612	966	1333	1723	2150	2614	3113
27	354	468	604	764	951	1165	1405	583	950	1329	1732	2171	2647	3159
28	337	453	591	754	943	1159	1402	552	931	1323	1738	2189	2678	3202
29	319	438	579	744	936	1154	1400	518	901	1305	1732	2196	2697	3234
30	302	423	566	734	928	1149	1397	492	859	1275	1715	2191	2704	3253
31	284	408	554	724	920	1144	1394	472	820	1248	1701	2189	2714	3276
32	267	393	541	713	913	1139	1391	452	779	1207	1672	2173	2710	3284
33	249	378	528	703	905	1133	1389	432	735	1137	1614	2127	2677	3263
34	232	363	516	693	897	1128	1386	412	704	1077	1551	2076	2639	3237
35	214	348	503	683	890	1123	1383	392	684	1025	1462	1981	2556	3167
36	197	333	491	673	882	1118	1381	372	664	971	1369	1841	2405	3028
37	179	318	478	663	874	1113	1378	352	644	937	1292	1714	2221	2831
38	162	303	465	653	867	1107	1375	332	624	917	1228	1598	2045	2587
39	144	288	453	643	859	1102	1372	312	604	897	1189	1504	1888	2360
40	127	272	440	632	851	1097	1370	292	584	877	1169	1461	1780	2179

Figure C.25.a: Table of HRRs of Closed Large Enclosure & 1.5 ft. Cable Tray Fires

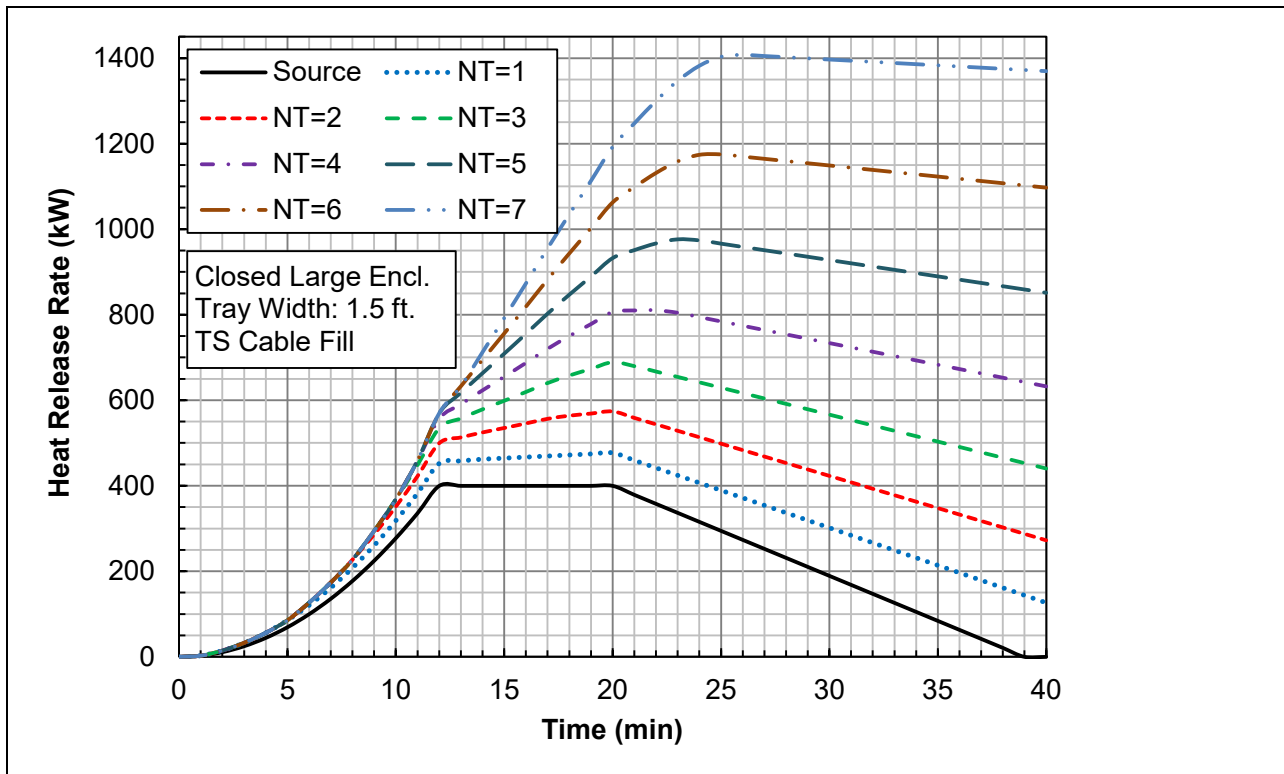


Figure C.25.b: HRR Plots of Closed Large Enclosure & 1.5 ft. TS Cable Tray Fires

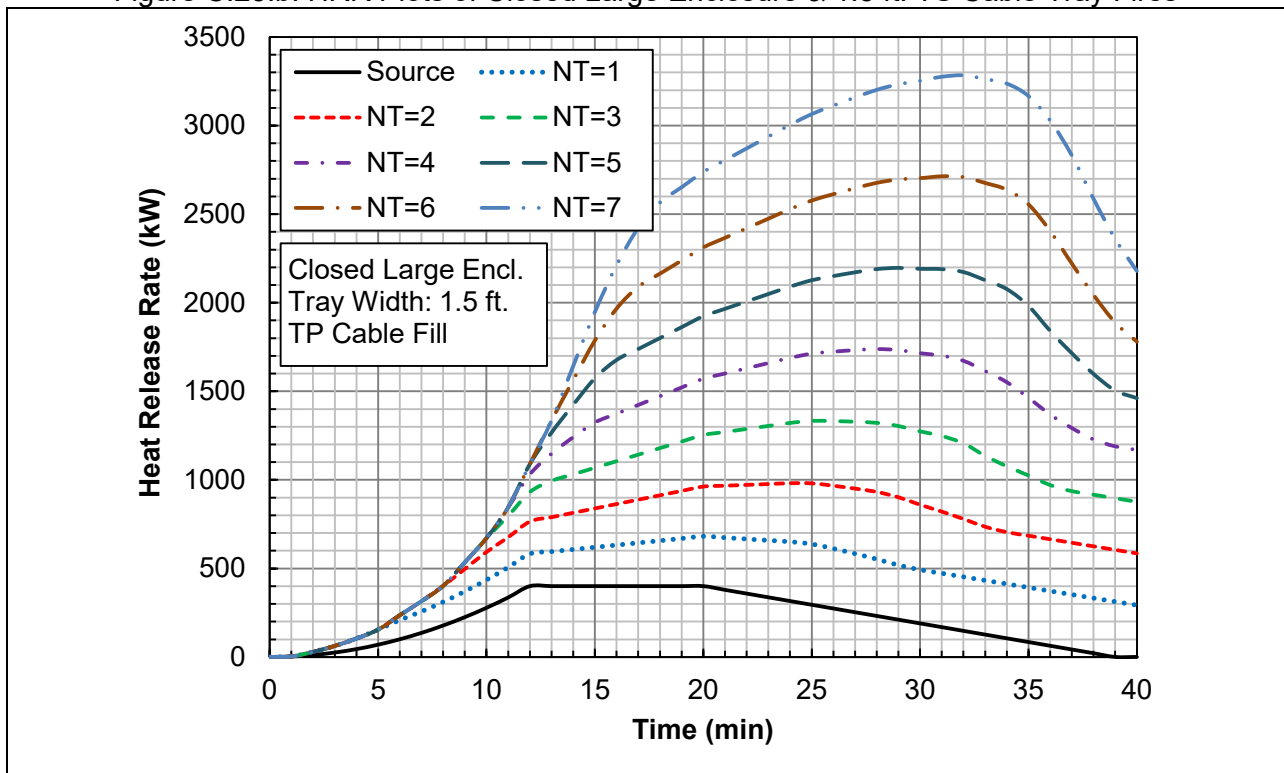


Figure C.25.c: HRR Plots of Closed Large Enclosure & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2	19	19	19	19	19	19	19	46	46	46	46	46	46	46
3	40	40	40	40	40	40	40	100	100	100	100	100	100	100
4	68	68	68	68	68	68	68	164	164	164	164	164	164	164
5	102	102	102	102	102	102	102	239	239	239	239	239	239	239
6	142	154	154	154	154	154	154	317	372	372	372	372	372	372
7	187	212	212	212	212	212	212	378	493	493	493	493	493	493
8	239	277	277	277	277	277	277	444	625	625	625	625	625	625
9	297	348	365	365	365	365	365	516	768	844	844	844	844	844
10	360	425	460	460	460	460	460	593	908	1065	1065	1065	1065	1065
11	430	509	561	583	583	583	583	676	1015	1259	1355	1355	1355	1355
12	505	599	670	713	740	740	740	765	1129	1463	1662	1779	1779	1779
13	517	626	715	781	835	866	866	790	1178	1590	1895	2134	2272	2272
14	525	649	757	847	927	990	1026	814	1227	1664	2081	2448	2729	2887
15	530	670	798	910	1018	1113	1185	839	1277	1738	2247	2747	3176	3498
16	535	691	839	975	1111	1238	1347	864	1326	1812	2346	2953	3535	4026
17	540	713	880	1041	1205	1365	1511	888	1375	1886	2445	3077	3781	4446
18	544	728	916	1100	1294	1487	1670	913	1425	1960	2544	3200	3929	4731
19	549	738	946	1156	1379	1605	1826	938	1474	2034	2642	3323	4077	4904
20	554	747	978	1213	1465	1725	1985	962	1524	2108	2741	3447	4226	5077
21	539	737	979	1240	1522	1817	2115	967	1553	2162	2820	3550	4354	5230
22	524	727	974	1261	1573	1903	2240	972	1582	2216	2899	3654	4482	5383
23	509	717	969	1269	1613	1977	2354	976	1612	2270	2977	3757	4610	5536
24	494	707	964	1269	1628	2028	2444	981	1641	2324	3056	3861	4738	5688
25	479	697	958	1269	1632	2050	2507	975	1660	2368	3124	3953	4855	5830
26	464	687	953	1268	1637	2059	2535	943	1653	2385	3166	4020	4947	5947
27	449	677	948	1268	1642	2069	2550	906	1640	2398	3204	4082	5034	6058
28	434	666	943	1268	1646	2079	2565	864	1623	2405	3236	4139	5115	6164
29	419	656	938	1268	1651	2088	2579	817	1583	2389	3245	4173	5173	6247
30	404	646	932	1267	1656	2098	2594	784	1518	2349	3229	4182	5207	6306
31	389	636	927	1267	1660	2108	2608	764	1460	2317	3221	4198	5249	6372
32	374	626	922	1267	1665	2117	2623	744	1398	2254	3183	4185	5260	6408
33	359	616	917	1267	1670	2127	2637	724	1330	2133	3087	4114	5213	6386
34	343	606	912	1266	1675	2136	2652	704	1289	2034	2981	4033	5157	6355
35	328	596	906	1266	1679	2146	2666	684	1269	1951	2825	3863	5012	6234
36	313	585	901	1266	1684	2156	2681	664	1249	1862	2657	3601	4730	5977
37	298	575	896	1266	1689	2165	2696	644	1229	1813	2524	3369	4383	5603
38	283	565	891	1265	1693	2175	2710	624	1209	1793	2415	3155	4049	5133
39	268	555	886	1265	1698	2185	2725	604	1189	1773	2358	2988	3757	4700
40	253	545	881	1265	1703	2194	2739	584	1169	1753	2338	2922	3561	4358

Figure C.26.a: Table of HRRs of Closed Large Enclosure & 3.0 ft. Cable Tray Fires

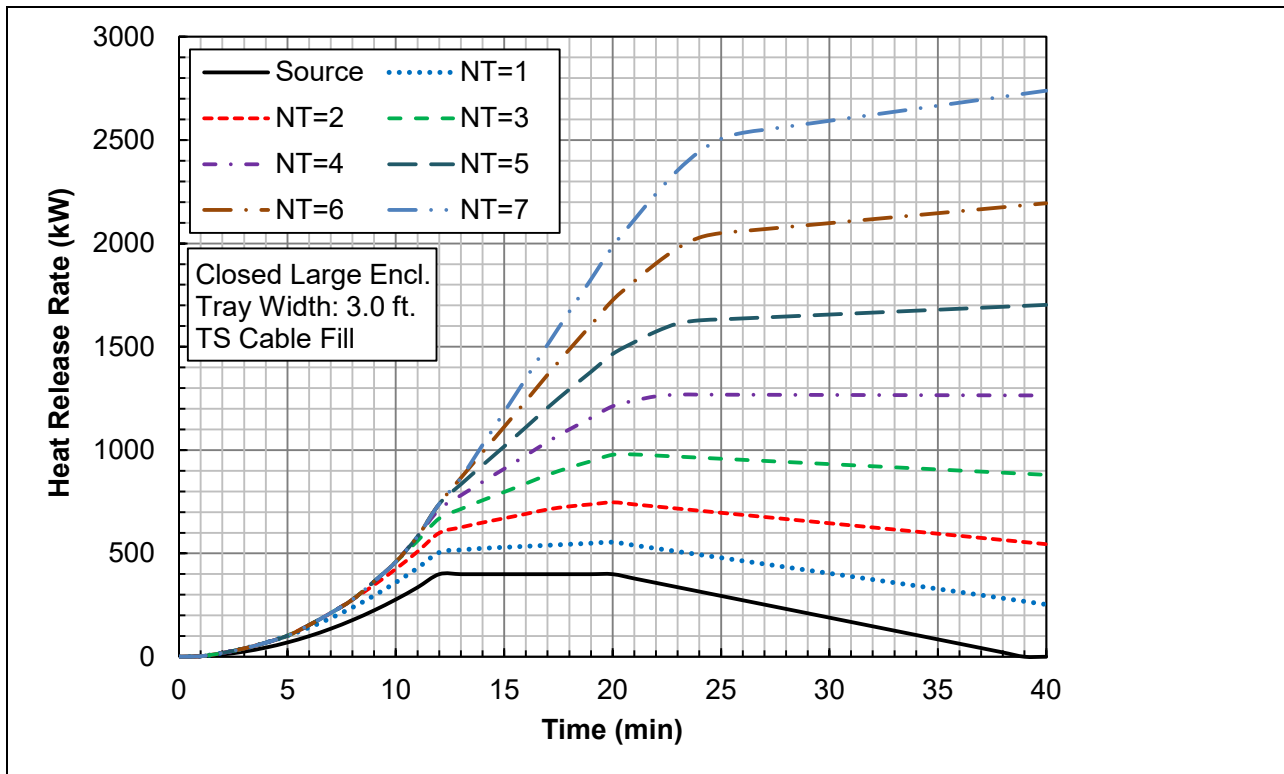


Figure C.26.b: HRR Plots of Closed Large Enclosure & 3.0 ft. TS Cable Tray Fires

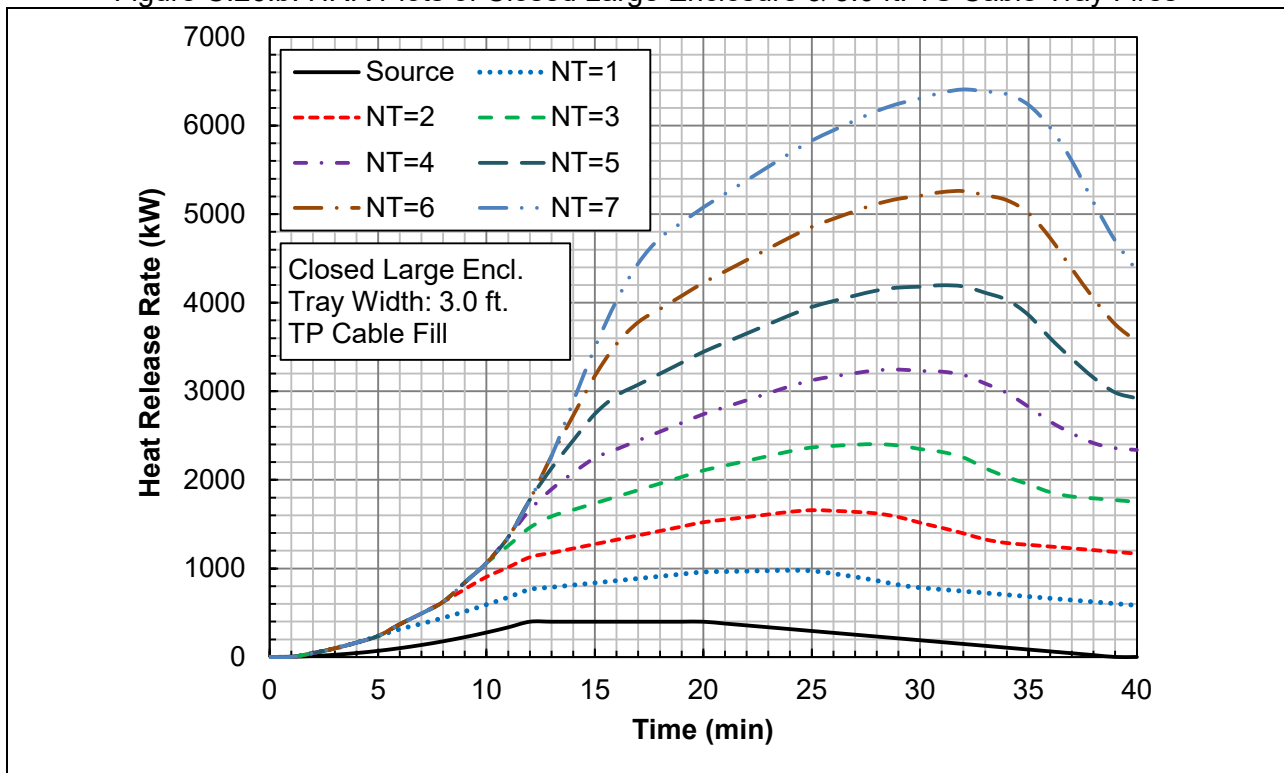


Figure C.26.c: HRR Plots of Closed Large Enclosure & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2	33	33	33	33	33	33	33	52	52	52	52	52	52	52
3	74	74	74	74	74	74	74	114	114	114	114	114	114	114
4	128	128	128	128	128	128	128	192	192	192	192	192	192	192
5	196	196	196	196	196	196	196	287	287	287	287	287	287	287
6	279	287	287	287	287	287	287	392	427	427	427	427	427	427
7	376	391	391	391	391	391	391	495	567	567	567	567	567	567
8	486	510	510	510	510	510	510	611	723	723	723	723	723	723
9	611	644	654	654	654	654	654	742	896	941	941	941	941	941
10	750	791	811	811	811	811	811	886	1077	1169	1169	1169	1169	1169
11	903	953	984	996	996	996	996	1044	1247	1390	1445	1445	1445	1445
12	1070	1129	1171	1196	1211	1211	1211	1216	1432	1627	1741	1806	1806	1806
13	1078	1146	1198	1236	1266	1283	1283	1228	1456	1696	1870	2004	2080	2080
14	1083	1160	1223	1274	1320	1354	1374	1241	1481	1733	1970	2175	2329	2415
15	1085	1172	1247	1311	1372	1424	1463	1253	1506	1770	2058	2336	2572	2747
16	1087	1184	1270	1348	1424	1494	1554	1265	1530	1807	2108	2445	2764	3031
17	1090	1196	1294	1386	1478	1566	1646	1278	1555	1844	2157	2506	2892	3253
18	1092	1204	1314	1420	1528	1634	1734	1290	1580	1881	2206	2568	2966	3401
19	1095	1209	1331	1451	1575	1700	1820	1302	1604	1918	2256	2630	3040	3488
20	1097	1214	1349	1482	1623	1766	1908	1315	1629	1955	2305	2692	3115	3574
21	1047	1166	1307	1456	1613	1775	1937	1275	1601	1939	2302	2701	3136	3608
22	997	1119	1262	1425	1599	1780	1964	1234	1573	1924	2299	2710	3157	3642
23	947	1071	1217	1387	1579	1779	1983	1194	1545	1908	2295	2719	3179	3675
24	897	1023	1172	1345	1544	1764	1990	1154	1517	1893	2292	2728	3200	3709
25	847	976	1127	1302	1504	1733	1981	1106	1482	1869	2281	2729	3214	3735
26	796	928	1081	1259	1464	1695	1953	1040	1428	1828	2252	2713	3210	3744
27	746	880	1036	1216	1423	1657	1918	972	1372	1785	2221	2694	3204	3749
28	696	833	991	1174	1383	1619	1882	901	1314	1739	2188	2673	3195	3753
29	646	785	946	1131	1343	1582	1847	828	1242	1679	2140	2638	3172	3742
30	596	737	900	1088	1302	1544	1812	766	1157	1606	2080	2590	3136	3719
31	546	689	855	1045	1262	1506	1776	713	1078	1540	2026	2548	3107	3702
32	495	642	810	1003	1222	1468	1741	661	997	1457	1955	2490	3061	3668
33	445	594	765	960	1182	1430	1706	608	913	1339	1850	2397	2980	3600
34	395	546	720	917	1141	1392	1670	555	848	1237	1742	2302	2897	3530
35	345	499	674	874	1101	1355	1635	503	795	1146	1607	2157	2765	3410
36	295	451	629	831	1061	1317	1600	450	742	1052	1467	1963	2558	3215
37	245	403	584	789	1020	1279	1564	397	690	982	1347	1787	2318	2959
38	194	356	539	746	980	1241	1529	345	637	929	1243	1623	2087	2653
39	144	308	493	703	940	1203	1494	292	584	877	1169	1487	1881	2370
40	147	313	501	713	952	1218	1511	292	584	877	1169	1461	1783	2192

Figure C.27.a: Table of HRRs of Open Large Enclosure & 1.5 ft. Cable Tray Fires

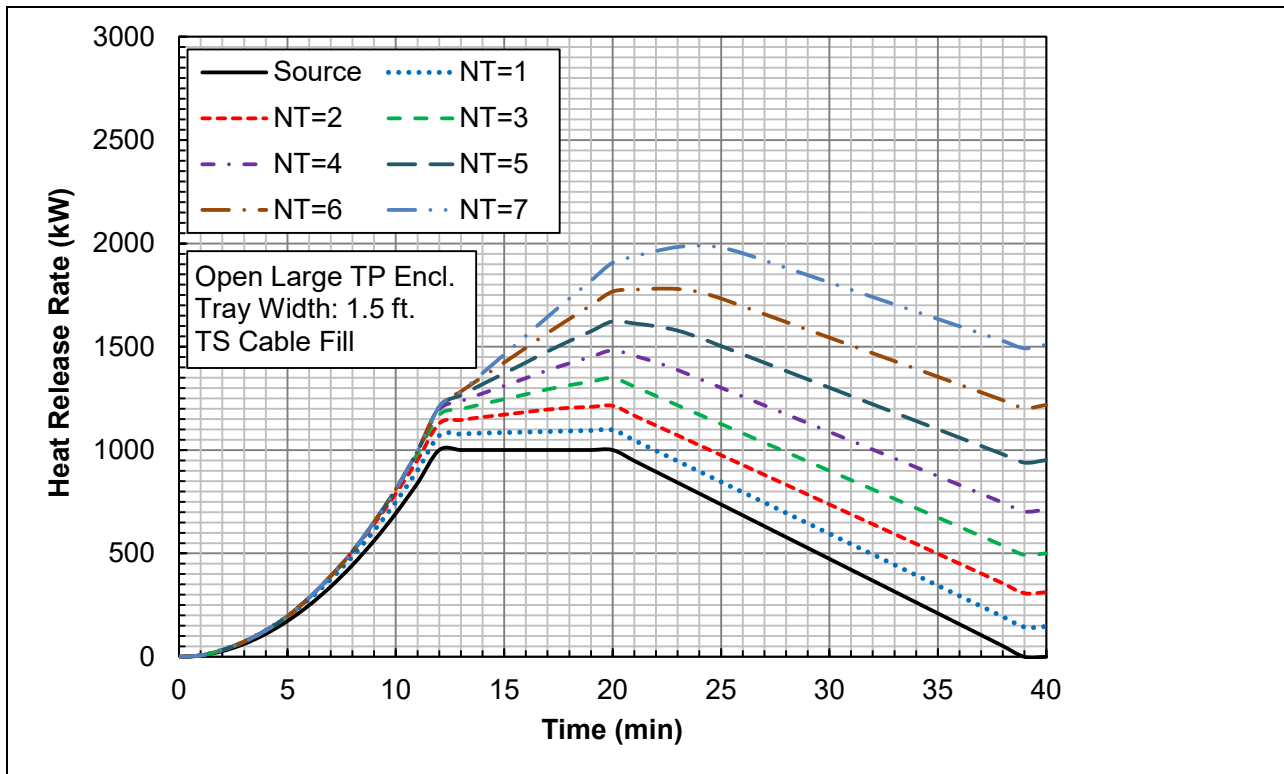


Figure C.27.b: HRR Plots of Open Large Enclosure & 1.5 ft. TS Cable Tray Fires

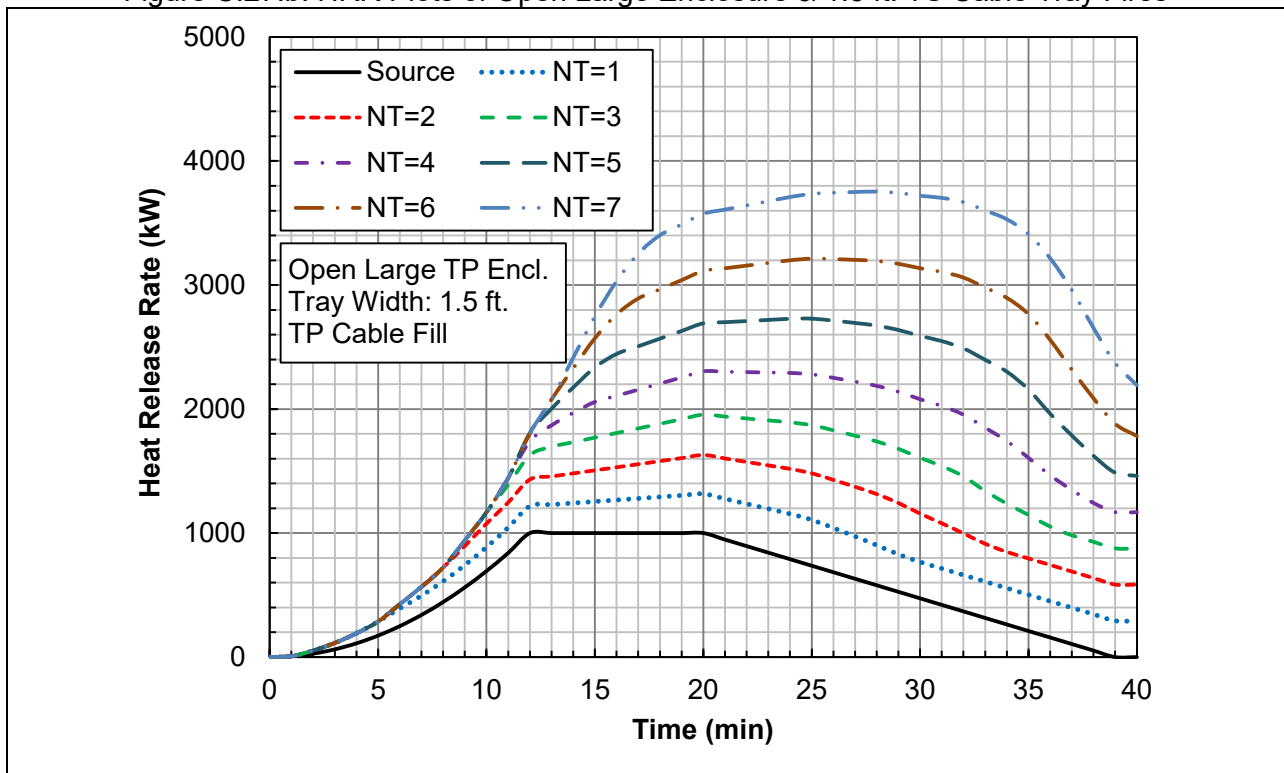


Figure C.27.c: HRR Plots of Open Large Enclosure & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2	39	39	39	39	39	39	39	77	77	77	77	77	77	77
3	85	85	85	85	85	85	85	165	165	165	165	165	165	165
4	145	145	145	145	145	145	145	273	273	273	273	273	273	273
5	219	219	219	219	219	219	219	400	400	400	400	400	400	400
6	308	324	324	324	324	324	324	534	603	603	603	603	603	603
7	411	443	443	443	443	443	443	649	793	793	793	793	793	793
8	528	576	576	576	576	576	576	778	1002	1002	1002	1002	1002	1002
9	660	725	745	745	745	745	745	921	1230	1320	1320	1320	1320	1320
10	806	888	928	928	928	928	928	1077	1459	1644	1644	1644	1644	1644
11	966	1065	1127	1152	1152	1152	1152	1248	1654	1940	2051	2051	2051	2051
12	1141	1258	1341	1391	1421	1421	1421	1432	1863	2255	2481	2613	2613	2613
13	1156	1291	1396	1473	1532	1567	1567	1457	1912	2392	2739	3007	3159	3159
14	1165	1319	1447	1549	1639	1708	1747	1481	1962	2466	2940	3349	3658	3831
15	1170	1343	1493	1622	1743	1848	1926	1506	2011	2540	3116	3673	4144	4495
16	1175	1368	1541	1696	1849	1989	2108	1531	2061	2614	3215	3889	4528	5062
17	1180	1392	1589	1772	1956	2132	2291	1556	2110	2688	3314	4013	4785	5506
18	1185	1408	1629	1840	2056	2268	2468	1580	2159	2762	3413	4136	4933	5802
19	1190	1418	1663	1902	2151	2400	2641	1605	2209	2836	3511	4260	5081	5975
20	1195	1428	1697	1965	2247	2533	2815	1630	2258	2910	3610	4383	5229	6148
21	1147	1385	1667	1964	2279	2603	2927	1602	2255	2931	3656	4454	5325	6268
22	1099	1343	1630	1956	2304	2666	3033	1574	2252	2953	3702	4525	5420	6388
23	1052	1300	1592	1933	2315	2716	3125	1546	2248	2974	3749	4596	5516	6509
24	1004	1257	1554	1900	2299	2738	3191	1518	2245	2996	3795	4666	5611	6629
25	956	1214	1516	1867	2271	2729	3225	1474	2226	3002	3825	4722	5691	6733
26	909	1172	1478	1834	2243	2706	3222	1396	2172	2972	3821	4742	5736	6803
27	861	1129	1441	1801	2215	2683	3204	1312	2113	2938	3811	4757	5776	6867
28	813	1086	1403	1768	2187	2660	3186	1223	2049	2899	3796	4767	5810	6927
29	765	1043	1365	1735	2159	2637	3168	1129	1957	2831	3754	4749	5817	6958
30	718	1001	1327	1702	2131	2614	3150	1058	1840	2739	3686	4706	5799	6964
31	670	958	1289	1670	2103	2591	3132	1005	1735	2659	3631	4675	5793	6983
32	622	915	1251	1637	2075	2568	3114	953	1626	2545	3541	4611	5753	6968
33	575	872	1214	1604	2047	2545	3096	900	1511	2363	3384	4478	5645	6885
34	527	830	1176	1571	2019	2522	3078	848	1432	2212	3221	4340	5532	6796
35	479	787	1138	1538	1992	2499	3059	795	1379	2081	3003	4104	5320	6610
36	432	744	1100	1505	1964	2476	3041	742	1327	1946	2775	3767	4959	6273
37	384	701	1062	1472	1936	2453	3023	690	1274	1858	2589	3468	4531	5813
38	336	659	1025	1439	1908	2430	3005	637	1221	1806	2433	3193	4122	5254
39	288	616	987	1406	1880	2407	2987	584	1169	1753	2338	2974	3762	4740
40	293	626	1002	1426	1904	2436	3022	584	1169	1753	2338	2922	3566	4384

Figure C.28.a: Table of HRRs of Open Large Enclosure & 3.0 ft. Cable Tray Fires

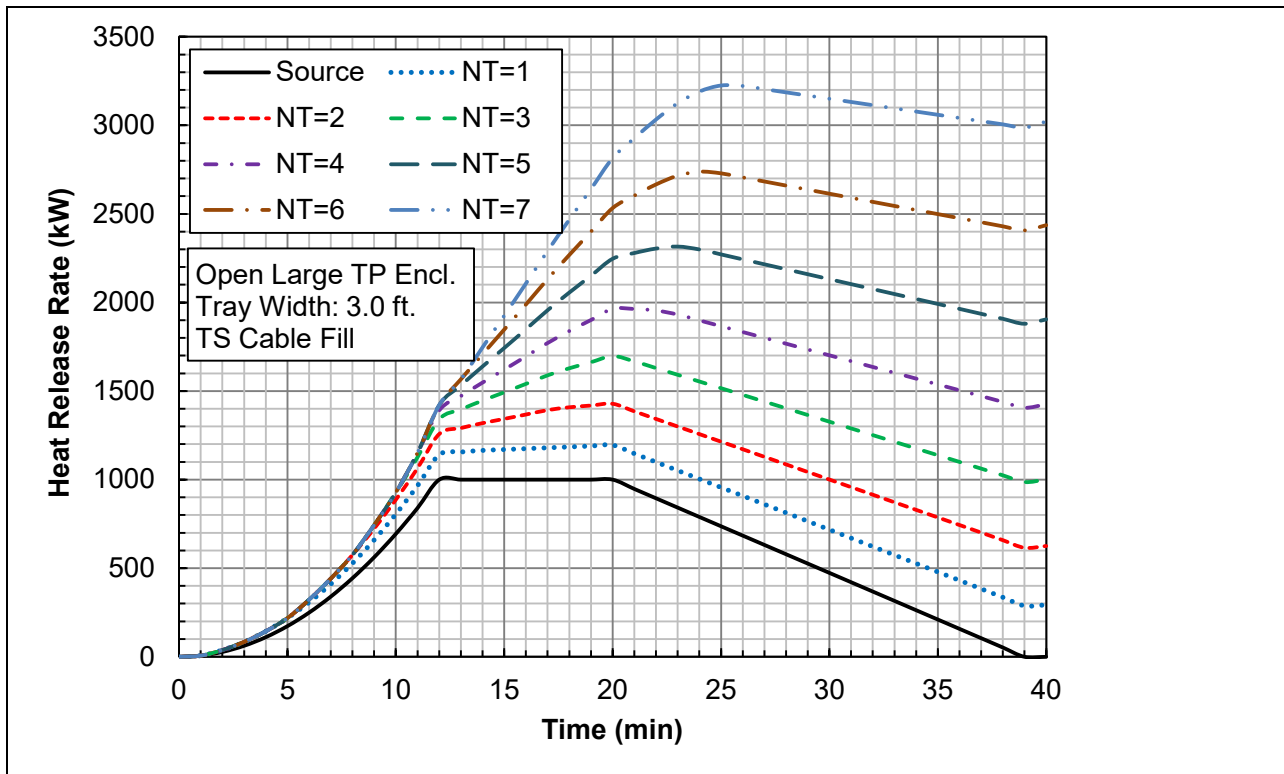


Figure C.28.b: HRR Plots of Open Large Enclosure & 3.0 ft. TS Cable Tray Fires

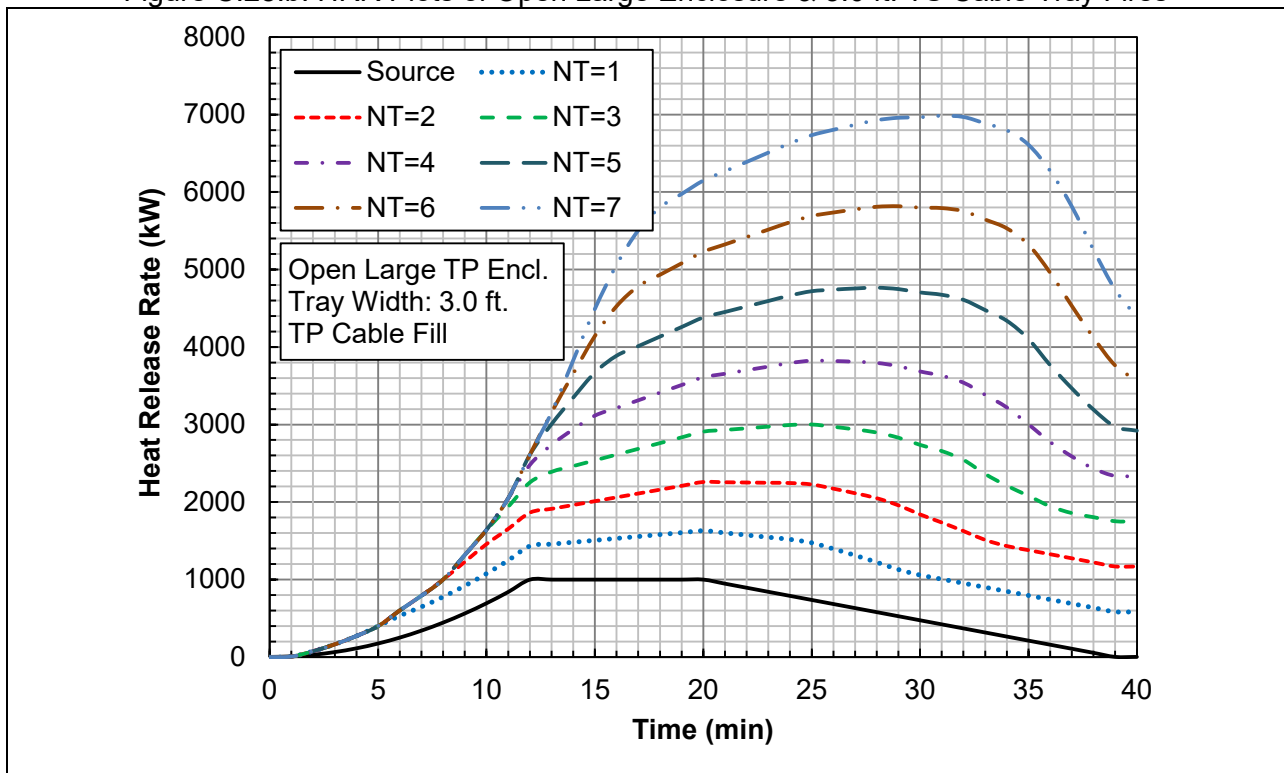


Figure C.28.c: HRR Plots of Open Large Enclosure & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	8	8	8	8	8	8	8	19	19	19	19	19	19	19
3	18	18	18	18	18	18	18	42	42	42	42	42	42	42
4	31	31	31	31	31	31	31	70	70	70	70	70	70	70
5	47	47	47	47	47	47	47	104	104	104	104	104	104	104
6	66	72	72	72	72	72	72	140	164	164	164	164	164	164
7	88	99	99	99	99	99	99	170	220	220	220	220	220	220
8	113	130	130	130	130	130	130	204	283	283	283	283	283	283
9	141	163	171	171	171	171	171	239	350	384	384	384	384	384
10	172	200	216	216	216	216	216	278	417	488	488	488	488	488
11	206	240	264	274	274	274	274	320	471	581	625	625	625	625
12	243	284	315	335	348	348	348	364	527	679	771	825	825	825
13	248	295	335	366	391	405	405	376	552	740	881	993	1058	1058
14	251	306	354	395	433	463	480	389	577	777	970	1142	1274	1349
15	254	315	373	424	475	520	554	401	602	814	1050	1284	1487	1640
16	256	325	391	454	518	578	629	413	626	851	1099	1385	1660	1894
17	259	335	410	484	561	637	706	426	651	888	1149	1446	1780	2097
18	261	342	427	512	603	694	781	438	676	925	1198	1508	1854	2237
19	264	347	441	538	642	749	855	450	700	962	1248	1570	1928	2323
20	266	352	456	565	683	806	929	463	725	999	1297	1631	2002	2410
21	258	346	456	576	709	848	990	465	739	1025	1336	1683	2066	2486
22	250	340	453	586	732	888	1049	466	753	1052	1375	1734	2130	2562
23	242	335	450	589	750	922	1102	468	767	1078	1414	1785	2193	2637
24	234	329	447	588	757	946	1144	470	782	1105	1452	1836	2257	2713
25	226	324	443	587	758	956	1174	468	792	1127	1487	1883	2316	2785
26	218	318	440	587	760	960	1187	455	792	1140	1512	1920	2365	2847
27	210	313	437	586	762	965	1194	440	789	1149	1534	1954	2412	2906
28	202	307	434	586	764	969	1201	422	783	1156	1553	1986	2456	2962
29	194	301	431	585	766	973	1208	402	768	1153	1562	2008	2490	3008
30	186	296	428	584	767	977	1214	387	740	1138	1559	2017	2512	3042
31	177	290	425	584	769	982	1221	376	715	1125	1559	2029	2536	3079
32	169	285	422	583	771	986	1228	366	687	1098	1544	2027	2546	3102
33	161	279	418	582	773	990	1235	355	656	1045	1503	1998	2530	3098
34	153	273	415	582	775	995	1241	345	637	1000	1457	1964	2508	3088
35	145	268	412	581	777	999	1248	334	626	962	1386	1888	2444	3036
36	137	262	409	580	778	1003	1255	324	616	921	1309	1768	2315	2920
37	129	257	406	580	780	1007	1262	313	605	898	1248	1661	2154	2747
38	121	251	403	579	782	1012	1268	303	595	887	1196	1561	1999	2528
39	113	245	400	578	784	1016	1275	292	584	877	1169	1482	1861	2324
40	115	250	407	588	796	1031	1292	292	584	877	1169	1461	1779	2172

Figure C.29.a: Table of HRRs of Closed Medium Enclosure & 1.5 ft. Cable Tray Fires

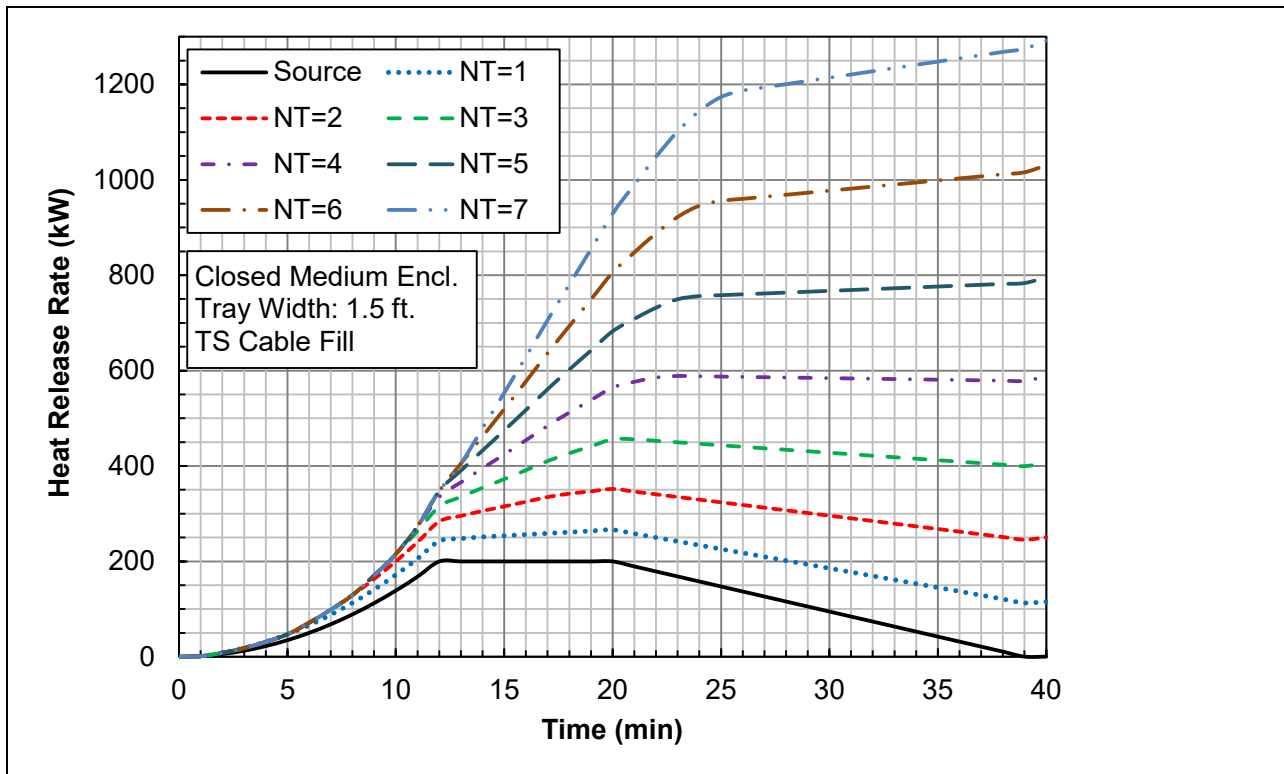


Figure C.29.b: HRR Plots of Closed Medium Enclosure & 1.5 ft. TS Cable Tray Fires

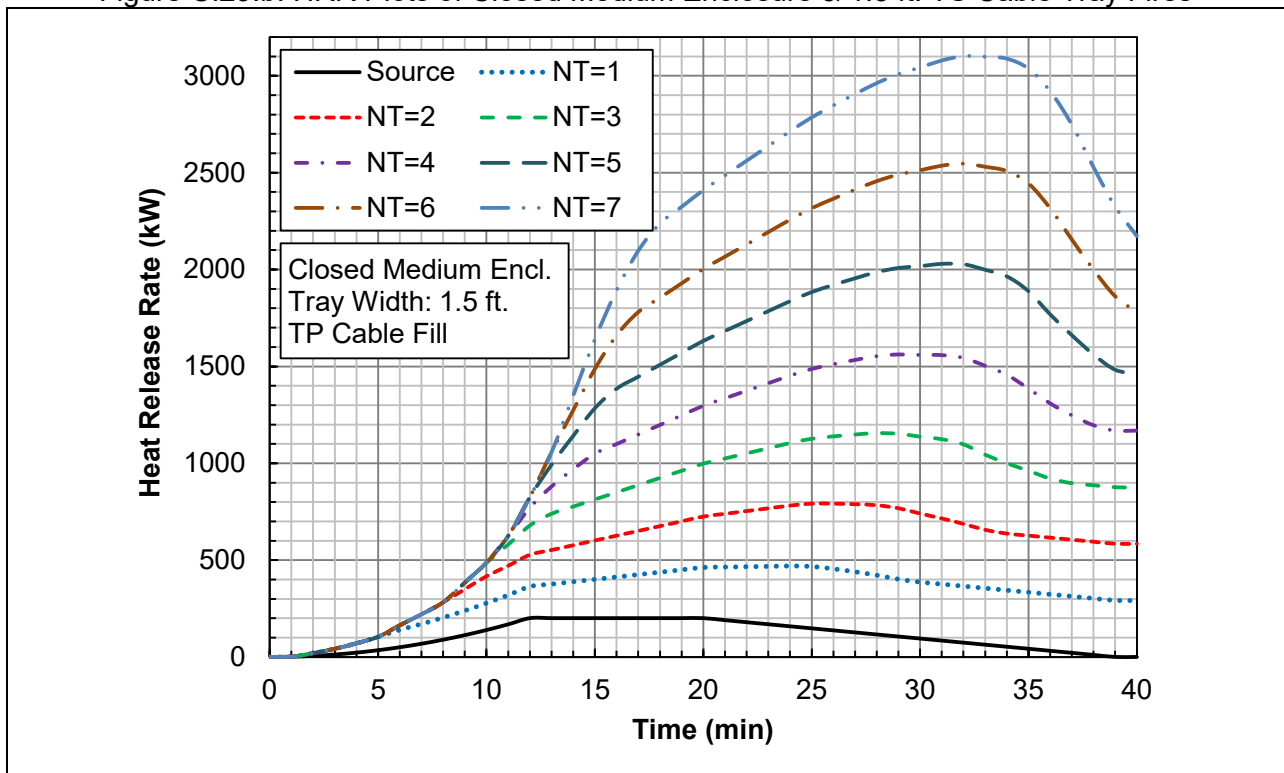


Figure C.29.c: HRR Plots of Closed Medium Enclosure & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	11	11	11	11	11	11	11	32	32	32	32	32	32	32
3	24	24	24	24	24	24	24	71	71	71	71	71	71	71
4	41	41	41	41	41	41	41	119	119	119	119	119	119	119
5	60	60	60	60	60	60	60	174	174	174	174	174	174	174
6	83	93	93	93	93	93	93	230	277	277	277	277	277	277
7	109	130	130	130	130	130	130	273	373	373	373	373	373	373
8	138	170	170	170	170	170	170	318	476	476	476	476	476	476
9	170	214	229	229	229	229	229	366	588	656	656	656	656	656
10	205	262	292	292	292	292	292	418	695	837	837	837	837	837
11	244	313	359	379	379	379	379	471	774	994	1082	1082	1082	1082
12	285	367	430	471	495	495	495	528	855	1159	1341	1451	1451	1451
13	295	391	471	532	581	611	611	553	904	1279	1561	1785	1915	1915
14	303	411	509	591	666	725	759	577	954	1353	1740	2083	2348	2499
15	308	430	545	649	750	839	908	602	1003	1428	1900	2369	2774	3081
16	312	450	583	708	835	955	1059	627	1052	1502	1999	2569	3120	3588
17	317	470	621	769	923	1073	1212	651	1102	1576	2098	2693	3360	3994
18	322	484	654	824	1005	1187	1362	676	1151	1650	2196	2816	3509	4274
19	327	493	683	876	1085	1299	1509	701	1201	1724	2295	2940	3657	4447
20	332	503	712	929	1166	1412	1659	726	1250	1798	2394	3063	3805	4620
21	327	503	722	964	1228	1507	1791	740	1289	1861	2482	3176	3942	4782
22	321	502	727	992	1285	1597	1918	754	1328	1925	2570	3289	4080	4944
23	315	501	731	1009	1331	1676	2035	768	1367	1988	2659	3402	4218	5107
24	310	501	735	1018	1355	1734	2131	782	1405	2052	2747	3515	4355	5269
25	304	500	739	1028	1369	1765	2200	788	1436	2107	2827	3619	4485	5423
26	299	499	744	1037	1384	1784	2238	774	1446	2142	2886	3704	4594	5557
27	293	499	748	1046	1398	1803	2262	754	1451	2172	2941	3783	4697	5685
28	288	498	752	1055	1412	1822	2286	729	1451	2196	2990	3857	4796	5808
29	282	497	757	1065	1426	1841	2310	699	1431	2201	3019	3910	4874	5911
30	276	497	761	1074	1440	1860	2334	679	1386	2181	3024	3940	4929	5990
31	271	496	765	1083	1454	1879	2358	669	1346	2165	3033	3974	4987	6073
32	265	495	769	1092	1468	1898	2382	658	1300	2123	3015	3980	5018	6130
33	260	495	774	1101	1483	1918	2406	648	1250	2027	2944	3934	4997	6132
34	254	494	778	1111	1497	1937	2430	637	1221	1948	2861	3876	4963	6124
35	248	494	782	1120	1511	1956	2454	626	1211	1882	2729	3733	4845	6031
36	243	493	787	1129	1525	1975	2478	616	1200	1811	2587	3505	4599	5809
37	237	492	791	1138	1539	1994	2502	605	1190	1774	2474	3300	4288	5473
38	232	492	795	1148	1553	2013	2526	595	1179	1764	2382	3112	3987	5045
39	226	491	799	1157	1568	2032	2550	584	1169	1753	2338	2965	3723	4648
40	231	501	814	1177	1592	2062	2585	584	1169	1753	2338	2922	3557	4344

Figure C.30.a: Table of HRRs of Closed Medium Enclosure & 3.0 ft. Cable Tray Fires

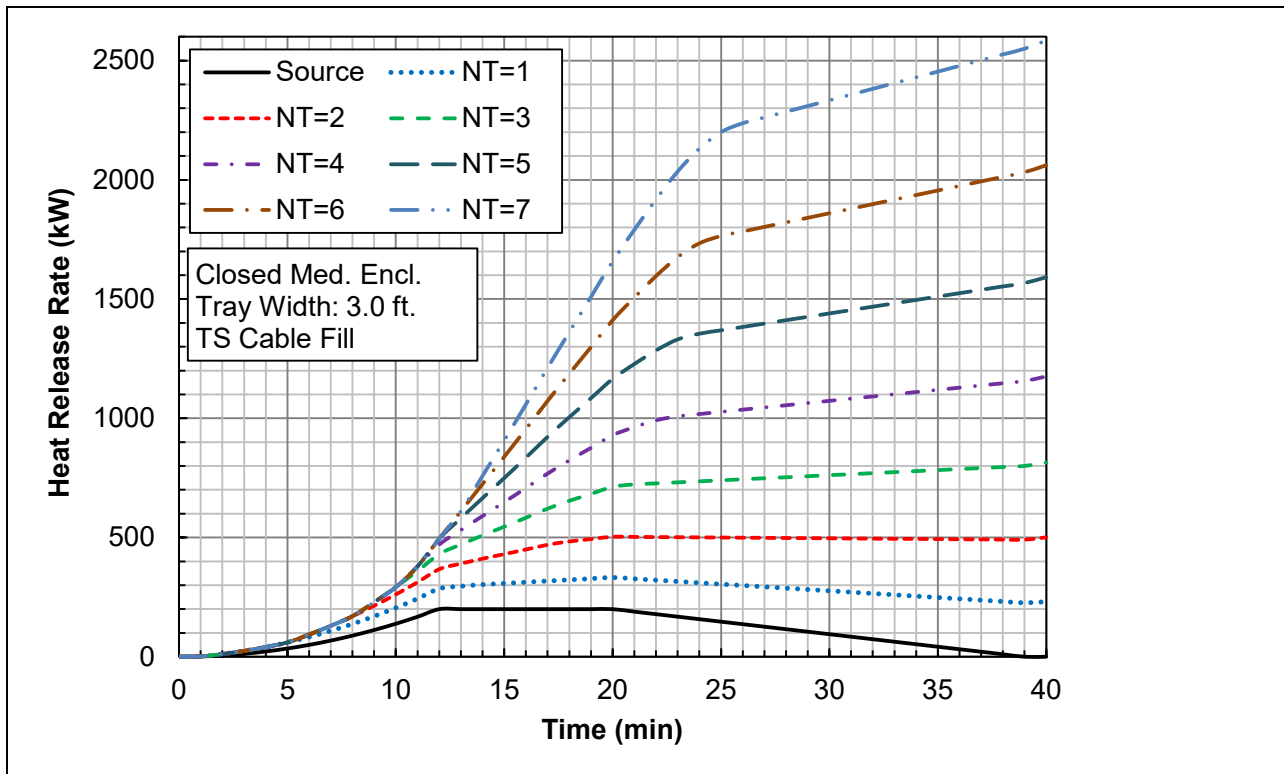


Figure C.30.b: HRR Plots of Closed Medium Enclosure & 3.0 ft. TS Cable Tray Fires

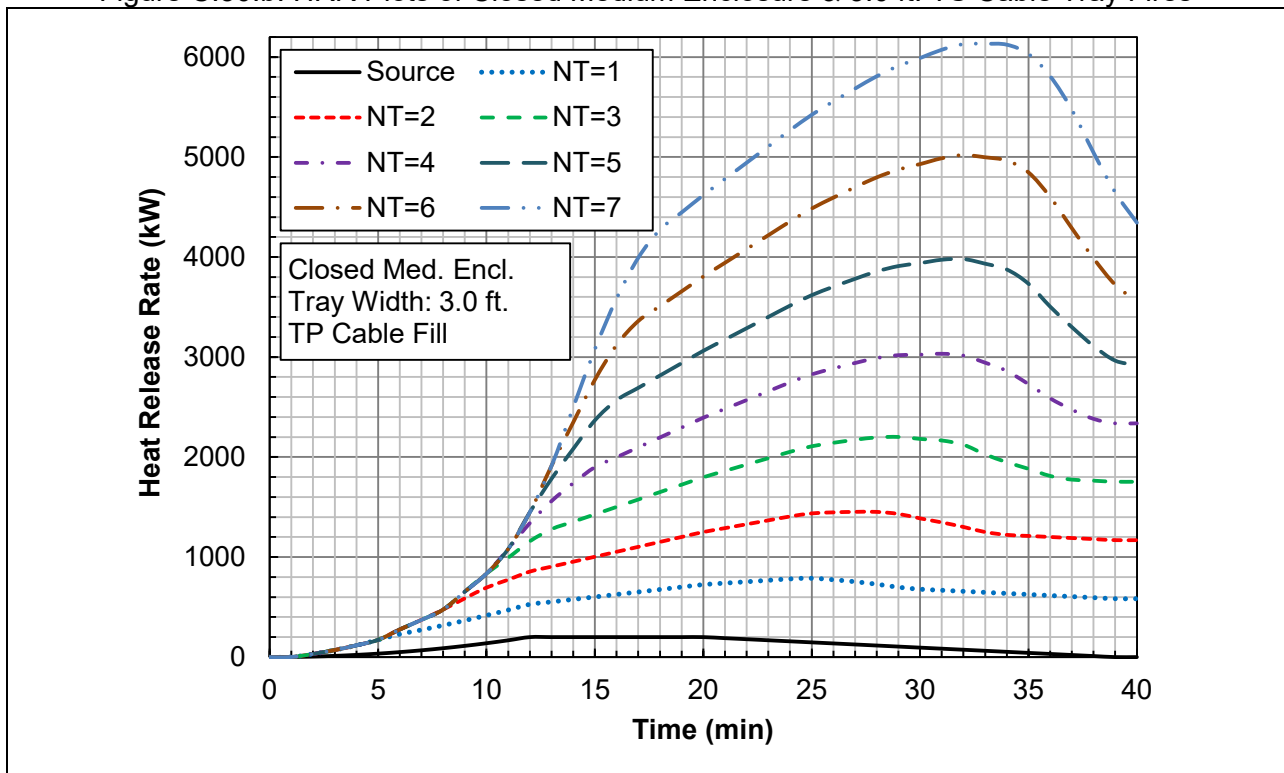


Figure C.30.c: HRR Plots of Closed Medium Enclosure & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	13	13	13	13	13	13	13	25	25	25	25	25	25	25
3	27	27	27	27	27	27	27	55	55	55	55	55	55	55
4	47	47	47	47	47	47	47	92	92	92	92	92	92	92
5	72	72	72	72	72	72	72	136	136	136	136	136	136	136
6	101	106	106	106	106	106	106	184	210	210	210	210	210	210
7	134	146	146	146	146	146	146	225	281	281	281	281	281	281
8	173	191	191	191	191	191	191	271	358	358	358	358	358	358
9	216	241	249	249	249	249	249	322	443	480	480	480	480	480
10	264	295	312	312	312	312	312	377	528	604	604	604	604	604
11	317	355	380	391	391	391	391	437	601	718	765	765	765	765
12	374	419	453	475	488	488	488	501	677	839	936	993	993	993
13	380	432	475	508	534	549	549	514	702	902	1050	1168	1235	1235
14	384	443	496	539	578	609	627	526	727	939	1142	1322	1460	1538
15	386	454	515	570	623	669	705	538	751	976	1224	1469	1680	1838
16	389	464	535	601	668	730	784	551	776	1013	1274	1571	1857	2099
17	391	474	555	633	714	792	864	563	801	1050	1323	1633	1979	2306
18	394	482	573	663	757	852	942	575	825	1087	1373	1695	2053	2448
19	396	487	588	690	799	910	1019	588	850	1124	1422	1756	2127	2535
20	399	491	603	718	841	969	1097	600	875	1161	1471	1818	2201	2621
21	384	479	597	724	862	1007	1153	595	882	1181	1504	1863	2258	2690
22	369	467	587	727	880	1042	1208	591	890	1201	1536	1907	2315	2760
23	355	455	577	724	892	1071	1256	586	897	1221	1568	1952	2372	2829
24	340	443	567	716	892	1089	1294	581	905	1241	1600	1997	2429	2898
25	325	431	558	709	887	1093	1317	571	908	1256	1628	2036	2481	2963
26	311	418	548	702	883	1090	1325	550	898	1259	1643	2064	2521	3015
27	296	406	538	695	878	1088	1325	525	886	1259	1656	2089	2559	3065
28	281	394	529	688	873	1086	1325	498	872	1257	1666	2112	2594	3112
29	267	382	519	680	868	1083	1325	469	846	1244	1665	2123	2617	3148
30	252	370	509	673	864	1081	1325	446	808	1218	1652	2122	2629	3172
31	238	358	500	666	859	1079	1326	429	774	1196	1642	2125	2644	3199
32	223	345	490	659	854	1077	1326	412	737	1159	1618	2113	2644	3212
33	208	333	480	651	849	1074	1326	395	697	1094	1565	2073	2616	3197
34	194	321	470	644	845	1072	1326	378	670	1040	1508	2027	2583	3176
35	179	309	461	637	840	1070	1326	361	653	992	1425	1938	2506	3111
36	164	297	451	630	835	1067	1326	344	636	942	1336	1804	2363	2980
37	150	285	441	622	830	1065	1327	326	619	911	1265	1684	2186	2791
38	135	272	432	615	826	1063	1327	309	601	894	1204	1572	2016	2554
39	120	260	422	608	821	1060	1327	292	584	877	1169	1483	1866	2335
40	123	265	429	618	833	1075	1344	292	584	877	1169	1461	1780	2177

Figure C.31.a: Table of HRRs of Open Medium Enclosure & 1.5 ft. Cable Tray Fires

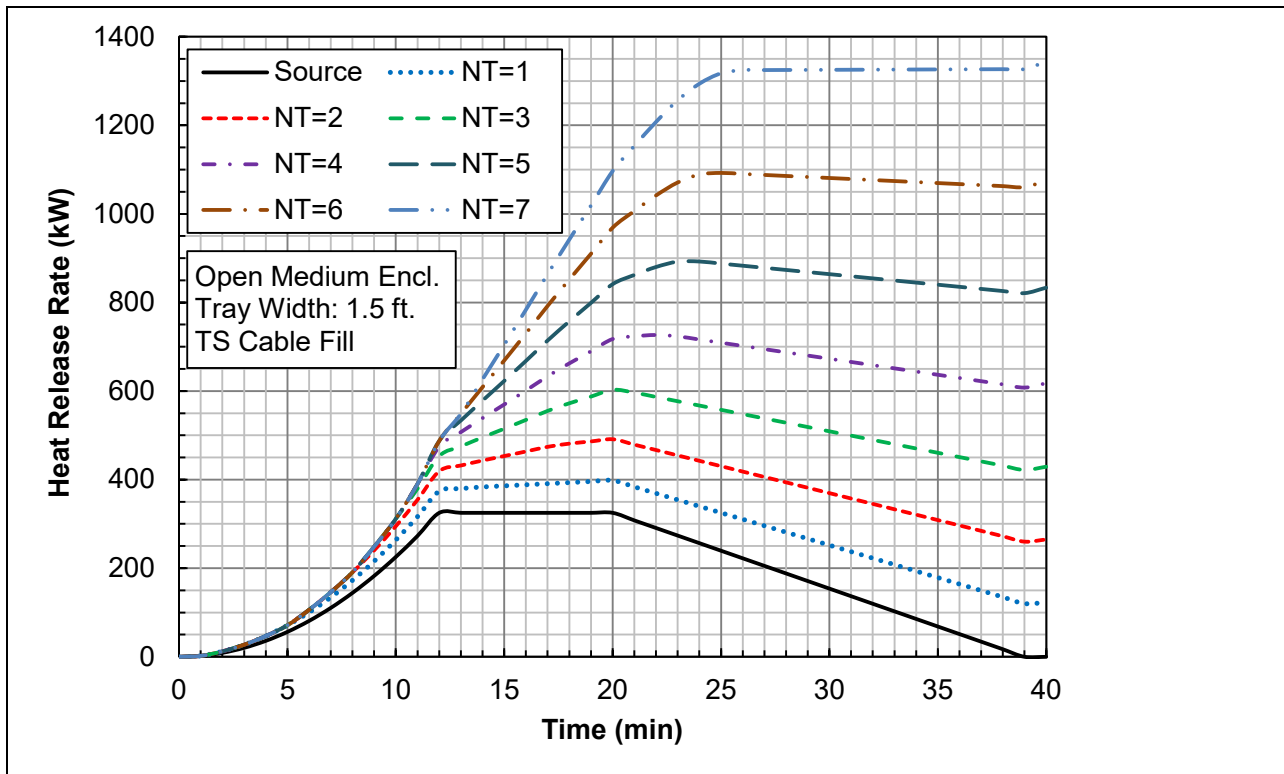


Figure C.31.b: HRR Plots of Open Medium Enclosure & 1.5 ft. TS Cable Tray Fires

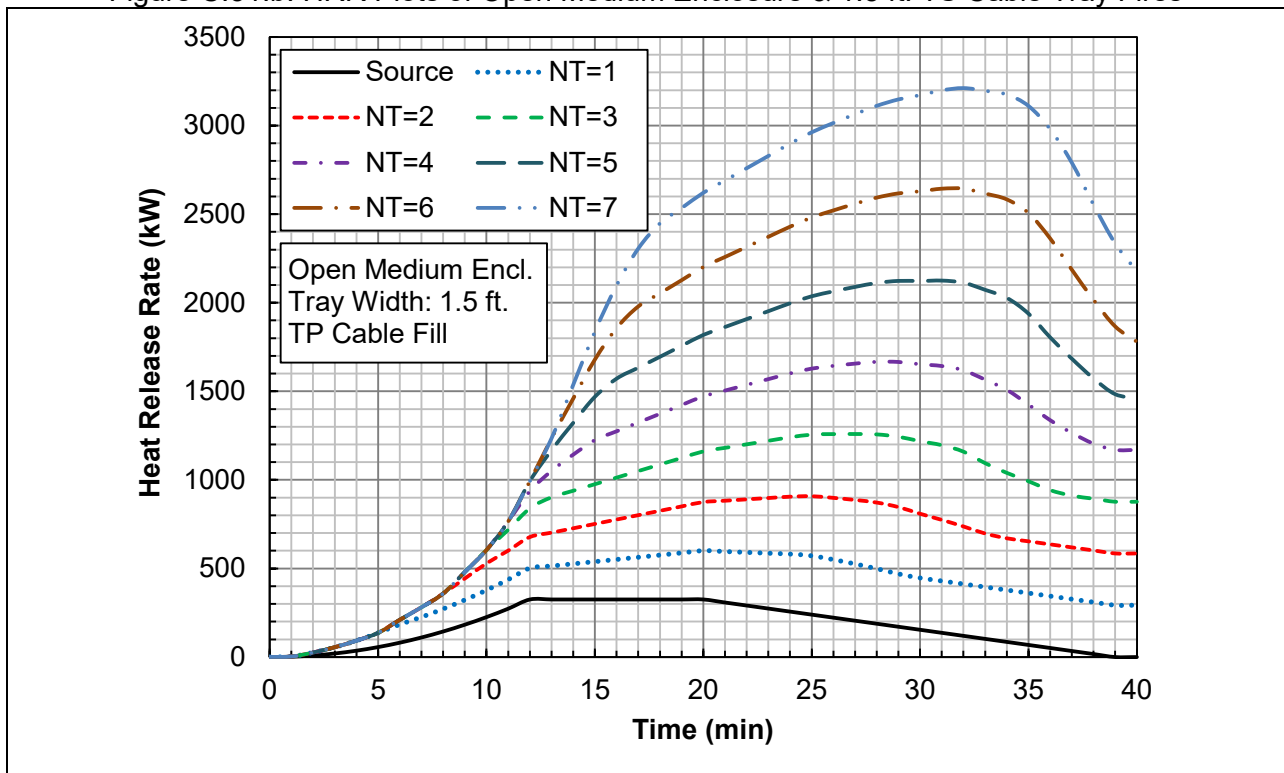


Figure C.31.c: HRR Plots of Open Medium Enclosure & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	16	16	16	16	16	16	16	41	41	41	41	41	41	41
3	35	35	35	35	35	35	35	90	90	90	90	90	90	90
4	58	58	58	58	58	58	58	148	148	148	148	148	148	148
5	87	87	87	87	87	87	87	216	216	216	216	216	216	216
6	120	132	132	132	132	132	132	286	339	339	339	339	339	339
7	158	182	182	182	182	182	182	340	451	451	451	451	451	451
8	202	238	238	238	238	238	238	398	572	572	572	572	572	572
9	250	299	315	315	315	315	315	461	704	777	777	777	777	777
10	303	365	398	398	398	398	398	529	831	983	983	983	983	983
11	361	437	487	508	508	508	508	601	928	1164	1258	1258	1258	1258
12	423	514	582	624	650	650	650	678	1029	1354	1547	1661	1661	1661
13	435	539	625	690	742	773	773	702	1079	1478	1776	2010	2145	2145
14	442	562	666	753	832	894	929	727	1128	1552	1960	2319	2594	2750
15	447	582	705	815	921	1014	1085	752	1177	1627	2124	2613	3034	3351
16	452	603	745	878	1011	1136	1243	776	1227	1701	2223	2818	3389	3872
17	457	624	786	942	1103	1260	1403	801	1276	1775	2321	2941	3634	4288
18	462	638	820	1000	1190	1379	1559	826	1326	1849	2420	3064	3782	4572
19	467	648	850	1055	1273	1495	1713	851	1375	1923	2519	3188	3930	4745
20	472	658	881	1110	1357	1613	1868	875	1424	1997	2618	3311	4078	4917
21	460	651	885	1139	1416	1705	1999	883	1457	2054	2699	3418	4209	5073
22	448	643	883	1163	1469	1793	2125	890	1489	2111	2781	3524	4340	5229
23	436	636	881	1174	1510	1868	2239	898	1521	2168	2863	3630	4471	5385
24	423	629	878	1176	1528	1921	2331	906	1553	2225	2944	3737	4602	5540
25	411	622	876	1179	1535	1946	2395	903	1576	2272	3016	3833	4723	5686
26	399	615	874	1182	1543	1958	2427	877	1574	2295	3064	3906	4820	5808
27	387	607	871	1184	1551	1971	2444	845	1567	2313	3106	3973	4912	5925
28	375	600	869	1187	1558	1983	2462	809	1555	2325	3144	4035	4999	6036
29	363	593	867	1190	1566	1996	2479	767	1521	2316	3159	4075	5064	6125
30	350	586	865	1192	1573	2008	2497	738	1463	2283	3150	4091	5104	6191
31	338	578	862	1195	1581	2021	2514	721	1411	2255	3148	4113	5151	6262
32	326	571	860	1197	1589	2033	2532	704	1354	2199	3116	4106	5169	6305
33	314	564	858	1200	1596	2046	2549	687	1291	2086	3028	4042	5130	6290
34	302	557	855	1203	1604	2058	2567	670	1254	1994	2930	3969	5081	6266
35	290	549	853	1205	1611	2071	2584	653	1237	1916	2781	3808	4944	6154
36	277	542	851	1208	1619	2083	2601	636	1220	1833	2621	3557	4674	5909
37	265	535	848	1211	1627	2096	2619	619	1203	1787	2495	3333	4339	5547
38	253	528	846	1213	1634	2108	2636	601	1186	1770	2391	3128	4015	5091
39	241	521	844	1216	1642	2121	2654	584	1169	1753	2338	2967	3732	4670
40	246	530	859	1236	1666	2151	2688	584	1169	1753	2338	2922	3559	4354

Figure C.32.a: Table of HRRs of Open Medium Enclosure & 3.0 ft. Cable Tray Fires

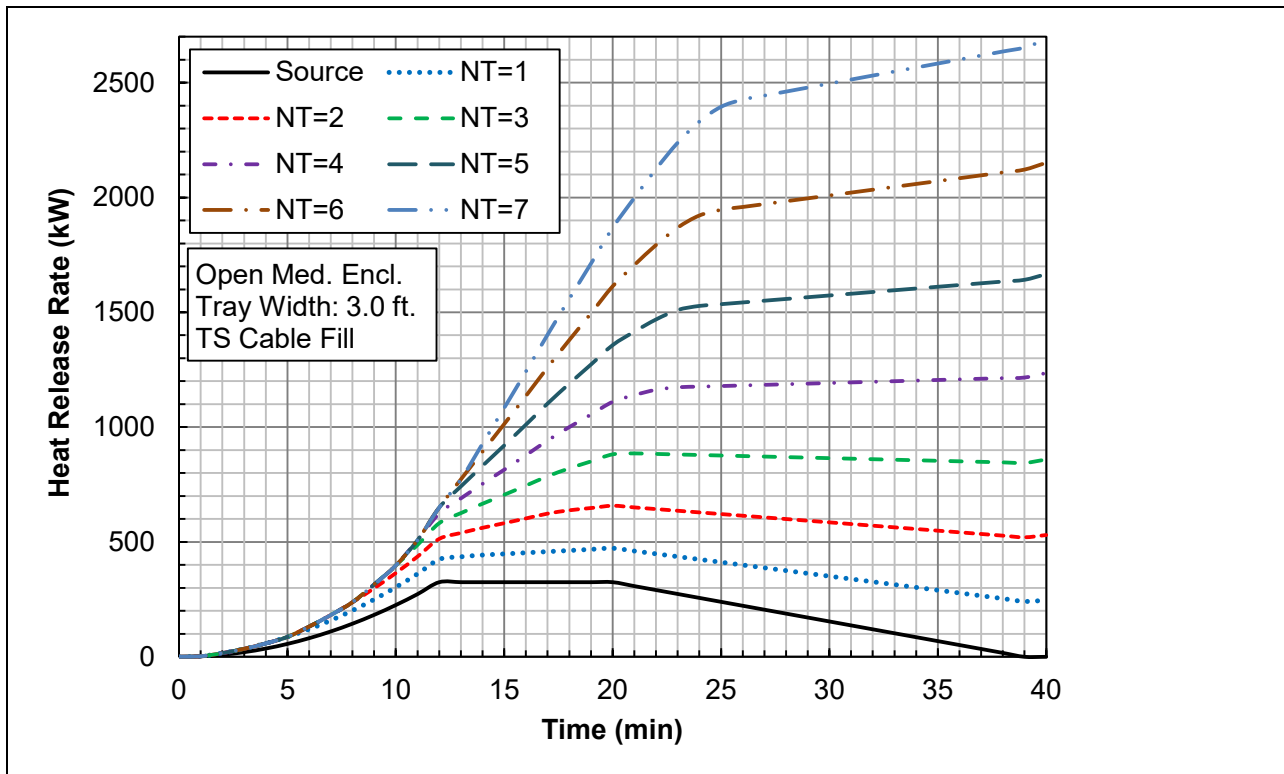


Figure C.32.b: HRR Plots of Open Medium Enclosure & 3.0 ft. TS Cable Tray Fires

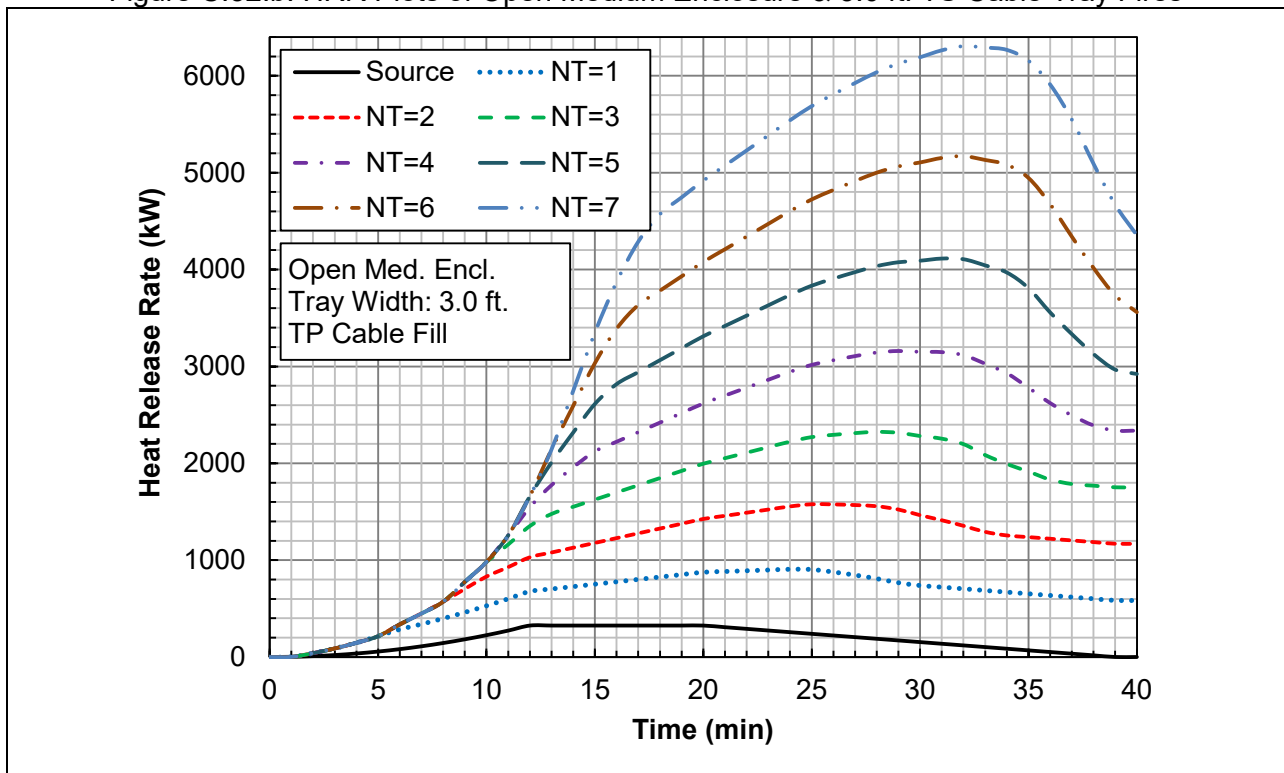


Figure C.32.c: HRR Plots of Open Medium Enclosure & 3.0 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	3	3	3	3	3	3	3	9	9	9	9	9	9	9
3	6	6	6	6	6	6	6	21	21	21	21	21	21	21
4	10	10	10	10	10	10	10	37	37	37	37	37	37	37
5	16	16	16	16	16	16	16	55	55	55	55	55	55	55
6	21	25	25	25	25	25	25	75	94	94	94	94	94	94
7	28	36	36	36	36	36	36	92	131	131	131	131	131	131
8	36	48	48	48	48	48	48	109	171	171	171	171	171	171
9	44	61	67	67	67	67	67	126	215	244	244	244	244	244
10	53	75	88	88	88	88	88	145	258	317	317	317	317	317
11	63	90	110	118	118	118	118	164	289	382	421	421	421	421
12	74	106	133	150	161	161	161	183	321	451	531	580	580	580
13	78	115	149	176	198	212	212	196	345	507	632	733	792	792
14	81	124	165	201	235	262	278	208	370	544	715	871	992	1062
15	83	132	181	226	272	313	345	220	395	581	792	1004	1190	1333
16	86	141	197	252	310	365	413	233	419	618	841	1100	1354	1571
17	88	149	214	279	348	417	482	245	444	655	890	1162	1470	1765
18	91	156	228	304	385	469	550	257	469	692	940	1224	1544	1901
19	93	161	242	327	421	520	617	270	494	729	989	1285	1618	1987
20	96	166	255	351	458	571	686	282	518	766	1039	1347	1692	2074
21	96	168	263	369	489	617	749	292	541	801	1086	1407	1764	2158
22	96	171	268	385	518	661	811	302	563	836	1133	1466	1836	2242
23	96	173	273	396	542	701	868	312	585	870	1180	1525	1907	2326
24	96	176	278	404	557	731	916	322	608	905	1227	1585	1979	2410
25	96	178	283	411	567	749	951	329	628	937	1271	1642	2048	2492
26	96	181	288	419	577	761	973	331	641	963	1309	1692	2111	2567
27	96	184	293	426	587	774	987	329	652	986	1345	1740	2171	2639
28	96	186	298	434	596	786	1002	325	660	1007	1378	1785	2229	2709
29	97	189	303	441	606	798	1017	318	660	1019	1403	1822	2278	2771
30	97	191	308	449	616	811	1032	314	648	1020	1416	1848	2316	2821
31	97	194	313	456	626	823	1047	311	637	1020	1428	1873	2354	2871
32	97	196	318	464	636	836	1062	309	622	1009	1430	1886	2380	2909
33	97	199	323	471	646	848	1077	306	605	975	1408	1877	2383	2925
34	97	202	328	479	656	861	1092	304	596	946	1379	1860	2378	2933
35	97	204	333	486	666	873	1107	302	594	922	1327	1805	2335	2902
36	97	207	338	494	676	886	1122	299	591	894	1270	1710	2233	2812
37	97	209	343	501	686	898	1137	297	589	881	1224	1624	2099	2667
38	97	212	348	509	696	910	1152	295	587	879	1186	1543	1968	2478
39	98	214	353	516	706	923	1166	292	584	877	1169	1480	1851	2301
40	100	219	361	526	719	938	1184	292	584	877	1169	1461	1776	2162

Figure C.33.a: Table of HRRs of Small Enclosure & 1.5 ft. Cable Tray Fires

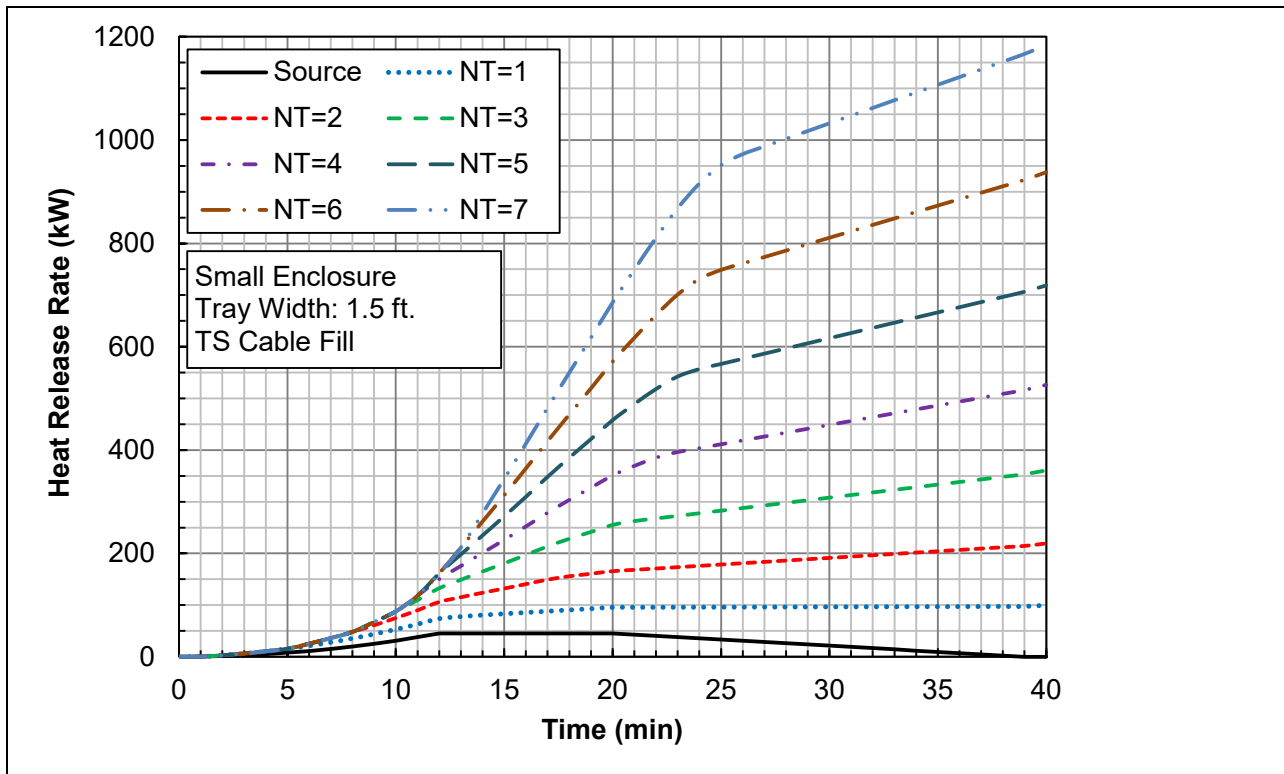


Figure C.33.b: HRR Plots of Small Enclosure & 1.5 ft. TS Cable Tray Fires

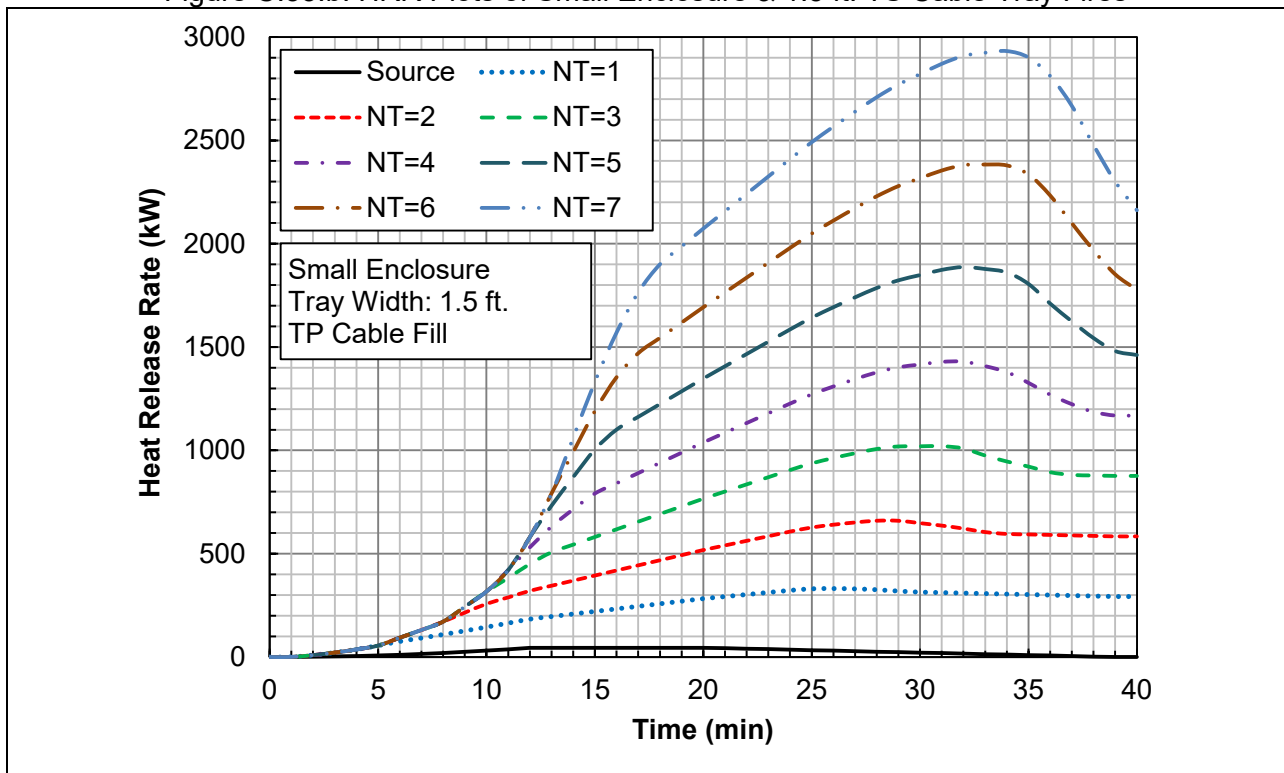
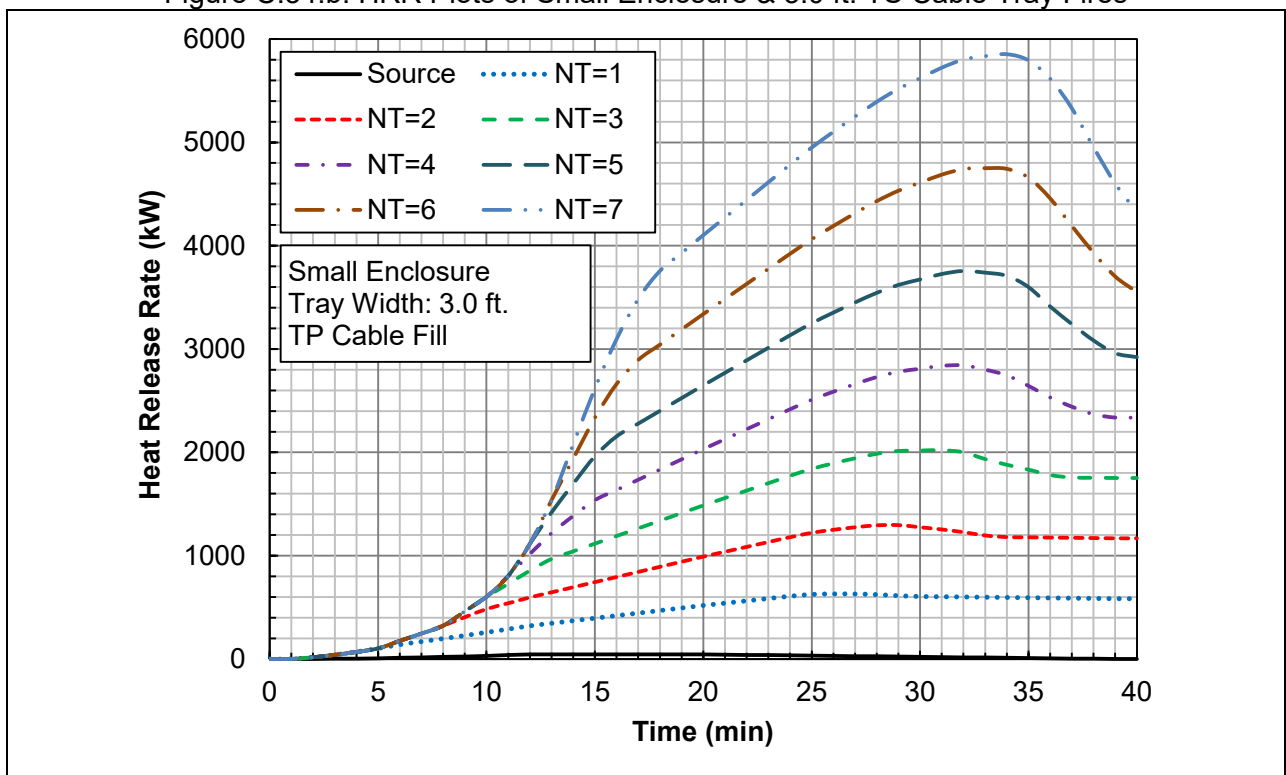
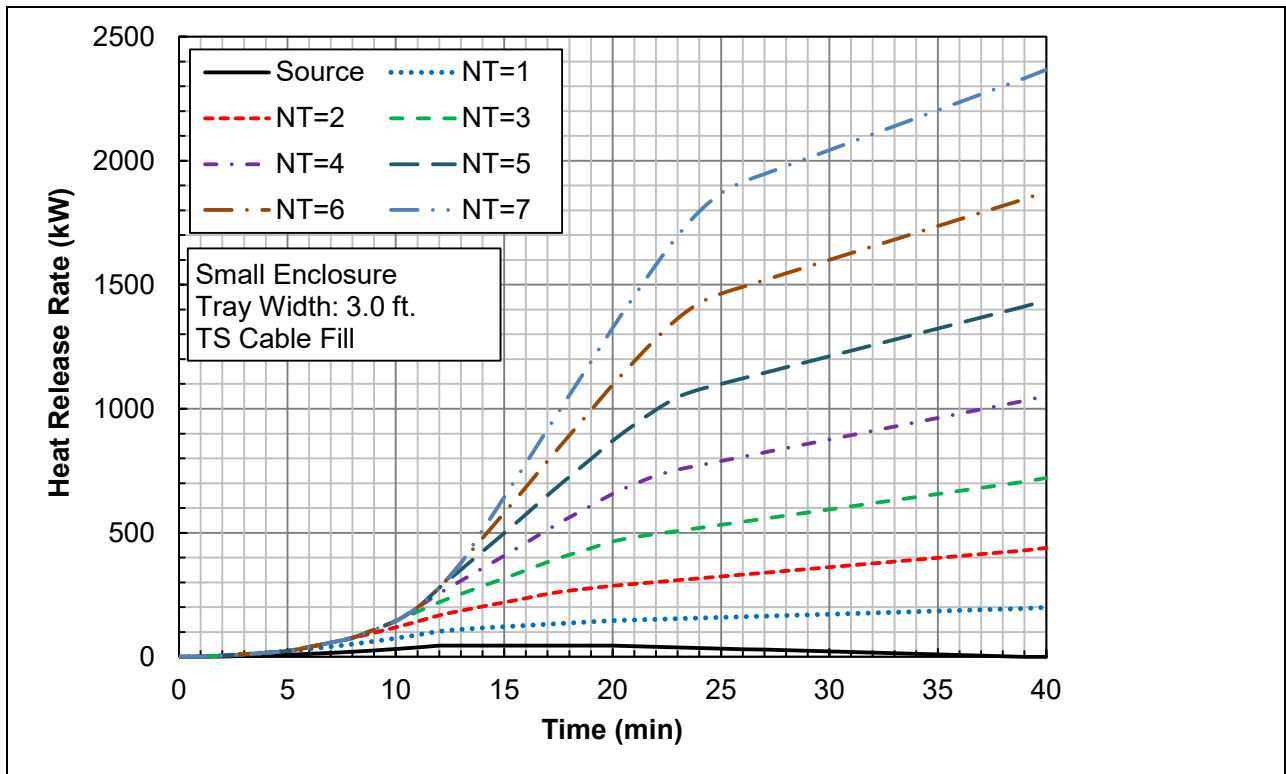


Figure C.33.c: HRR Plots of Small Enclosure & 1.5 ft. TP Cable Tray Fires

Time (min)	HRR of Ignition Source and TS Trays (kW)							HRR of Ignition Source and TP Trays (kW)						
	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7	NT=1	NT=2	NT=3	NT=4	NT=5	NT=6	NT=7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	5	5	5	5	5	5	5	17	17	17	17	17	17	17
3	10	10	10	10	10	10	10	40	40	40	40	40	40	40
4	16	16	16	16	16	16	16	69	69	69	69	69	69	69
5	23	23	23	23	23	23	23	103	103	103	103	103	103	103
6	32	40	40	40	40	40	40	139	176	176	176	176	176	176
7	41	57	57	57	57	57	57	168	247	247	247	247	247	247
8	51	76	76	76	76	76	76	198	323	323	323	323	323	323
9	63	97	110	110	110	110	110	228	405	462	462	462	462	462
10	75	119	145	145	145	145	145	258	484	604	604	604	604	604
11	88	142	182	199	199	199	199	289	540	727	805	805	805	805
12	103	167	220	256	278	278	278	321	596	856	1017	1116	1116	1116
13	110	185	253	306	351	378	378	346	646	969	1218	1420	1539	1539
14	117	203	285	357	425	479	511	371	695	1043	1386	1697	1940	2079
15	122	219	317	408	499	581	644	395	745	1117	1538	1963	2336	2620
16	126	236	349	460	574	684	780	420	794	1191	1637	2156	2663	3097
17	131	254	382	513	651	790	919	445	843	1265	1736	2279	2895	3485
18	136	266	411	562	725	893	1055	469	893	1340	1835	2402	3043	3757
19	141	276	438	609	798	994	1190	494	942	1414	1933	2526	3191	3930
20	146	286	465	657	871	1097	1327	519	991	1488	2032	2649	3339	4102
21	149	294	482	696	935	1192	1456	541	1038	1559	2128	2770	3485	4273
22	151	301	495	730	996	1283	1581	563	1086	1631	2225	2891	3631	4443
23	154	309	507	754	1047	1364	1698	586	1133	1703	2321	3013	3777	4614
24	156	316	520	772	1078	1426	1796	608	1180	1774	2418	3134	3923	4784
25	159	324	532	789	1100	1464	1870	626	1222	1841	2509	3250	4064	4950
26	162	331	545	807	1122	1492	1914	630	1251	1895	2588	3353	4192	5103
27	164	339	557	824	1145	1519	1947	630	1275	1944	2661	3452	4315	5250
28	167	346	569	841	1167	1546	1979	624	1294	1988	2730	3545	4432	5393
29	169	354	582	859	1189	1573	2011	613	1296	2015	2781	3621	4533	5518
30	172	361	594	876	1212	1601	2043	606	1275	2019	2810	3674	4611	5621
31	174	369	607	894	1234	1628	2075	603	1254	2022	2838	3727	4689	5723
32	177	376	619	911	1256	1655	2108	601	1228	2002	2843	3756	4743	5802
33	180	384	632	928	1279	1682	2140	599	1196	1936	2802	3740	4751	5835
34	182	391	644	946	1301	1710	2172	596	1181	1881	2746	3709	4745	5853
35	185	399	657	963	1323	1737	2204	594	1178	1834	2644	3600	4660	5794
36	187	406	669	980	1345	1764	2236	591	1176	1782	2532	3412	4459	5617
37	190	414	681	998	1368	1791	2269	589	1174	1758	2443	3242	4193	5330
38	192	421	694	1015	1390	1819	2301	587	1171	1756	2370	3084	3933	4953
39	195	429	706	1033	1412	1846	2333	584	1169	1753	2338	2960	3703	4602
40	200	439	721	1052	1437	1876	2368	584	1169	1753	2338	2922	3553	4325

Figure C.34.a: Table of HRRs of Small Enclosure & 3.0 ft. Cable Tray Fires



TABLE/PLOT SET D
VERTICAL ZOI AND CORRESPONDING DAMAGE TIME VERSUS SEVERITY FACTOR

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Table/Plot Set D: Overview and Assumptions

To develop table/plot set D, calculations were performed to determine the highest elevation at which a target will be damaged or a secondary combustible will ignite when **exposed in the plume of an ignition source fire whose HRR profile** corresponds to a specified SF. **This elevation is referred to as the vertical ZOI for the specified SF and corresponding HRR profile.** Each table and plot provides the vertical ZOIs corresponding to SFs ranging from 0.02 to **0.75** for one of the fixed or transient ignition sources listed in Attachment 5, located either in the open (**free-burn fire**) or in a corner. Table/plot set D is used to conservatively estimate the SF for a target or secondary combustible located within the **98th percentile HRR** vertical ZOI based on its elevation above the ignition source (Step 2.6.1).

The tables also provide the time at which the target will be damaged or will ignite. This time is used in the calculation of the NSP (Step 2.7.1).

The assumptions and background for the calculations performed to develop the tables and plots in set D are discussed in Section 06.03.04 of IMC 0308, Attachment 3, Appendix F. Because these calculations were based on FDT 9 **and the heat soak method**, the same assumptions were made as in the development of the tables and plots for the vertical ZOI of fixed and transient ignition sources in set A.

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	15.0	2.39	696	2.01	875	4.01	696	3.33	874
0.05	11.8	2.17	696	1.82	875	3.64	696	3.03	874
0.10	9.36	1.98	696	1.66	875	3.32	696	2.76	874
0.15	7.89	1.85	696	1.55	875	3.10	696	2.58	874
0.20	6.84	1.75	696	1.46	875	2.93	696	2.43	874
0.25	6.01	1.66	696	1.39	875	2.78	696	2.31	874
0.30	5.33	1.58	696	1.32	875	2.65	696	2.20	874
0.35	4.74	1.51	696	1.26	875	2.53	696	2.10	874
0.40	4.22	1.44	696	1.21	875	2.41	696	2.01	874
0.45	3.76	1.37	696	1.15	875	2.30	696	1.92	874
0.50	3.34	1.31	696	1.10	875	2.20	696	1.83	874
0.55	2.96	1.25	696	1.05	875	2.09	696	1.74	874
0.60	2.60	1.18	696	0.99	875	1.99	696	1.65	874
0.65	2.26	1.12	696	0.94	875	1.88	696	1.56	874
0.70	1.94	1.05	696	0.88	875	1.77	696	1.47	874
0.75	1.63	0.98	696	0.82	875	1.65	696	1.37	874

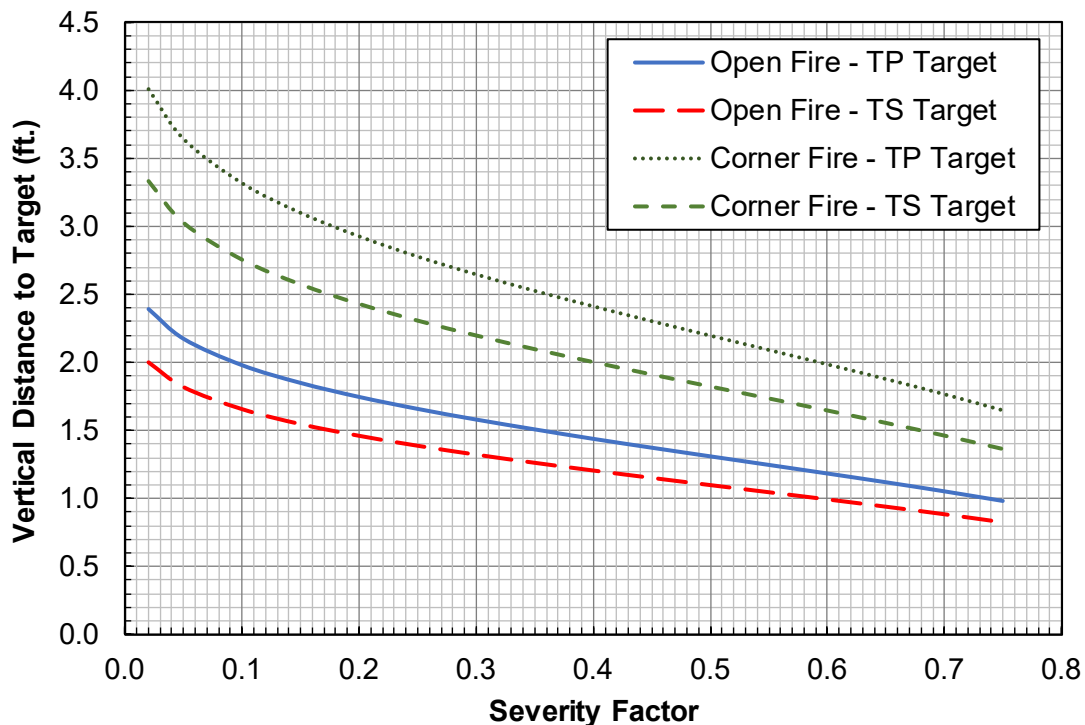


Figure D.01: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Class A Motors

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	37.1	3.38	696	2.82	874	5.64	695	4.67	874
0.05	28.8	3.05	696	2.55	874	5.10	695	4.22	874
0.10	22.5	2.77	696	2.31	874	4.62	695	3.83	874
0.15	18.8	2.57	696	2.15	874	4.30	695	3.56	874
0.20	16.1	2.42	696	2.02	874	4.04	695	3.35	874
0.25	14.1	2.29	696	1.91	874	3.83	695	3.17	874
0.30	12.3	2.18	696	1.82	874	3.63	695	3.01	874
0.35	10.9	2.07	696	1.73	874	3.46	695	2.86	874
0.40	9.62	1.97	696	1.64	874	3.29	695	2.72	874
0.45	8.48	1.87	696	1.56	874	3.13	695	2.59	874
0.50	7.46	1.78	696	1.48	874	2.97	695	2.46	874
0.55	6.53	1.69	696	1.41	874	2.82	695	2.33	874
0.60	5.66	1.59	696	1.33	874	2.66	695	2.20	874
0.65	4.86	1.50	696	1.25	874	2.50	695	2.07	874
0.70	4.11	1.40	696	1.17	874	2.34	695	1.94	874
0.75	3.39	1.30	696	1.08	874	2.17	695	1.79	874

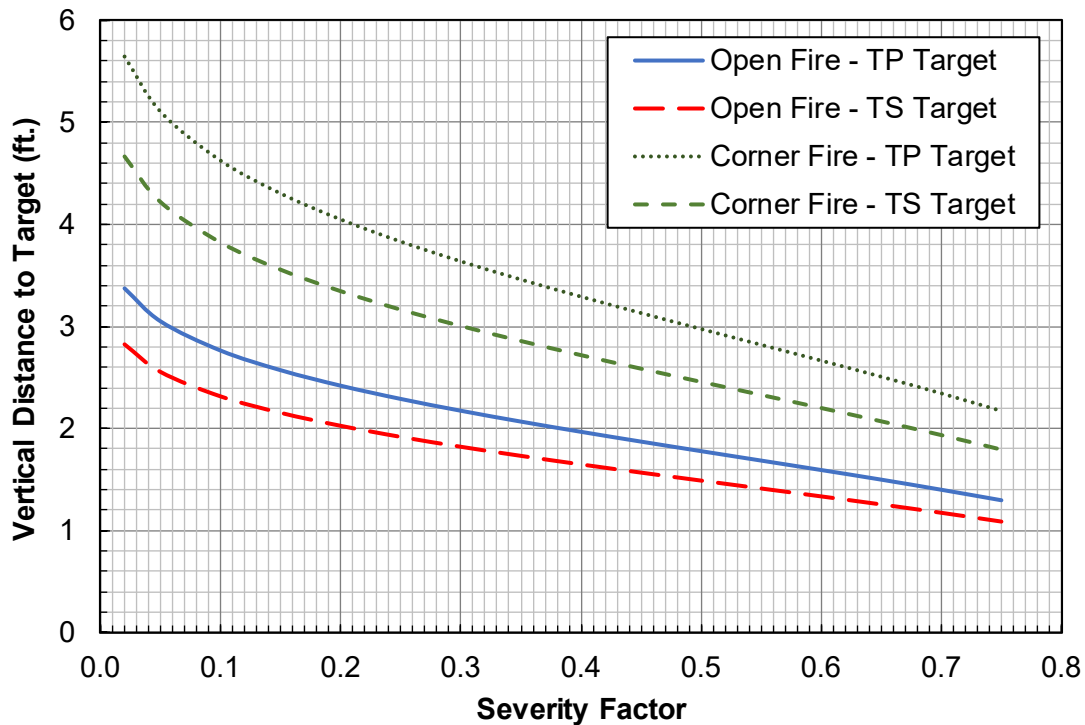


Figure D.02: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Class B Motors

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	100	4.91	696	4.08	874	8.16	695	6.72	873
0.05	77.1	4.43	696	3.68	874	7.36	695	6.06	873
0.10	59.8	4.00	696	3.33	874	6.65	695	5.48	873
0.15	49.7	3.72	696	3.09	874	6.18	695	5.09	873
0.20	42.5	3.49	696	2.90	874	5.80	695	4.78	873
0.25	36.8	3.30	696	2.74	874	5.48	695	4.51	873
0.30	32.2	3.12	696	2.60	874	5.19	695	4.28	873
0.35	28.3	2.97	696	2.46	874	4.93	695	4.06	873
0.40	24.9	2.82	696	2.34	874	4.68	695	3.86	873
0.45	21.8	2.67	696	2.22	874	4.45	695	3.66	873
0.50	19.1	2.53	696	2.11	874	4.22	695	3.47	873
0.55	16.6	2.40	696	1.99	874	3.99	695	3.28	873
0.60	14.4	2.26	696	1.88	874	3.76	695	3.09	873
0.65	12.2	2.12	696	1.76	874	3.53	695	2.90	873
0.70	10.3	1.98	696	1.64	874	3.29	695	2.70	873
0.75	8.40	1.82	696	1.51	874	3.03	695	2.50	873

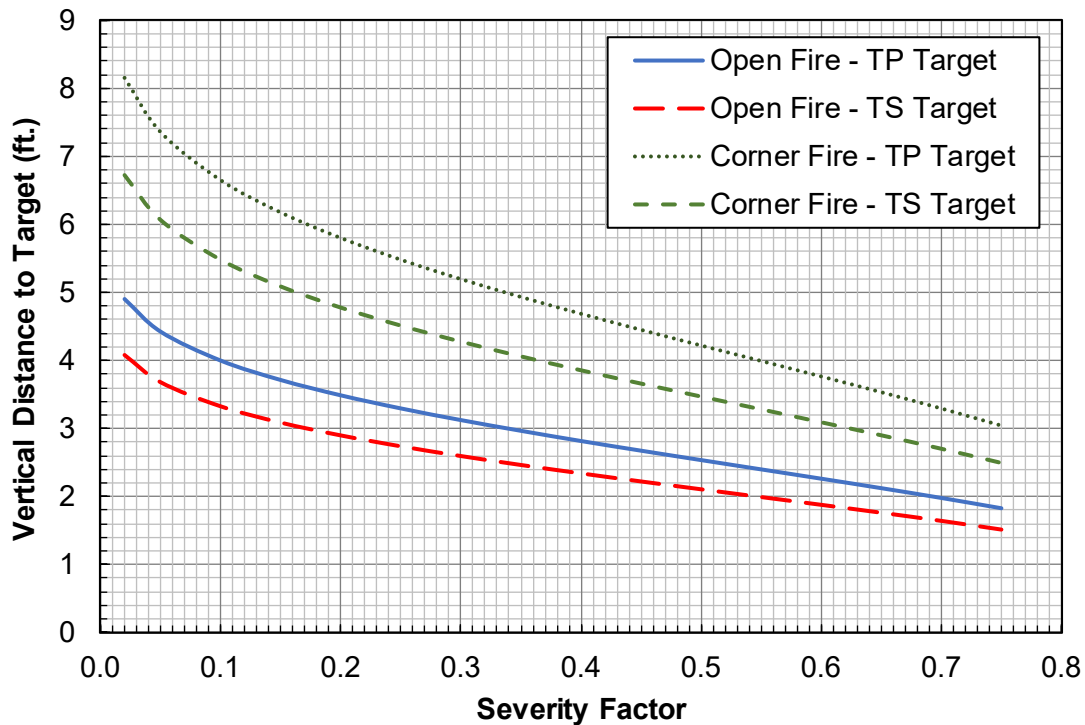


Figure D.03: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Class C Motors

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	30.1	3.32	600	2.77	600	5.62	600	4.65	600
0.05	20.6	2.85	600	2.38	600	4.83	600	3.99	600
0.10	13.9	2.44	600	2.03	600	4.12	600	3.41	600
0.15	10.2	2.16	600	1.80	600	3.65	600	3.02	600
0.20	7.82	1.94	600	1.61	600	3.27	600	2.71	600
0.25	6.07	1.75	600	1.46	600	2.96	600	2.45	600
0.30	4.74	1.58	600	1.32	600	2.68	600	2.22	600
0.35	3.70	1.43	600	1.19	600	2.42	600	2.01	600
0.40	2.87	1.29	600	1.08	600	2.19	600	1.81	600
0.45	2.20	1.16	600	0.97	600	1.97	600	1.63	600
0.50	1.66	1.04	600	0.87	600	1.76	600	1.46	600
0.55	1.23	0.92	600	0.77	600	1.56	600	1.29	600
0.60	0.89	0.81	600	0.67	600	1.37	600	1.13	600
0.65	0.61	0.70	600	0.58	600	1.18	600	0.98	600
0.70	0.40	0.59	600	0.49	600	1.00	600	0.83	600
0.75	0.25	0.49	600	0.41	600	0.82	600	0.68	600

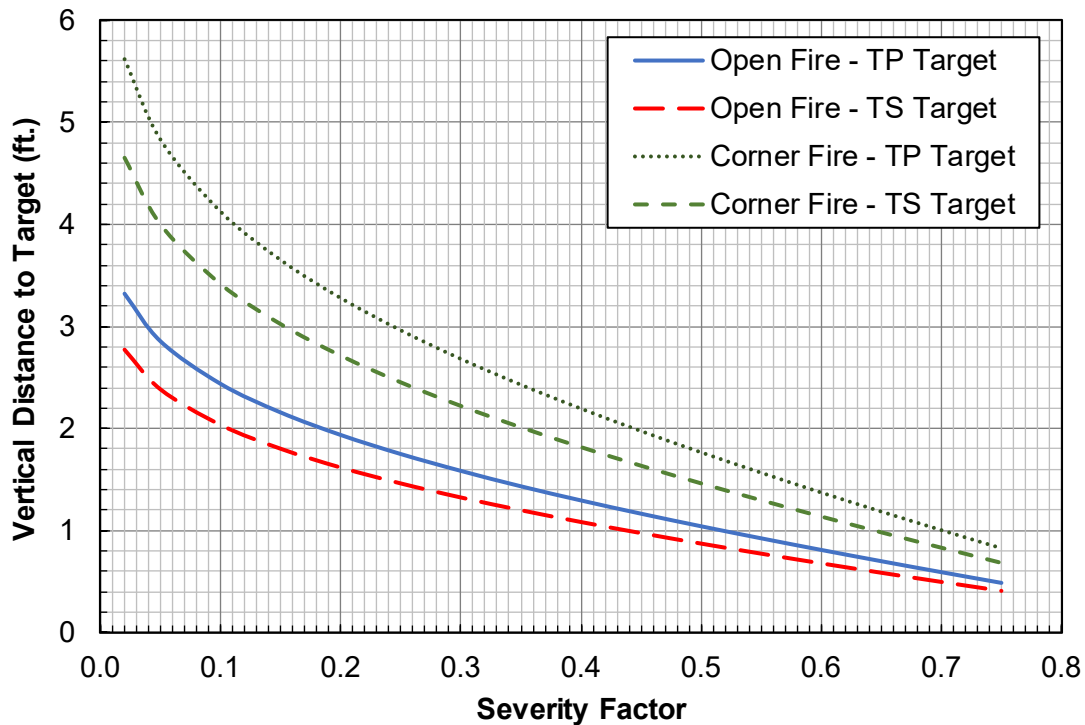


Figure D.04: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Class A Dry Transformers

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	69.8	4.49	600	3.71	600	7.55	600	6.19	600
0.05	48.3	3.88	600	3.20	600	6.51	600	5.34	600
0.10	32.9	3.33	600	2.75	600	5.59	600	4.59	600
0.15	24.6	2.96	600	2.45	600	4.97	600	4.08	600
0.20	19.0	2.67	600	2.21	600	4.48	600	3.68	600
0.25	14.9	2.42	600	2.00	600	4.07	600	3.34	600
0.30	11.8	2.20	600	1.82	600	3.70	600	3.04	600
0.35	9.28	2.00	600	1.66	600	3.37	600	2.76	600
0.40	7.30	1.82	600	1.51	600	3.06	600	2.51	600
0.45	5.69	1.65	600	1.36	600	2.77	600	2.27	600
0.50	4.37	1.48	600	1.23	600	2.49	600	2.04	600
0.55	3.29	1.32	600	1.10	600	2.22	600	1.83	600
0.60	2.42	1.17	600	0.97	600	1.97	600	1.61	600
0.65	1.72	1.02	600	0.84	600	1.71	600	1.41	600
0.70	1.16	0.87	600	0.72	600	1.47	600	1.20	600
0.75	0.74	0.73	600	0.60	600	1.22	600	1.00	600

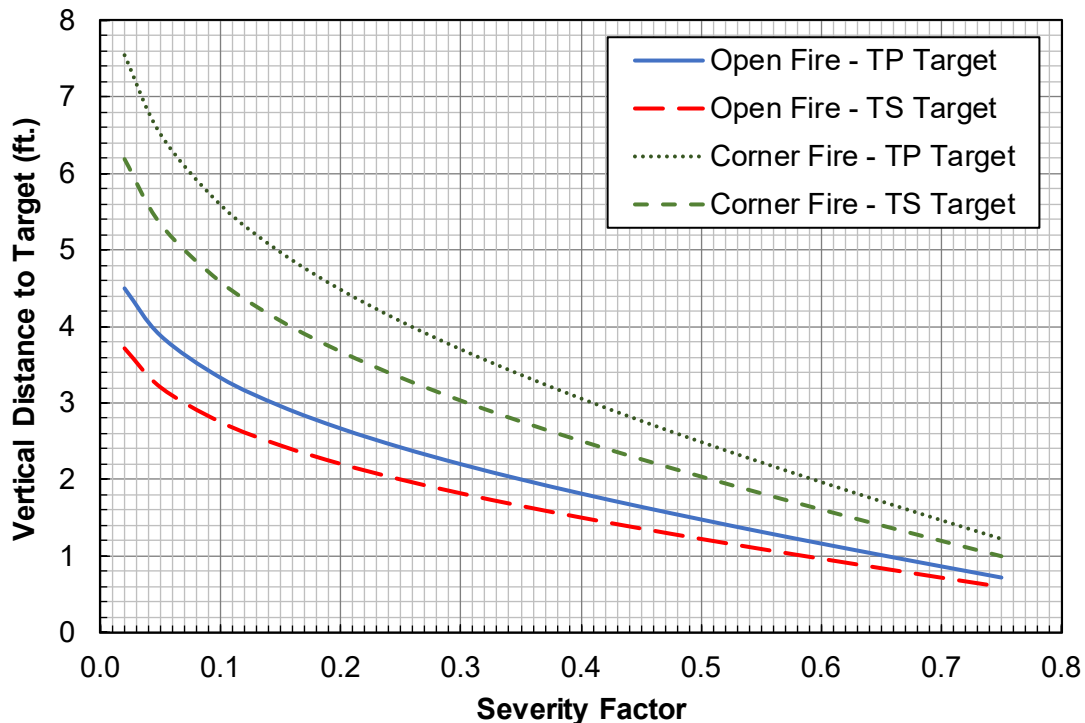


Figure D.05: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Class B Dry Transformers

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	130	5.43	600	4.43	600	9.02	600	7.28	600
0.05	91.5	4.72	600	3.85	600	7.83	600	6.32	600
0.10	63.6	4.08	600	3.33	600	6.77	600	5.47	600
0.15	48.2	3.65	600	2.98	600	6.06	600	4.89	600
0.20	37.8	3.31	600	2.70	600	5.50	600	4.44	600
0.25	30.1	3.02	600	2.47	600	5.02	600	4.06	600
0.30	24.2	2.77	600	2.26	600	4.60	600	3.71	600
0.35	19.4	2.54	600	2.07	600	4.22	600	3.40	600
0.40	15.6	2.32	600	1.90	600	3.86	600	3.11	600
0.45	12.4	2.12	600	1.73	600	3.52	600	2.84	600
0.50	9.73	1.92	600	1.57	600	3.20	600	2.58	600
0.55	7.52	1.73	600	1.42	600	2.88	600	2.33	600
0.60	5.68	1.55	600	1.27	600	2.58	600	2.08	600
0.65	4.17	1.37	600	1.12	600	2.27	600	1.84	600
0.70	2.93	1.19	600	0.97	600	1.98	600	1.60	600
0.75	1.95	1.01	600	0.82	600	1.68	600	1.35	600

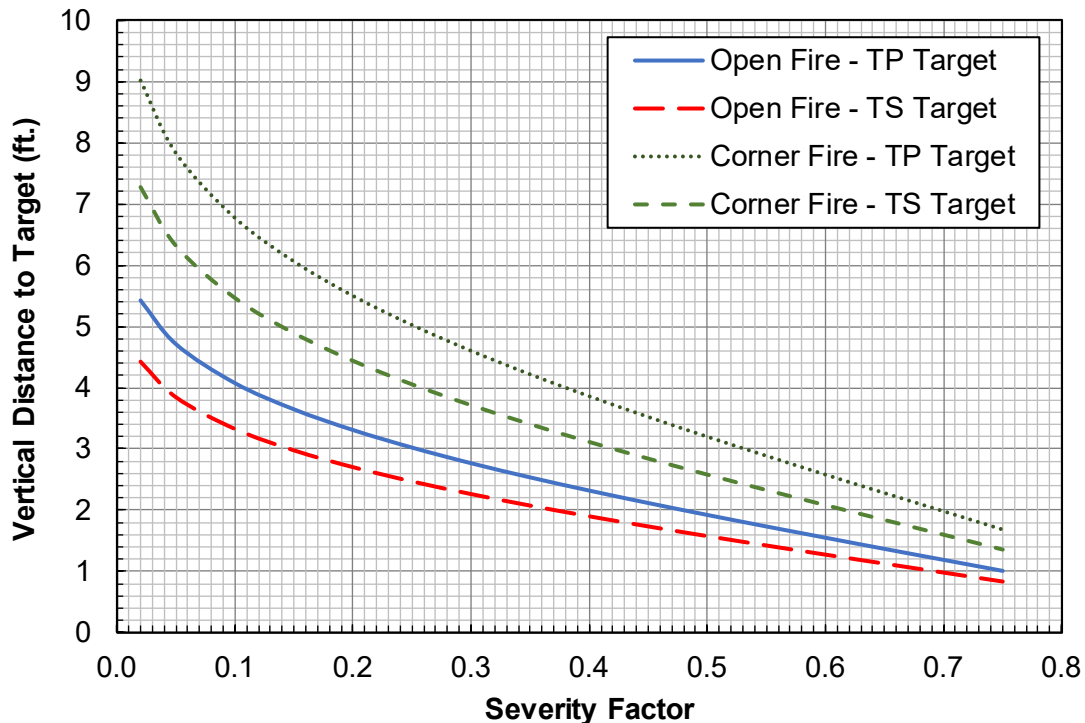


Figure D.06: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Class C Dry Transformers

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	278	5.81	668	4.87	377	9.62	689	7.85	370
0.05	180	4.83	420	4.07	449	7.91	674	6.60	437
0.10	114	3.98	589	3.29	444	6.56	610	5.36	450
0.15	79.1	3.36	571	2.79	411	5.54	588	4.53	442
0.20	57.0	2.89	544	2.40	386	4.75	566	3.90	410
0.25	41.6	2.52	506	2.09	373	4.14	523	3.40	387
0.30	30.5	2.19	456	1.83	322	3.61	478	2.97	352
0.35	22.2	1.90	415	1.59	314	3.14	431	2.59	327
0.40	16.0	1.64	369	1.37	280	2.71	384	2.24	280
0.45	11.3	1.41	340	1.18	245	2.31	355	1.92	260
0.50	7.81	1.19	297	0.99	210	1.96	306	1.62	231
0.55	5.22	0.99	260	0.83	186	1.62	270	1.35	199
0.60	3.34	0.80	212	0.67	171	1.32	230	1.10	171
0.65	2.03	0.63	190	0.53	150	1.04	191	0.87	156
0.70	1.14	0.47	136	0.40	115	0.78	146	0.65	130
0.75	0.58	0.33	102	0.28	99	0.55	119	0.46	109

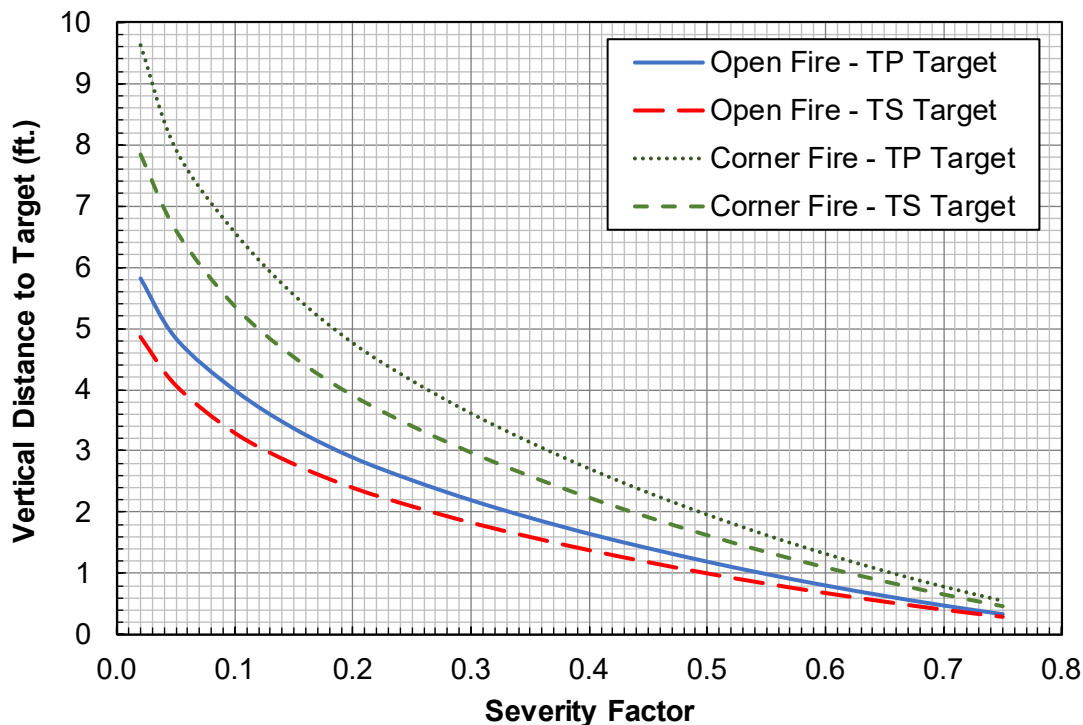


Figure D.07: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Generic Transients

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	143	4.40	463	2.64	259	7.19	683	4.58	272
0.05	95.3	3.71	616	2.08	232	6.10	618	3.63	244
0.10	62.0	3.05	593	1.65	208	5.02	611	2.89	218
0.15	44.3	2.62	559	1.39	190	4.32	598	2.45	200
0.20	32.8	2.30	534	1.21	175	3.79	560	2.13	184
0.25	24.6	2.03	477	1.06	162	3.35	519	1.88	170
0.30	18.6	1.80	464	0.94	151	2.96	466	1.67	158
0.35	14.0	1.59	417	0.84	140	2.62	447	1.49	147
0.40	10.4	1.39	362	0.75	131	2.30	409	1.34	137
0.45	7.68	1.21	333	0.67	122	2.00	367	1.20	127
0.50	5.54	1.05	318	0.59	113	1.73	326	1.07	119
0.55	3.89	0.89	277	0.53	106	1.47	292	0.95	111
0.60	2.64	0.75	249	0.46	99	1.23	259	0.84	103
0.65	1.70	0.61	195	0.40	92	1.00	228	0.73	96
0.70	1.04	0.48	175	0.35	86	0.79	172	0.63	89
0.75	0.58	0.36	151	0.29	80	0.59	151	0.54	NA

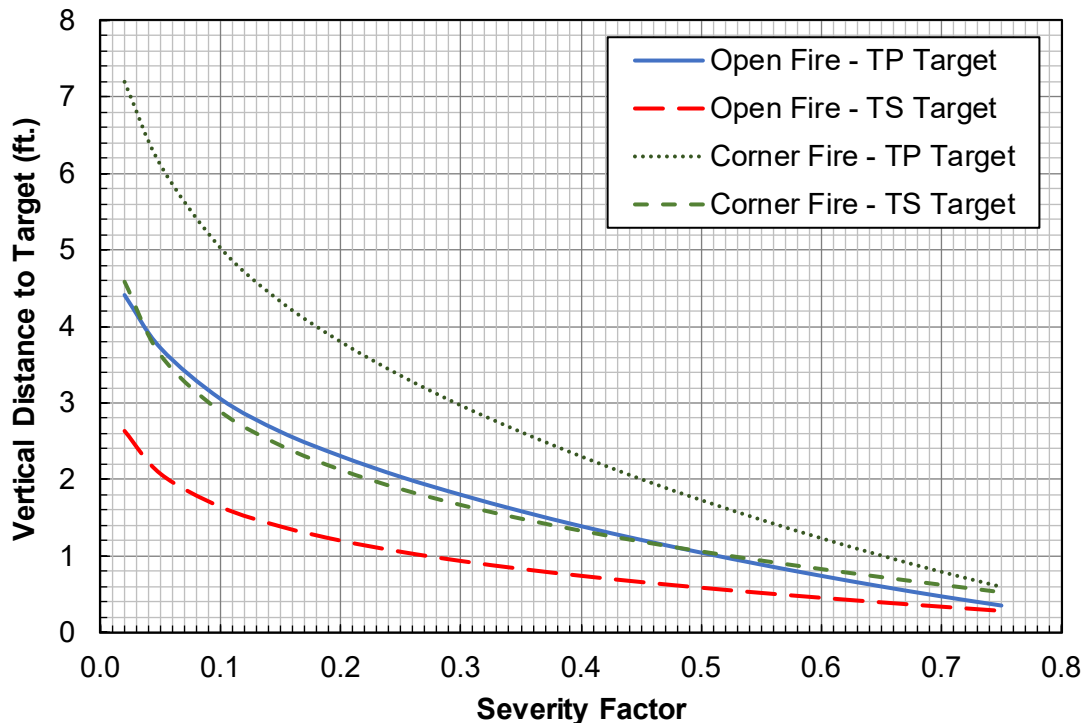


Figure D.08: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for TCCL Transients

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	170	6.48	1523	5.24	1193	10.9	1527	8.72	1189
0.05	130	5.82	1521	4.71	1193	9.82	1527	7.83	1189
0.10	99.9	5.24	1521	4.24	1193	8.83	1527	7.05	1189
0.15	82.3	4.85	1521	3.92	1193	8.17	1527	6.52	1189
0.20	69.8	4.54	1521	3.67	1193	7.65	1527	6.10	1189
0.25	60.0	4.27	1521	3.46	1193	7.20	1527	5.75	1189
0.30	52.1	4.04	1521	3.27	1193	6.81	1527	5.43	1189
0.35	45.4	3.82	1521	3.09	1193	6.44	1527	5.14	1189
0.40	39.6	3.62	1521	2.92	1193	6.10	1527	4.87	1189
0.45	34.5	3.42	1521	2.77	1193	5.77	1527	4.60	1189
0.50	29.9	3.23	1521	2.61	1193	5.45	1527	4.35	1189
0.55	25.8	3.05	1521	2.46	1193	5.14	1527	4.10	1189
0.60	22.0	2.86	1521	2.31	1193	4.82	1527	3.85	1189
0.65	18.5	2.67	1521	2.16	1193	4.50	1527	3.59	1189
0.70	15.3	2.48	1521	2.00	1193	4.17	1527	3.33	1189
0.75	12.3	2.27	1521	1.83	1193	3.83	1527	3.05	1189

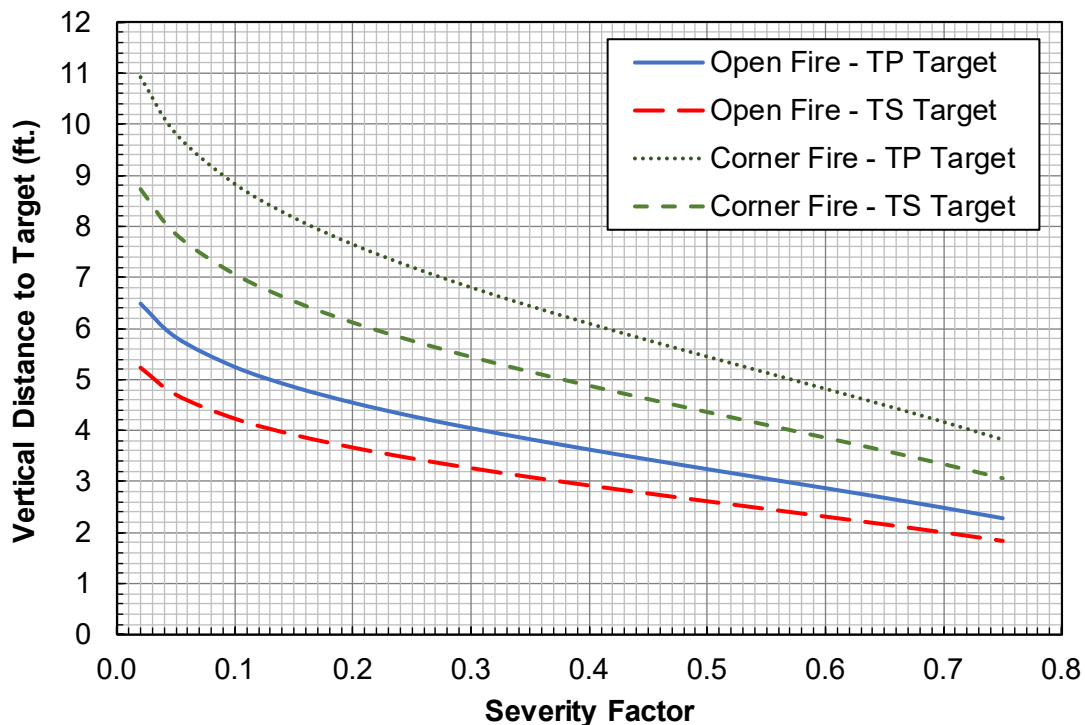


Figure D.09: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 1 Electrical Enclosures (Switchgear and Load Centers)

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	130	5.82	1521	4.70	1193	9.81	1527	7.82	1189
0.05	101	5.27	1521	4.26	1193	8.88	1527	7.08	1189
0.10	79.4	4.78	1521	3.86	1193	8.06	1527	6.43	1189
0.15	66.4	4.45	1521	3.60	1193	7.50	1527	5.98	1189
0.20	57.2	4.19	1521	3.39	1193	7.07	1527	5.64	1189
0.25	49.9	3.97	1521	3.21	1193	6.69	1527	5.34	1189
0.30	44.0	3.77	1521	3.05	1193	6.36	1527	5.07	1189
0.35	38.9	3.59	1521	2.90	1193	6.05	1527	4.83	1189
0.40	34.4	3.42	1521	2.76	1193	5.77	1527	4.60	1189
0.45	30.4	3.26	1521	2.63	1193	5.49	1527	4.38	1189
0.50	26.8	3.10	1521	2.50	1193	5.22	1527	4.16	1189
0.55	23.5	2.94	1521	2.38	1193	4.96	1527	3.95	1189
0.60	20.5	2.78	1521	2.25	1193	4.69	1527	3.74	1189
0.65	17.7	2.62	1521	2.12	1193	4.42	1527	3.52	1189
0.70	15.0	2.45	1521	1.98	1193	4.14	1527	3.30	1189
0.75	12.4	2.28	1521	1.84	1193	3.8	1527	3.06	1189

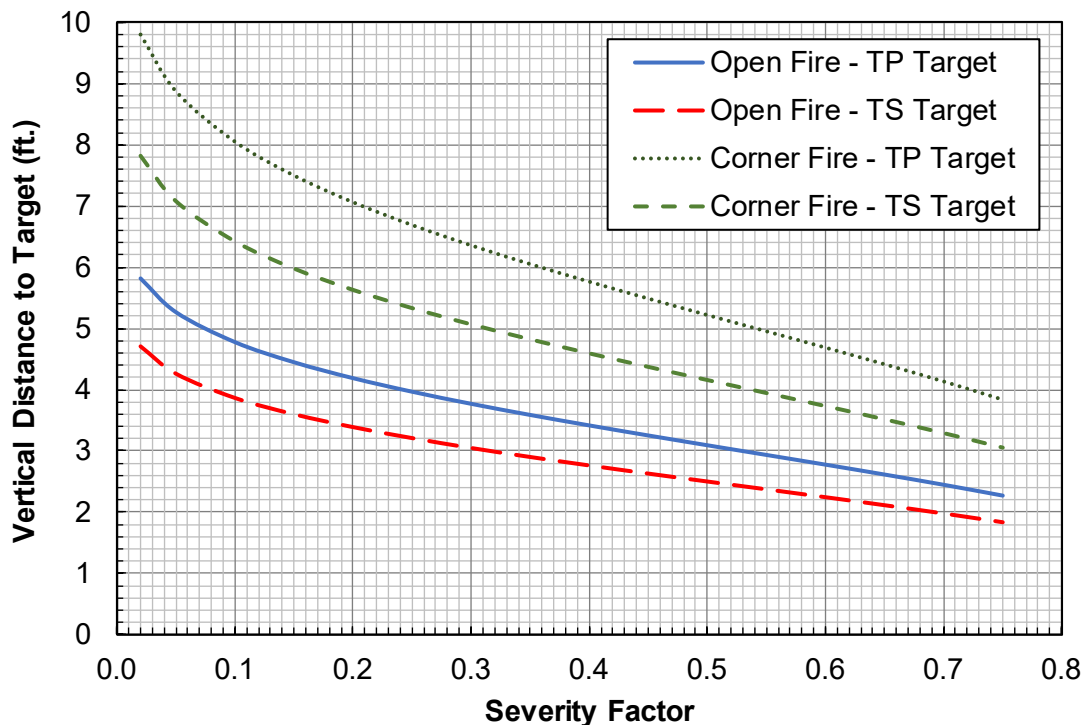


Figure D.10: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 2 Electrical Enclosures (Motor Control Centers and Battery Chargers)

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	200	6.92	1523	5.59	1193	11.66	1527	9.30	1189
0.05	143	6.04	1523	4.88	1193	10.19	1527	8.13	1189
0.10	101	5.26	1521	4.25	1193	8.87	1527	7.08	1189
0.15	77.7	4.74	1521	3.83	1193	7.99	1527	6.37	1189
0.20	61.8	4.32	1521	3.50	1193	7.29	1527	5.81	1189
0.25	50.0	3.97	1521	3.21	1193	6.70	1527	5.34	1189
0.30	40.8	3.66	1521	2.96	1193	6.17	1527	4.92	1189
0.35	33.3	3.38	1521	2.73	1193	5.69	1527	4.54	1189
0.40	27.2	3.11	1521	2.51	1193	5.25	1527	4.18	1189
0.45	22.0	2.86	1521	2.31	1193	4.82	1527	3.85	1189
0.50	17.6	2.62	1521	2.12	1193	4.41	1527	3.52	1189
0.55	13.9	2.38	1521	1.93	1193	4.02	1527	3.20	1189
0.60	10.8	2.15	1521	1.74	1193	3.63	1527	2.89	1189
0.65	8.16	1.92	1521	1.55	1192	3.24	1527	2.59	1189
0.70	5.94	1.69	1521	1.37	1192	2.86	1527	2.28	1189
0.75	4.11	1.46	1521	1.18	1192	2.5	1527	1.97	1189

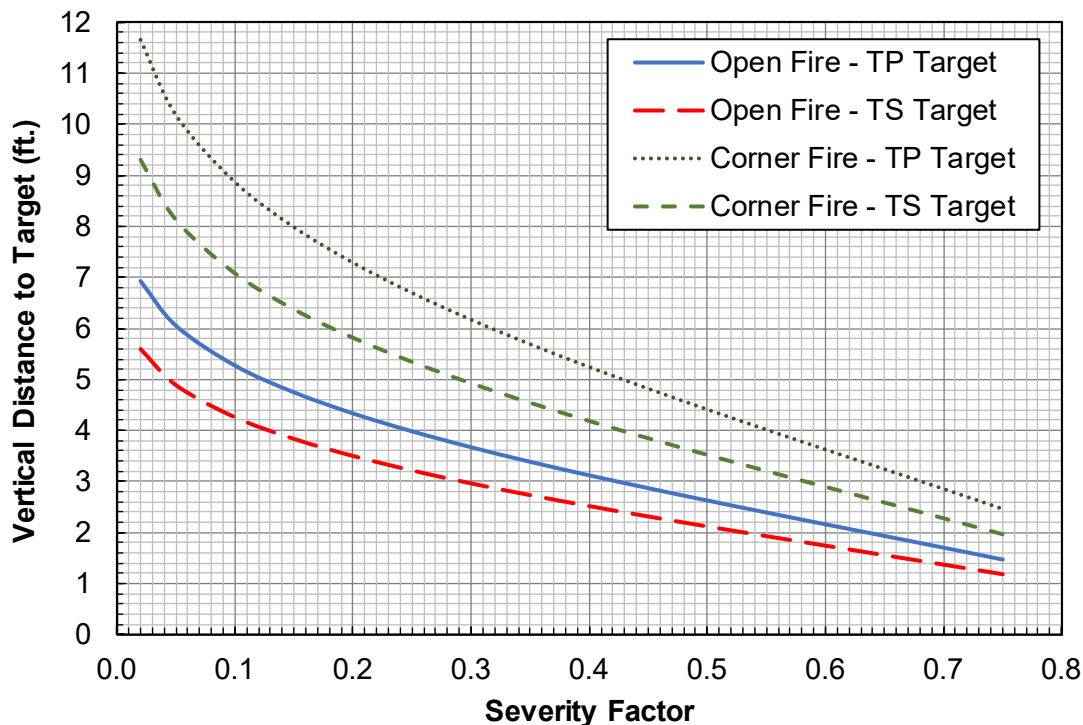


Figure D.11: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 3 Electrical Enclosures (Power Inverters)

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	400	9.13	1523	7.38	1193	15.39	1527	12.28	1189
0.05	285	7.97	1523	6.45	1193	13.44	1527	10.72	1189
0.10	202	6.95	1523	5.61	1193	11.71	1527	9.34	1189
0.15	155	6.25	1523	5.05	1193	10.54	1527	8.41	1189
0.20	124	5.71	1521	4.61	1193	9.62	1527	7.67	1189
0.25	100	5.24	1521	4.24	1193	8.84	1527	7.05	1189
0.30	81.6	4.83	1521	3.91	1193	8.15	1527	6.50	1189
0.35	66.7	4.46	1521	3.60	1193	7.51	1527	5.99	1189
0.40	54.3	4.11	1521	3.32	1193	6.92	1527	5.52	1189
0.45	44.0	3.77	1521	3.05	1193	6.36	1527	5.07	1189
0.50	35.3	3.46	1521	2.79	1193	5.82	1527	4.65	1189
0.55	27.9	3.15	1521	2.54	1193	5.30	1527	4.23	1189
0.60	21.6	2.84	1521	2.30	1193	4.79	1527	3.82	1189
0.65	16.3	2.54	1521	2.05	1193	4.28	1527	3.41	1189
0.70	11.9	2.24	1521	1.81	1193	3.77	1527	3.01	1189
0.75	8.23	1.93	1521	1.56	1192	3.25	1527	2.59	1189

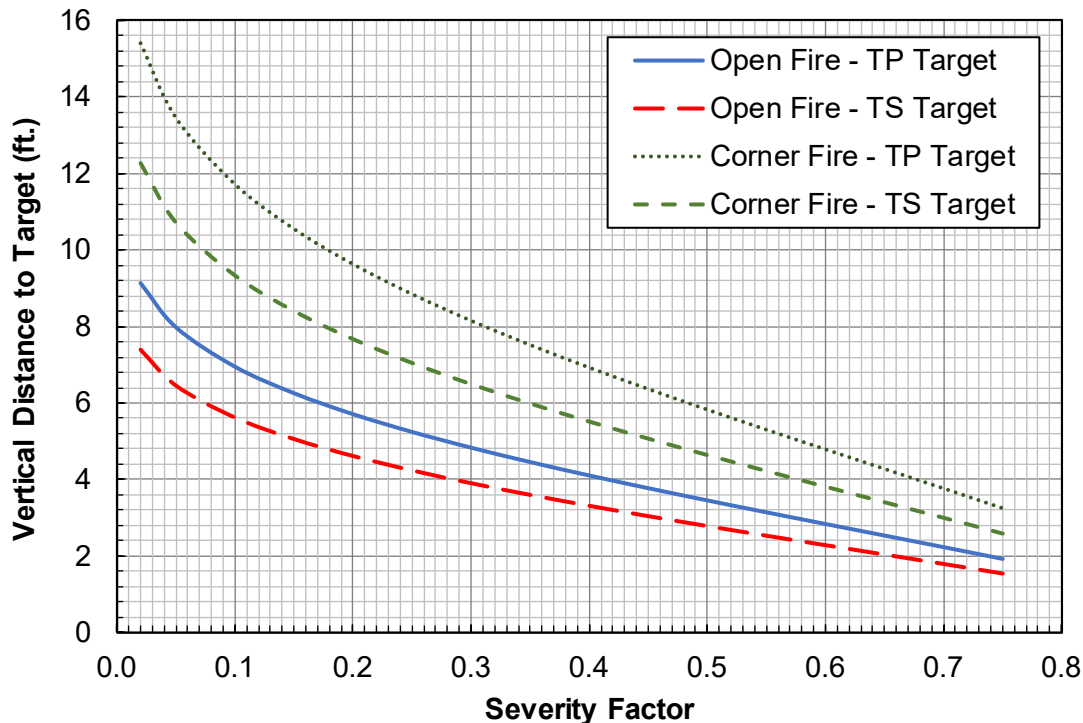


Figure D.12: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 4a Electrical Enclosures (Large Enclosures: > 50 ft³)

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	1000	13.2	1523	10.6	1193	22.2	1527	17.7	1189
0.05	684	11.3	1523	9.14	1193	19.1	1527	15.2	1189
0.10	460	9.66	1523	7.80	1193	16.3	1527	13.0	1189
0.15	339	8.54	1523	6.90	1193	14.4	1527	11.5	1189
0.20	258	7.66	1523	6.20	1193	12.9	1527	10.3	1189
0.25	200	6.92	1523	5.59	1193	11.7	1527	9.35	1189
0.30	156	6.27	1523	5.06	1193	10.6	1527	8.46	1189
0.35	122	5.67	1521	4.58	1193	9.56	1527	7.66	1189
0.40	94.2	5.12	1521	4.14	1193	8.63	1527	6.92	1189
0.45	72.2	4.60	1521	3.72	1193	7.76	1527	6.23	1189
0.50	54.5	4.11	1521	3.32	1193	6.93	1527	5.57	1189
0.55	40.3	3.64	1521	2.94	1193	6.14	1527	4.94	1189
0.60	28.9	3.19	1521	2.58	1193	5.38	1527	4.33	1189
0.65	20.0	2.75	1521	2.22	1193	4.64	1527	3.74	1189
0.70	13.1	2.33	1521	1.88	1193	3.92	1527	3.16	1189
0.75	8.02	1.91	1521	1.54	1192	3.22	1527	2.60	1189

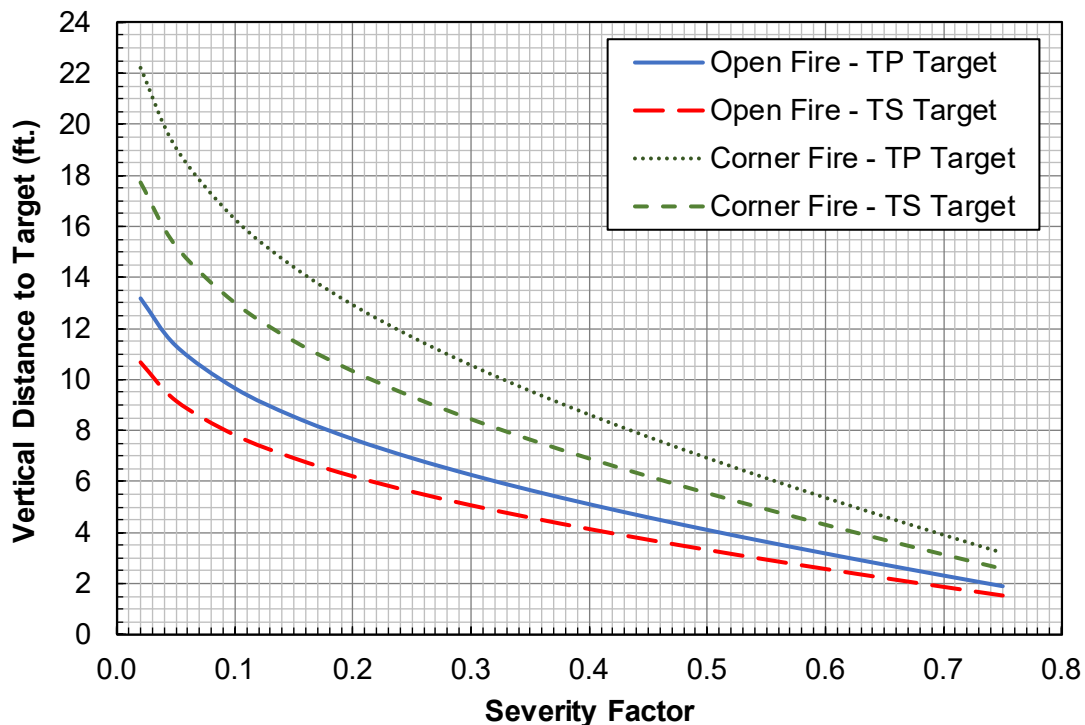


Figure D.13: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Open Group 4a Electrical Enclosures (Large Enclosures: > 50 ft³)

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	200	6.92	1523	5.59	1193	11.7	1527	9.30	1189
0.05	143	6.04	1523	4.88	1193	10.2	1527	8.13	1189
0.10	101	5.26	1521	4.25	1193	8.87	1527	7.08	1189
0.15	77.7	4.74	1521	3.83	1193	7.99	1527	6.37	1189
0.20	61.8	4.32	1521	3.50	1193	7.29	1527	5.81	1189
0.25	50.0	3.97	1521	3.21	1193	6.70	1527	5.34	1189
0.30	40.8	3.66	1521	2.96	1193	6.17	1527	4.92	1189
0.35	33.3	3.38	1521	2.73	1193	5.69	1527	4.54	1189
0.40	27.2	3.11	1521	2.51	1193	5.25	1527	4.18	1189
0.45	22.0	2.86	1521	2.31	1193	4.82	1527	3.85	1189
0.50	17.6	2.62	1521	2.12	1193	4.41	1527	3.52	1189
0.55	13.9	2.38	1521	1.93	1193	4.02	1527	3.20	1189
0.60	10.8	2.15	1521	1.74	1193	3.63	1527	2.89	1189
0.65	8.16	1.92	1521	1.55	1192	3.24	1527	2.59	1189
0.70	5.94	1.69	1521	1.37	1192	2.86	1527	2.28	1189
0.75	4.11	1.46	1521	1.18	1192	2.47	1527	1.97	1189

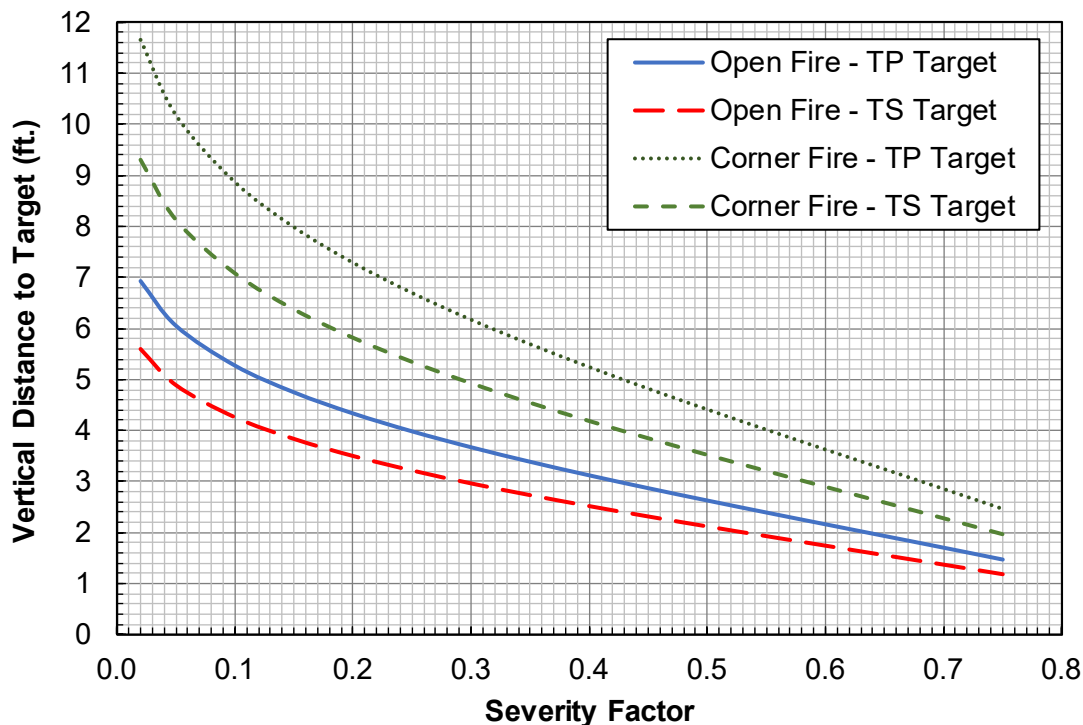


Figure D.14: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 4b Electrical Enclosures (Medium Enclosures: > 12 ft³ and ≤ 50 ft³)

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	325	8.40	1523	6.79	1193	14.2	1527	11.3	1189
0.05	231	7.33	1523	5.92	1193	12.4	1527	9.85	1189
0.10	163	6.37	1523	5.15	1193	10.7	1527	8.57	1189
0.15	125	5.73	1521	4.63	1193	9.66	1527	7.71	1189
0.20	99.2	5.22	1521	4.22	1193	8.81	1527	7.03	1189
0.25	80.0	4.79	1521	3.88	1193	8.08	1527	6.45	1189
0.30	65.0	4.41	1521	3.57	1193	7.44	1527	5.93	1189
0.35	52.9	4.06	1521	3.29	1193	6.85	1527	5.46	1189
0.40	43.0	3.74	1521	3.02	1193	6.30	1527	5.03	1189
0.45	34.7	3.43	1521	2.77	1193	5.78	1527	4.61	1189
0.50	27.7	3.14	1521	2.53	1193	5.29	1527	4.22	1189
0.55	21.8	2.85	1521	2.30	1193	4.80	1527	3.83	1189
0.60	16.8	2.57	1521	2.08	1193	4.33	1527	3.45	1189
0.65	12.6	2.29	1521	1.85	1193	3.86	1527	3.08	1189
0.70	9.12	2.01	1521	1.63	1193	3.39	1527	2.70	1189
0.75	6.26	1.73	1521	1.40	1192	2.92	1527	2.33	1189

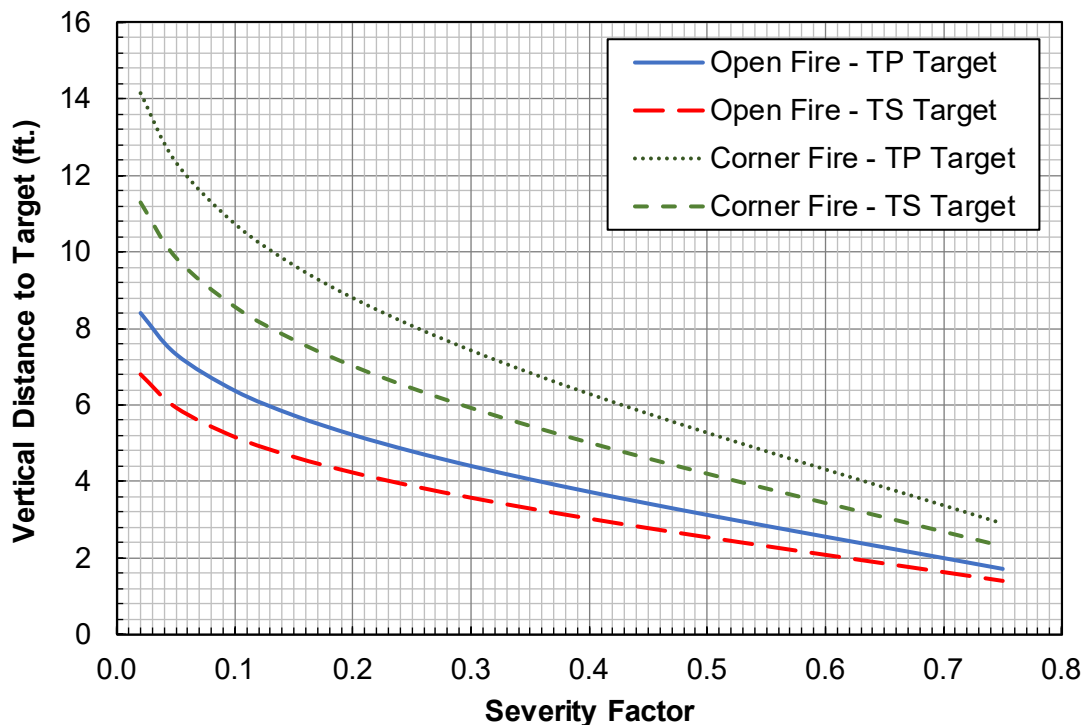


Figure D.15: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Open Group 4b Electrical Enclosures (Medium Enclosures: > 12 ft³ and ≤ 50 ft³)

SF	HRR (kW)	Vertical Open Fire				Vertical Corner Fire			
		TP		TS		TP		TS	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	45.1	3.81	1521	3.08	1193	6.43	1527	5.12	1189
0.05	34.1	3.41	1521	2.75	1193	5.74	1527	4.58	1189
0.10	25.8	3.05	1521	2.46	1193	5.14	1527	4.10	1189
0.15	21.0	2.81	1521	2.27	1193	4.73	1527	3.78	1189
0.20	17.6	2.62	1521	2.12	1193	4.41	1527	3.52	1189
0.25	15.0	2.46	1521	1.98	1193	4.14	1527	3.30	1189
0.30	12.9	2.31	1521	1.87	1193	3.90	1527	3.11	1189
0.35	11.1	2.18	1521	1.76	1193	3.67	1527	2.93	1189
0.40	9.6	2.05	1521	1.66	1193	3.46	1527	2.76	1189
0.45	8.29	1.94	1521	1.56	1192	3.26	1527	2.60	1189
0.50	7.10	1.82	1521	1.47	1192	3.07	1527	2.45	1189
0.55	6.04	1.71	1521	1.38	1192	2.88	1527	2.29	1189
0.60	5.09	1.59	1521	1.29	1192	2.68	1527	2.14	1189
0.65	4.22	1.48	1521	1.19	1192	2.49	1527	1.99	1189
0.70	3.42	1.36	1521	1.10	1192	2.29	1527	1.83	1189
0.75	2.70	1.2	1521	1.00	1192	2.08	1527	1.66	1189

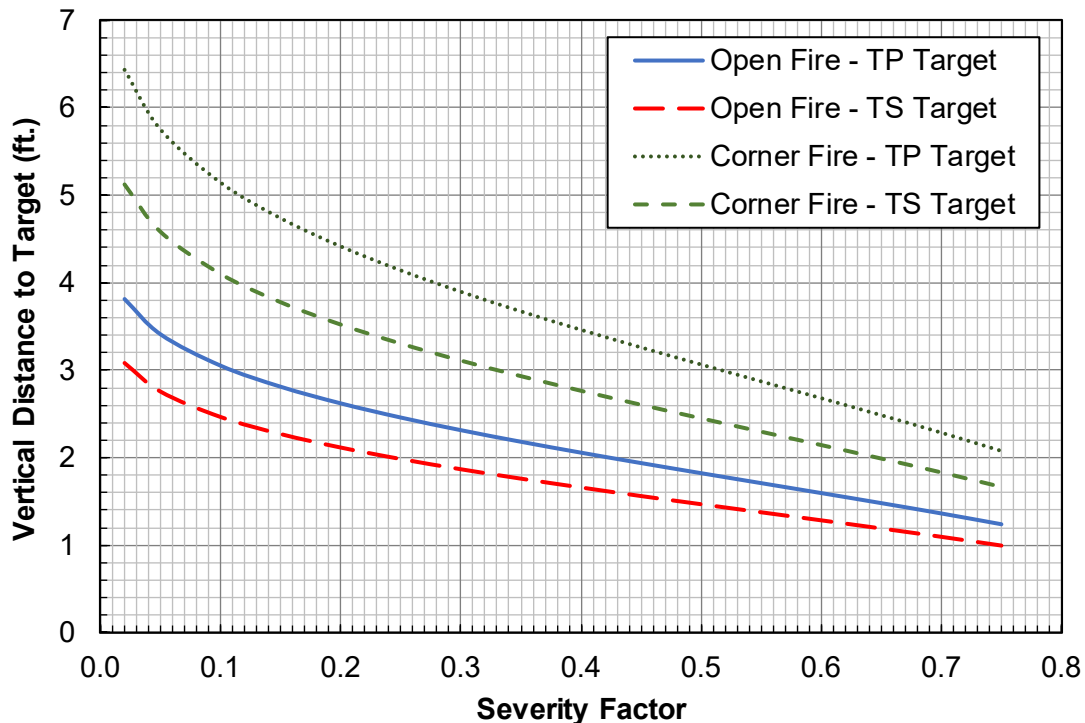


Figure D.16: Vertical ZOI and Corresponding Damage Time vs. Severity Factor for Group 4c Electrical Enclosures (Small Enclosures: $\leq 12 \text{ ft}^3$)

TABLE/PLOT SET E
RADIAL ZOI AND CORRESPONDING DAMAGE TIME VERSUS SEVERITY FACTOR

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Table/Plot Set E: Overview and Assumptions

To develop table/plot set E, calculations were performed to determine the longest radial distance at which a target will be damaged or a secondary combustible will ignite when exposed to the thermal radiation from of an ignition source fire whose HRR profile corresponds to a specified SF. This target distance is referred to as the radial (or horizontal) ZOI for the specified SF and corresponding HRR profile. Each table and plot provides the radial ZOIs corresponding to SFs ranging from 0.02 to 0.75 for one of the fixed or transient ignition sources listed in Attachment 5. Table/plot set E is used to conservatively estimate the SF for a target or secondary combustible located within the radial ZOI for the 98th percentile HRR, based on its distance from the ignition source (Step 2.6.1).

The tables also provide the time at which the target will be damaged or will ignite. This time is used in the calculation of the NSP (Step 2.7.1).

The assumptions and background for the calculations performed to develop the tables and plots in set D are discussed in Section 06.03.05 of IMC 0308, Attachment 3, Appendix F. Because these calculations were based on the adjusted solid flame radiation model and the heat soak method, the same assumptions were made as in the development of the tables and plots for the radial ZOI of fixed and transient ignition sources in set A.

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	15.0	0.24	679	0.03	60	0.87	132
0.05	11.8	0.19	678	0.03	60	0.76	132
0.10	9.36	0.15	677	0.03	60	0.67	131
0.15	7.89	0.13	676	0.03	60	0.60	131
0.20	6.84	0.11	676	0.03	60	0.56	131
0.25	6.01	0.09	675	0.03	60	0.51	130
0.30	5.33	0.08	674	0.03	60	0.48	130
0.35	4.74	0.07	674	0.03	60	0.45	130
0.40	4.22	0.06	672	0.03	60	0.42	130
0.45	3.76	0.05	672	0.03	60	0.39	130
0.50	3.34	0.04	671	0.03	60	0.36	129
0.55	2.96	0.03	60	0.03	60	0.34	129
0.60	2.60	0.03	60	0.03	60	0.31	129
0.65	2.26	0.03	60	0.03	60	0.29	128
0.70	1.94	0.03	60	0.03	60	0.26	128
0.75	1.63	0.03	60	0.03	60	0.23	127

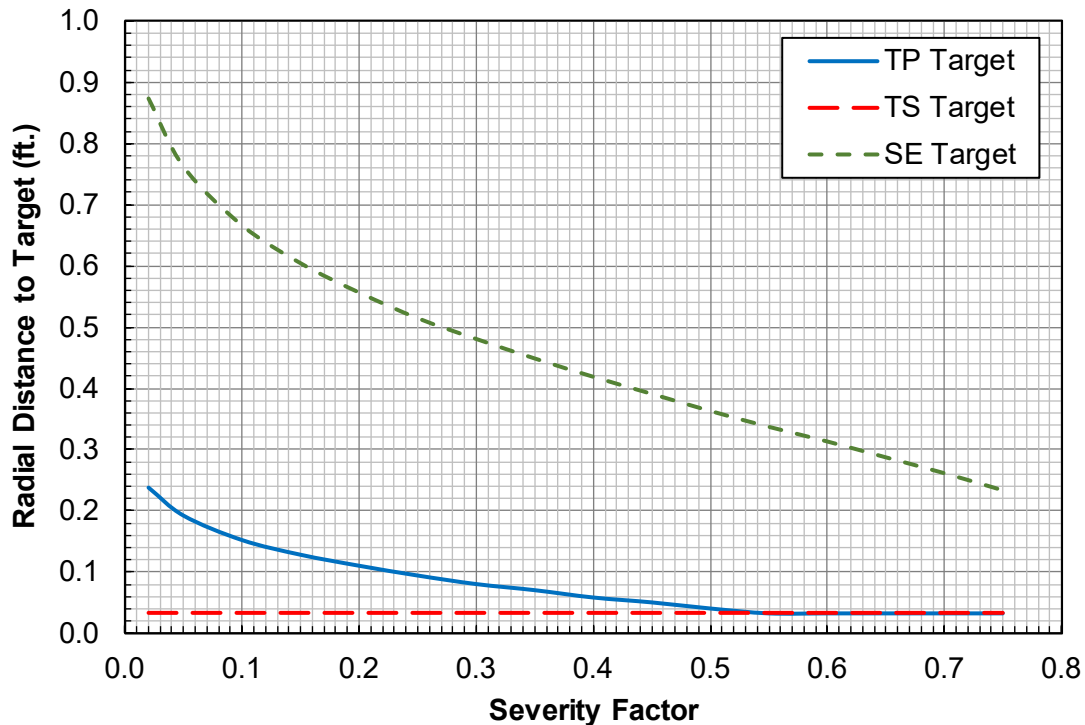


Figure E.01: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Class A Motors

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	37.1	0.50	682	0.04	778	1.44	133
0.05	28.8	0.41	681	0.03	60	1.25	133
0.10	22.5	0.34	680	0.03	60	1.09	133
0.15	18.8	0.29	680	0.03	60	0.99	133
0.20	16.1	0.25	679	0.03	60	0.91	132
0.25	14.1	0.22	679	0.03	60	0.84	132
0.30	12.3	0.20	678	0.03	60	0.78	132
0.35	10.9	0.18	678	0.03	60	0.72	132
0.40	9.62	0.15	677	0.03	60	0.67	131
0.45	8.48	0.14	676	0.03	60	0.63	131
0.50	7.46	0.12	676	0.03	60	0.58	131
0.55	6.53	0.10	675	0.03	60	0.54	131
0.60	5.66	0.08	674	0.03	60	0.50	131
0.65	4.86	0.07	673	0.03	60	0.45	130
0.70	4.11	0.05	672	0.03	60	0.41	130
0.75	3.39	0.04	671	0.03	60	0.36	129

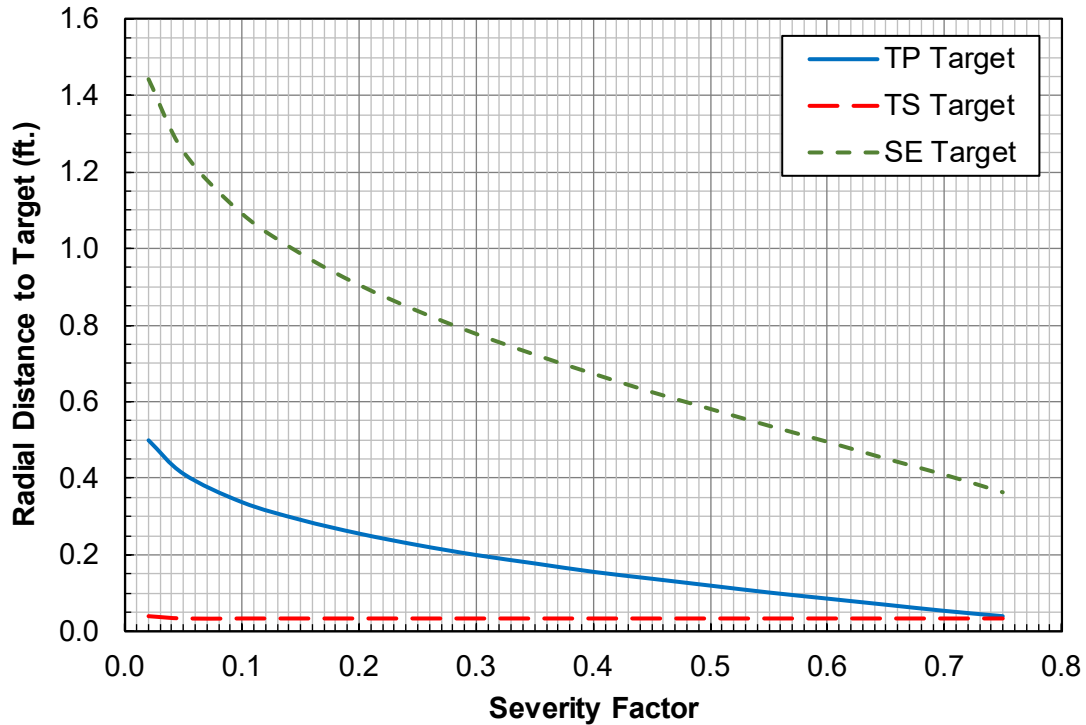


Figure E.02: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Class B Motors

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	100	1.00	684	0.29	787	2.47	134
0.05	77.1	0.84	684	0.20	785	2.14	134
0.10	59.8	0.71	683	0.13	783	1.87	134
0.15	49.7	0.62	683	0.09	781	1.69	134
0.20	42.5	0.55	682	0.05	780	1.55	134
0.25	36.8	0.50	682	0.03	60	1.43	133
0.30	32.2	0.45	682	0.03	60	1.33	133
0.35	28.3	0.41	681	0.03	60	1.23	133
0.40	24.9	0.37	681	0.03	60	1.15	133
0.45	21.8	0.33	680	0.03	60	1.07	133
0.50	19.1	0.30	680	0.03	60	0.99	133
0.55	16.6	0.26	679	0.03	60	0.92	132
0.60	14.4	0.23	679	0.03	60	0.84	132
0.65	12.2	0.20	678	0.03	60	0.77	132
0.70	10.3	0.17	677	0.03	60	0.70	132
0.75	8.40	0.14	677	0.03	60	0.62	131

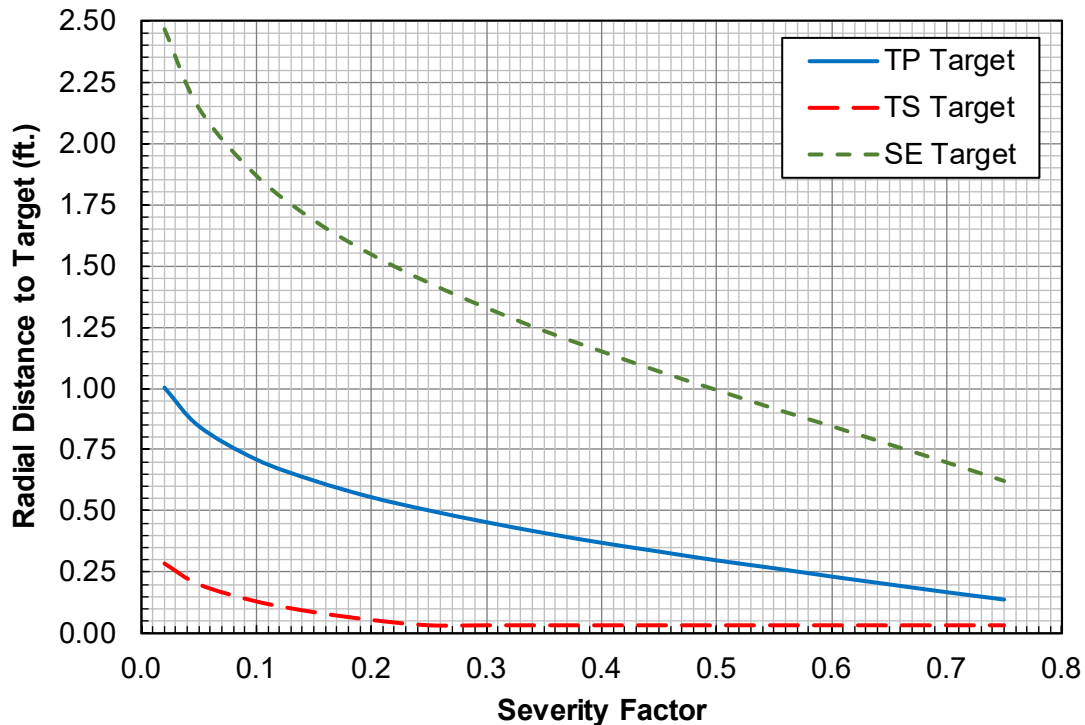


Figure E.03: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Class C Motors

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	30.1	0.11	1140	0.03	60	1.26	60
0.05	20.6	0.08	1140	0.03	60	1.02	60
0.10	13.9	0.05	1140	0.03	60	0.82	60
0.15	10.2	0.03	60	0.03	60	0.69	60
0.20	7.82	0.03	60	0.03	60	0.59	60
0.25	6.07	0.03	60	0.03	60	0.51	60
0.30	4.74	0.03	60	0.03	60	0.44	60
0.35	3.70	0.03	60	0.03	60	0.38	60
0.40	2.87	0.03	60	0.03	60	0.33	60
0.45	2.20	0.03	60	0.03	60	0.28	60
0.50	1.66	0.03	60	0.03	60	0.24	60
0.55	1.23	0.03	60	0.03	60	0.20	60
0.60	0.89	0.03	60	0.03	60	0.16	60
0.65	0.61	0.03	60	0.03	60	0.13	60
0.70	0.40	0.03	60	0.03	60	0.10	60
0.75	0.25	0.03	60	0.03	60	0.07	60

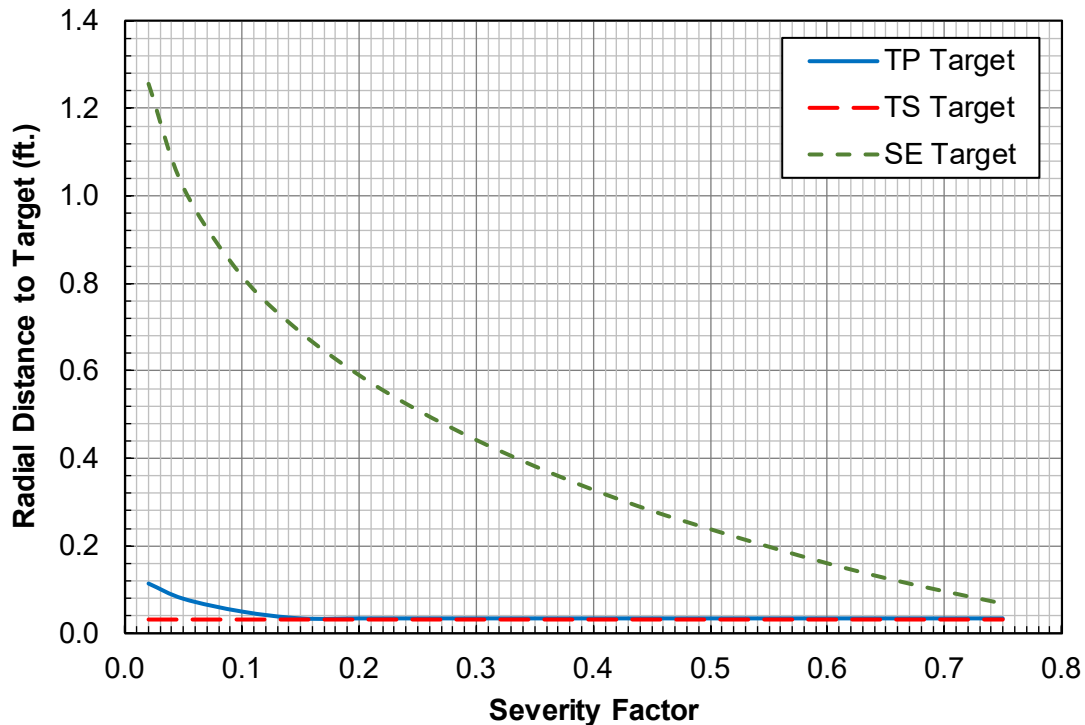


Figure E.04: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Class A Dry Transformers

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	69.8	0.86	1140	0.26	790	1.98	60
0.05	48.3	0.69	1140	0.15	789	1.62	60
0.10	32.9	0.54	1140	0.06	790	1.31	60
0.15	24.6	0.45	1140	0.03	60	1.11	60
0.20	19.0	0.38	1140	0.03	60	0.97	60
0.25	14.9	0.32	1140	0.03	60	0.84	60
0.30	11.8	0.27	1140	0.03	60	0.74	60
0.35	9.28	0.23	1140	0.03	60	0.65	60
0.40	7.30	0.19	1140	0.03	60	0.56	60
0.45	5.69	0.16	1140	0.03	60	0.49	60
0.50	4.37	0.12	1140	0.03	60	0.42	60
0.55	3.29	0.10	1140	0.03	60	0.36	60
0.60	2.42	0.07	1140	0.03	60	0.30	60
0.65	1.72	0.05	1140	0.03	60	0.24	60
0.70	1.16	0.03	60	0.03	60	0.19	60
0.75	0.74	0.03	60	0.03	60	0.14	60

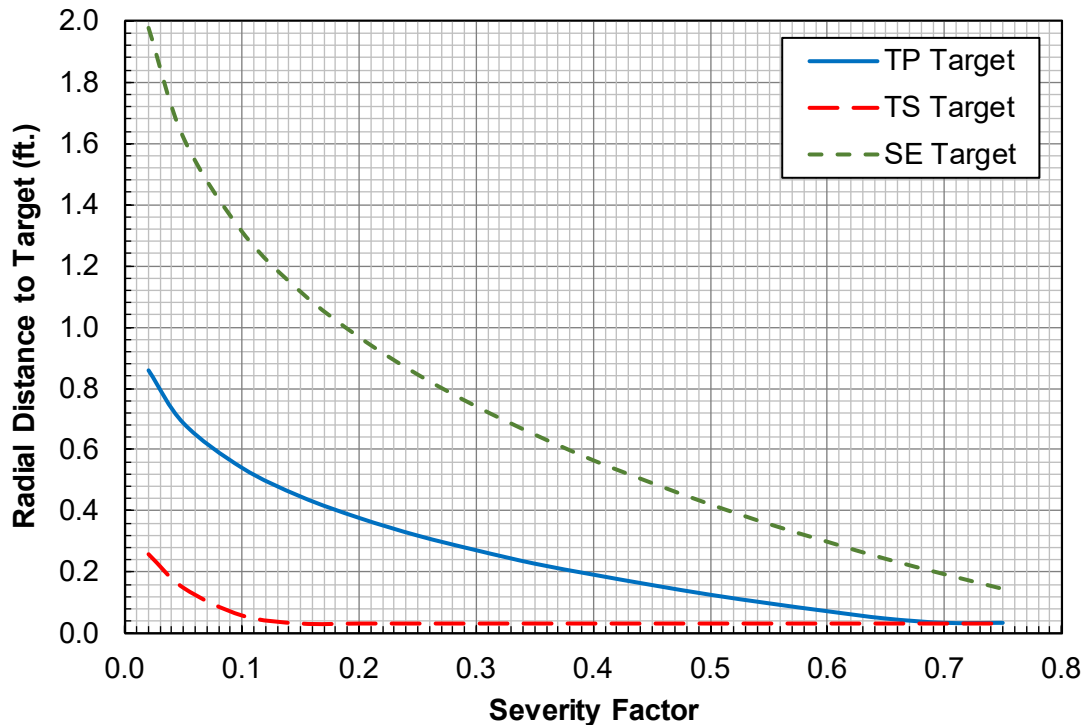


Figure E.05: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Class B Dry Transformers

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	130	1.23	600	0.53	790	2.76	60
0.05	91.5	0.99	600	0.38	790	2.28	60
0.10	63.6	0.79	600	0.25	790	1.87	60
0.15	48.2	0.66	600	0.17	789	1.61	60
0.20	37.8	0.56	600	0.11	790	1.41	60
0.25	30.1	0.48	600	0.06	790	1.24	60
0.30	24.2	0.41	600	0.03	60	1.10	60
0.35	19.4	0.35	600	0.03	60	0.98	60
0.40	15.6	0.30	600	0.03	60	0.86	60
0.45	12.4	0.25	600	0.03	60	0.76	60
0.50	9.73	0.21	600	0.03	60	0.66	60
0.55	7.52	0.16	600	0.03	60	0.57	60
0.60	5.68	0.13	600	0.03	60	0.49	60
0.65	4.17	0.09	600	0.03	60	0.41	60
0.70	2.93	0.06	600	0.03	60	0.33	60
0.75	1.95	0.03	60	0.03	60	0.26	60

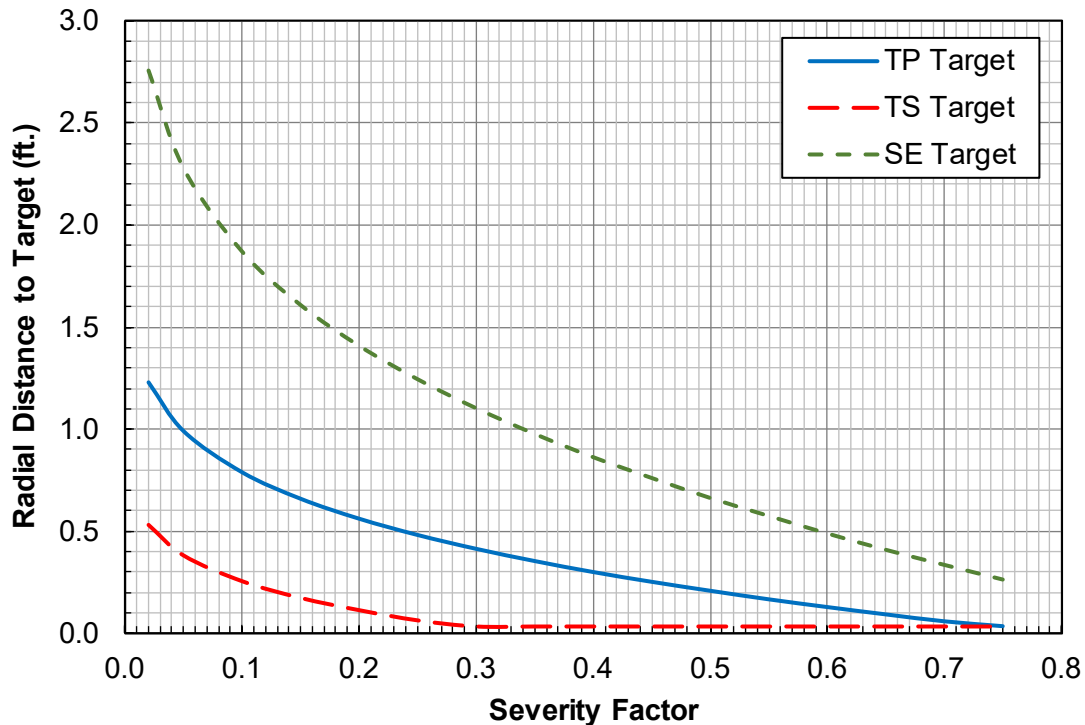


Figure E.06: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Class C Dry Transformers

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	278	1.23	824	0.45	917	4.39	322
0.05	180	0.89	818	0.28	922	3.49	298
0.10	114	0.61	812	0.15	929	2.72	270
0.15	79.1	0.44	798	0.08	931	2.23	245
0.20	57.0	0.32	776	0.04	937	1.86	223
0.25	41.6	0.23	743	0.03	60	1.57	197
0.30	30.5	0.16	713	0.03	60	1.27	174
0.35	22.2	0.11	676	0.03	60	0.99	154
0.40	16.0	0.06	639	0.03	60	0.78	138
0.45	11.3	0.03	60	0.03	60	0.61	123
0.50	7.81	0.03	60	0.03	60	0.47	111
0.55	5.22	0.03	60	0.03	60	0.35	99
0.60	3.34	0.03	60	0.03	60	0.25	90
0.65	2.03	0.03	60	0.03	60	0.17	81
0.70	1.14	0.03	60	0.03	60	0.10	74
0.75	0.58	0.03	60	0.03	60	0.05	69

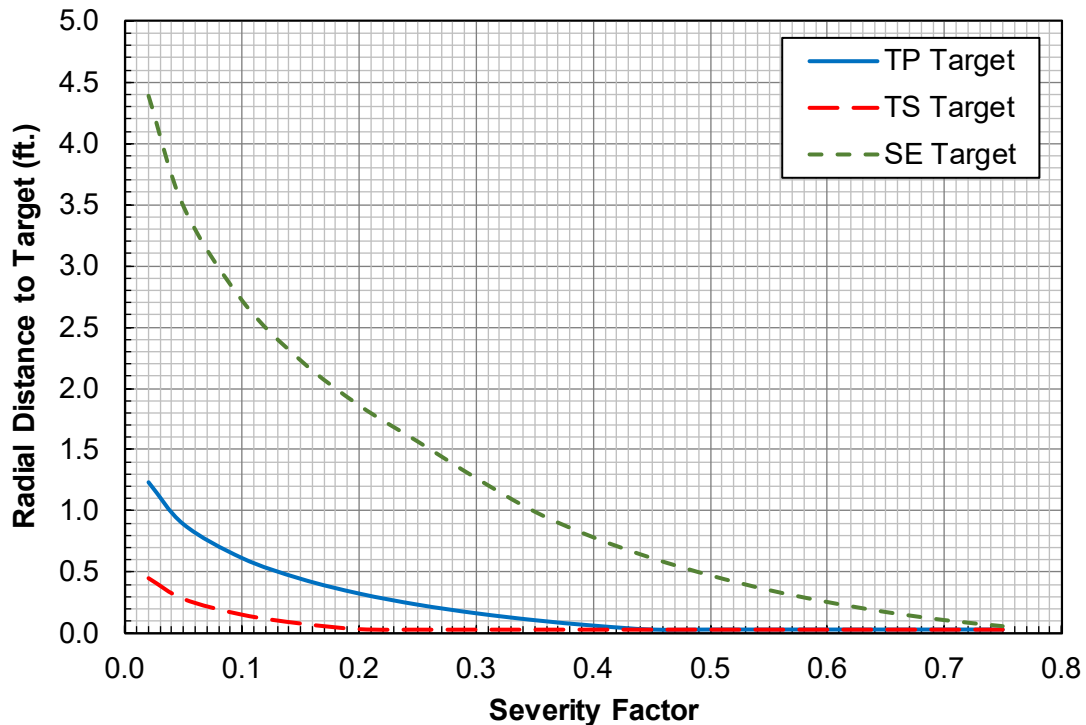


Figure E.07: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Generic Transients

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	143	0.76	839	0.22	948	3.08	301
0.05	95.3	0.55	843	0.13	966	2.47	281
0.10	62.0	0.38	836	0.06	984	1.95	257
0.15	44.3	0.27	815	0.03	60	1.62	234
0.20	32.8	0.20	797	0.03	60	1.37	211
0.25	24.6	0.15	772	0.03	60	1.17	190
0.30	18.6	0.10	747	0.03	60	0.96	171
0.35	14.0	0.07	714	0.03	60	0.77	154
0.40	10.4	0.04	686	0.03	60	0.62	140
0.45	7.68	0.03	60	0.03	60	0.50	127
0.50	5.54	0.03	60	0.03	60	0.39	115
0.55	3.89	0.03	60	0.03	60	0.30	105
0.60	2.64	0.03	60	0.03	60	0.23	95
0.65	1.70	0.03	60	0.03	60	0.16	86
0.70	1.04	0.03	60	0.03	60	0.11	79
0.75	0.58	0.03	60	0.03	60	0.06	73

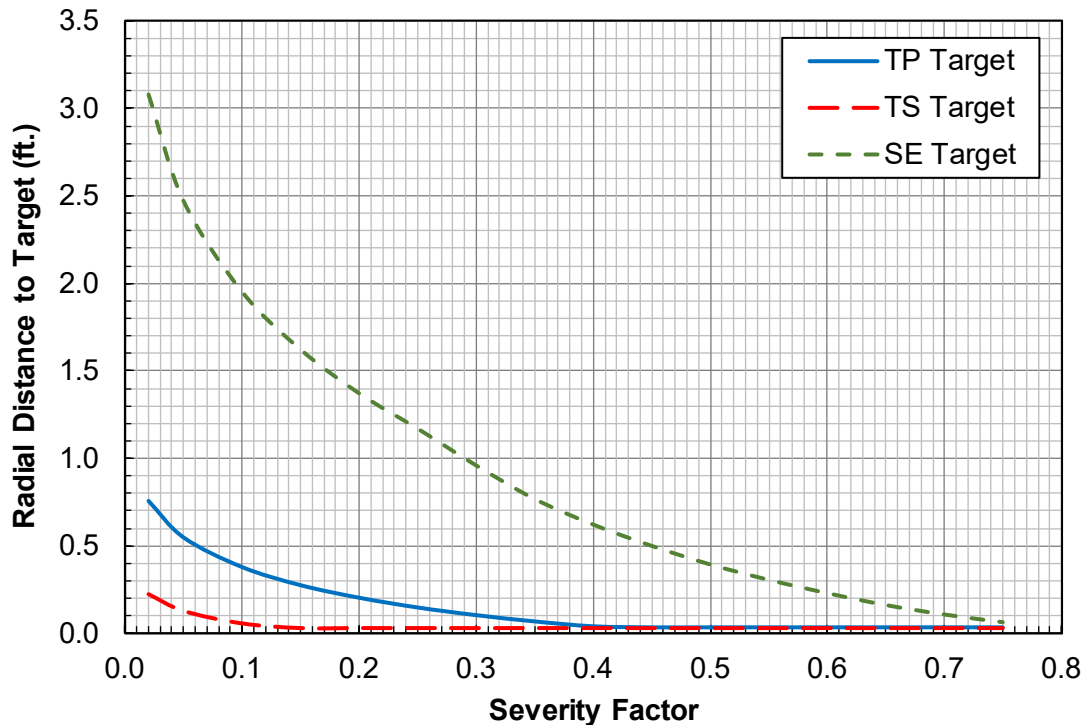


Figure E.08: Radial ZOI and Corresponding Damage Time vs. Severity Factor for TCCL Transients

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	170	1.65	1498	0.79	1460	3.43	720
0.05	130	1.41	1496	0.65	1456	2.97	720
0.10	99.9	1.20	1493	0.54	1451	2.57	720
0.15	82.3	1.07	1491	0.46	1447	2.31	720
0.20	69.8	0.96	1489	0.41	1443	2.11	720
0.25	60.0	0.88	1487	0.36	1440	1.95	720
0.30	52.1	0.80	1486	0.32	1438	1.80	720
0.35	45.4	0.74	1484	0.29	1434	1.67	720
0.40	39.6	0.68	1482	0.26	1432	1.55	720
0.45	34.5	0.62	1481	0.23	1428	1.43	720
0.50	29.9	0.57	1480	0.20	1425	1.32	720
0.55	25.8	0.51	1478	0.17	1421	1.22	720
0.60	22.0	0.46	1475	0.15	1416	1.11	720
0.65	18.5	0.41	1472	0.13	1411	1.01	720
0.70	15.3	0.36	1470	0.10	1402	0.91	720
0.75	12.3	0.31	1466	0.08	1395	0.80	720

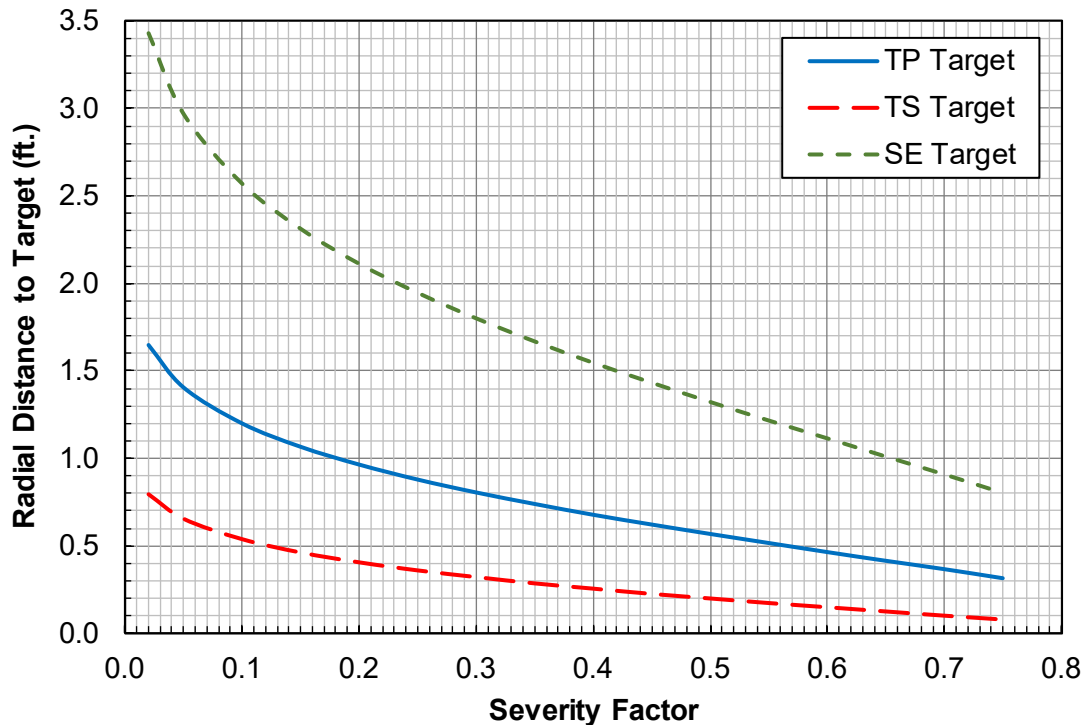


Figure E.09: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 1 Electrical Enclosures (Switchgear and Load Centers)

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	130	1.40	1496	0.65	1455	2.96	720
0.05	101	1.21	1493	0.54	1451	2.59	720
0.10	79.4	1.04	1491	0.45	1446	2.27	720
0.15	66.4	0.94	1489	0.39	1443	2.06	720
0.20	57.2	0.85	1487	0.35	1439	1.89	720
0.25	49.9	0.78	1486	0.31	1436	1.76	720
0.30	44.0	0.72	1484	0.28	1433	1.64	720
0.35	38.9	0.67	1482	0.25	1431	1.53	720
0.40	34.4	0.62	1481	0.23	1428	1.43	720
0.45	30.4	0.57	1480	0.20	1424	1.34	720
0.50	26.8	0.53	1477	0.18	1421	1.24	720
0.55	23.5	0.48	1476	0.16	1418	1.16	720
0.60	20.5	0.44	1474	0.14	1414	1.07	720
0.65	17.7	0.40	1472	0.12	1409	0.98	720
0.70	15.0	0.36	1470	0.10	1402	0.90	720
0.75	12.4	0.31	1466	0.08	1397	0.80	719

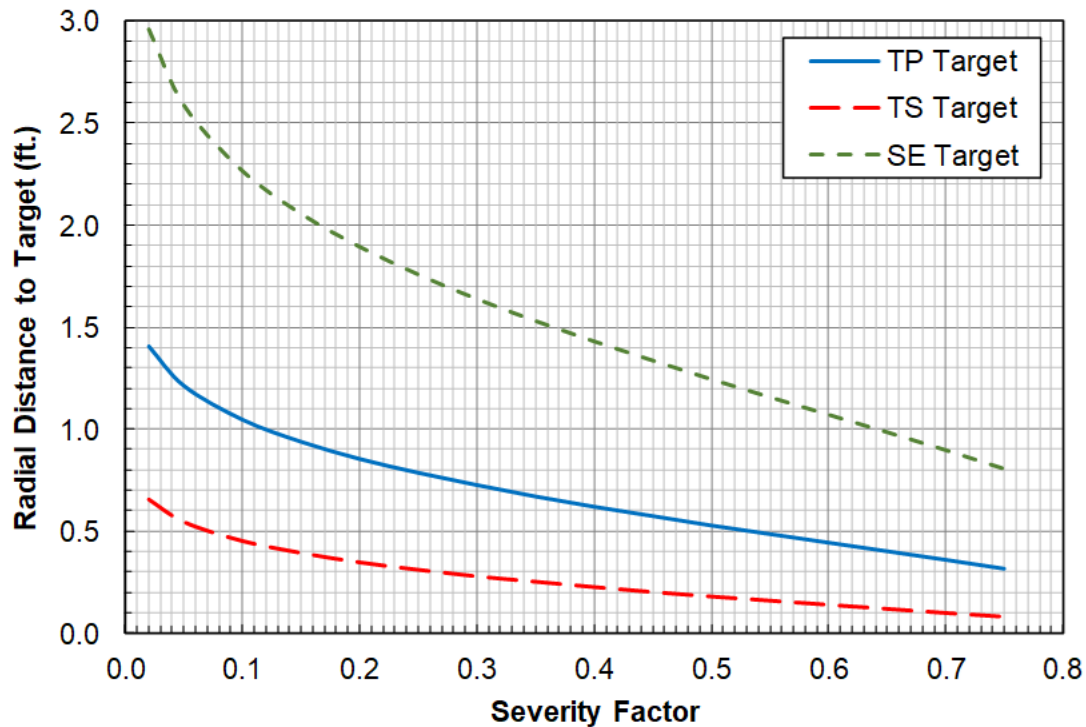


Figure E.10: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 2 Electrical Enclosures (Motor Control Centers and Battery Chargers)

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	200	1.81	1500	0.89	1463	3.74	720
0.05	143	1.49	1497	0.70	1457	3.12	720
0.10	101	1.21	1493	0.54	1451	2.58	720
0.15	77.7	1.03	1491	0.44	1446	2.24	720
0.20	61.8	0.90	1488	0.37	1441	1.98	720
0.25	50.0	0.78	1485	0.31	1436	1.76	720
0.30	40.8	0.69	1483	0.26	1432	1.57	720
0.35	33.3	0.61	1481	0.22	1427	1.40	720
0.40	27.2	0.53	1478	0.18	1421	1.25	720
0.45	22.0	0.46	1475	0.15	1416	1.11	719
0.50	17.6	0.40	1472	0.12	1409	0.98	720
0.55	13.9	0.34	1468	0.09	1399	0.86	720
0.60	10.8	0.29	1465	0.07	1389	0.74	719
0.65	8.16	0.23	1460	0.05	1380	0.63	720
0.70	5.94	0.19	1455	0.03	60	0.52	719
0.75	4.11	0.14	1446	0.03	60	0.42	720

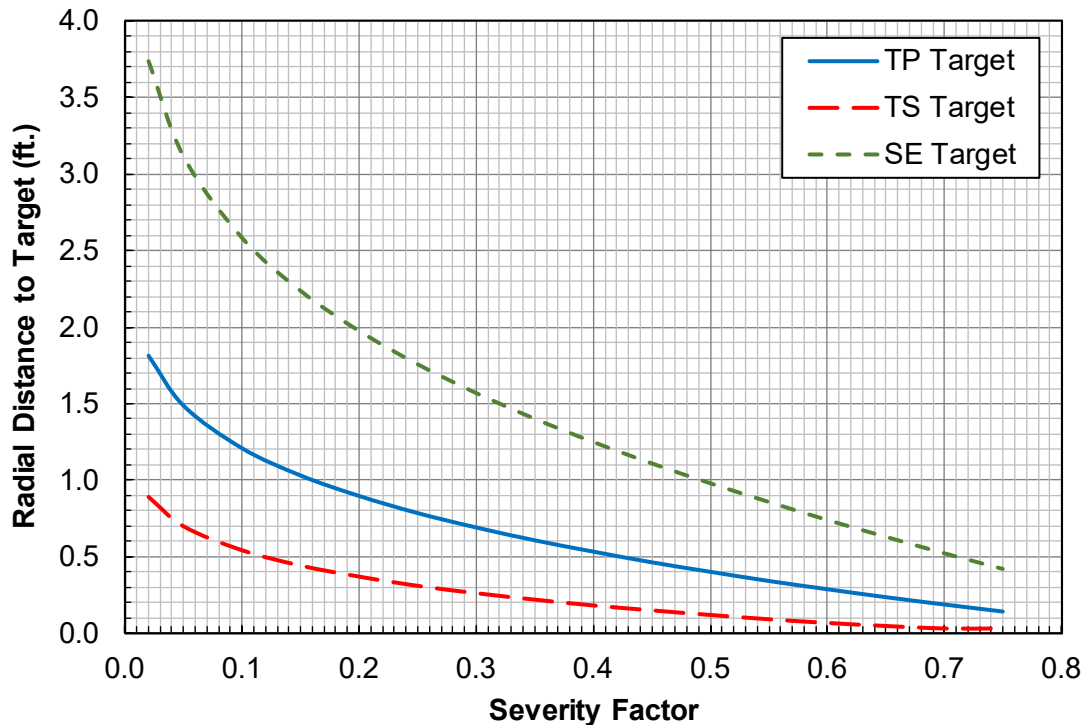


Figure E.11: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 3 Electrical Enclosures (Power Inverters)

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	400	2.71	1505	1.43	1474	5.42	720
0.05	285	2.23	1502	1.14	1468	4.53	720
0.10	202	1.82	1500	0.90	1463	3.76	720
0.15	155	1.56	1497	0.74	1459	3.26	720
0.20	124	1.36	1495	0.63	1455	2.88	720
0.25	100	1.20	1493	0.54	1451	2.57	720
0.30	81.6	1.06	1491	0.46	1447	2.30	720
0.35	66.7	0.94	1489	0.39	1443	2.06	720
0.40	54.3	0.83	1487	0.33	1438	1.84	720
0.45	44.0	0.72	1484	0.28	1434	1.64	720
0.50	35.3	0.63	1481	0.23	1428	1.45	720
0.55	27.9	0.54	1478	0.19	1421	1.27	720
0.60	21.6	0.46	1475	0.15	1414	1.10	720
0.65	16.3	0.38	1470	0.11	1406	0.94	720
0.70	11.9	0.30	1465	0.08	1396	0.78	719
0.75	8.23	0.24	1461	0.05	1379	0.63	719

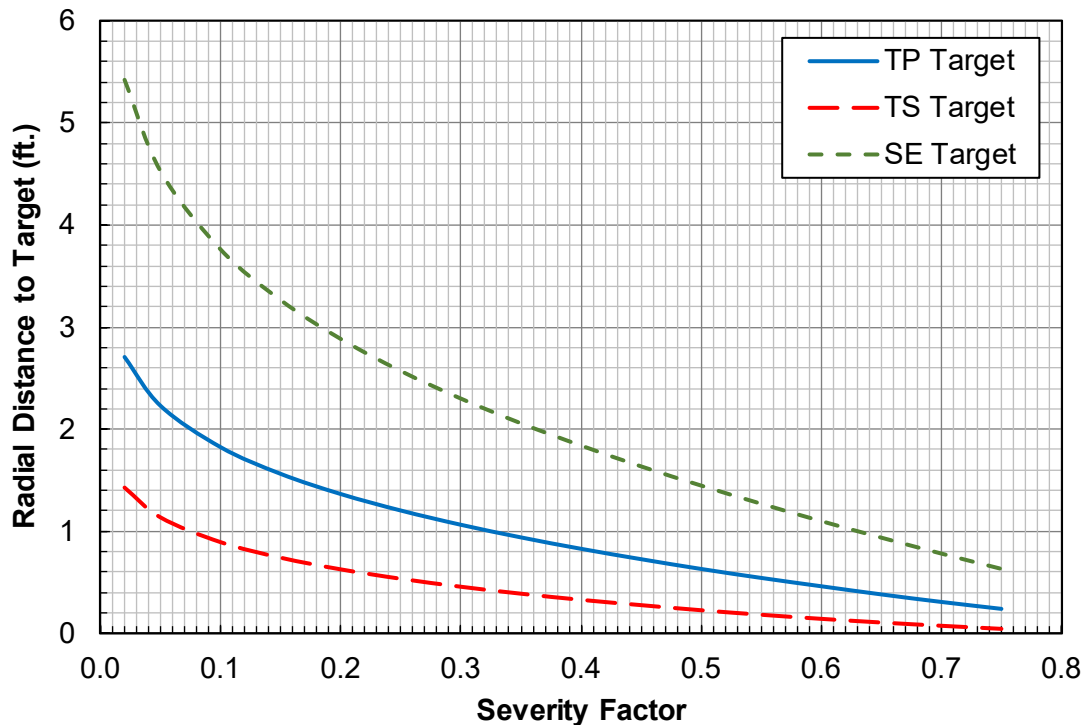


Figure E.12: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 4a Electrical Enclosures (Large Enclosures: > 50 ft³)

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	1000	4.55	1511	2.58	1485	8.81	720
0.05	684	3.67	1509	2.03	1481	7.21	720
0.10	460	2.93	1506	1.57	1475	5.84	720
0.15	339	2.46	1504	1.28	1471	4.96	720
0.20	258	2.11	1502	1.06	1467	4.29	720
0.25	200	1.81	1499	0.89	1463	3.74	720
0.30	156	1.57	1497	0.75	1459	3.27	720
0.35	122	1.35	1495	0.62	1454	2.86	720
0.40	94.2	1.16	1492	0.51	1450	2.49	720
0.45	72.2	0.98	1489	0.42	1444	2.15	720
0.50	54.5	0.83	1487	0.33	1439	1.84	720
0.55	40.3	0.68	1483	0.26	1431	1.56	720
0.60	28.9	0.55	1479	0.19	1422	1.30	720
0.65	20.0	0.43	1474	0.14	1413	1.05	720
0.70	13.1	0.33	1467	0.09	1397	0.83	720
0.75	8.02	0.23	1458	0.05	1377	0.63	720

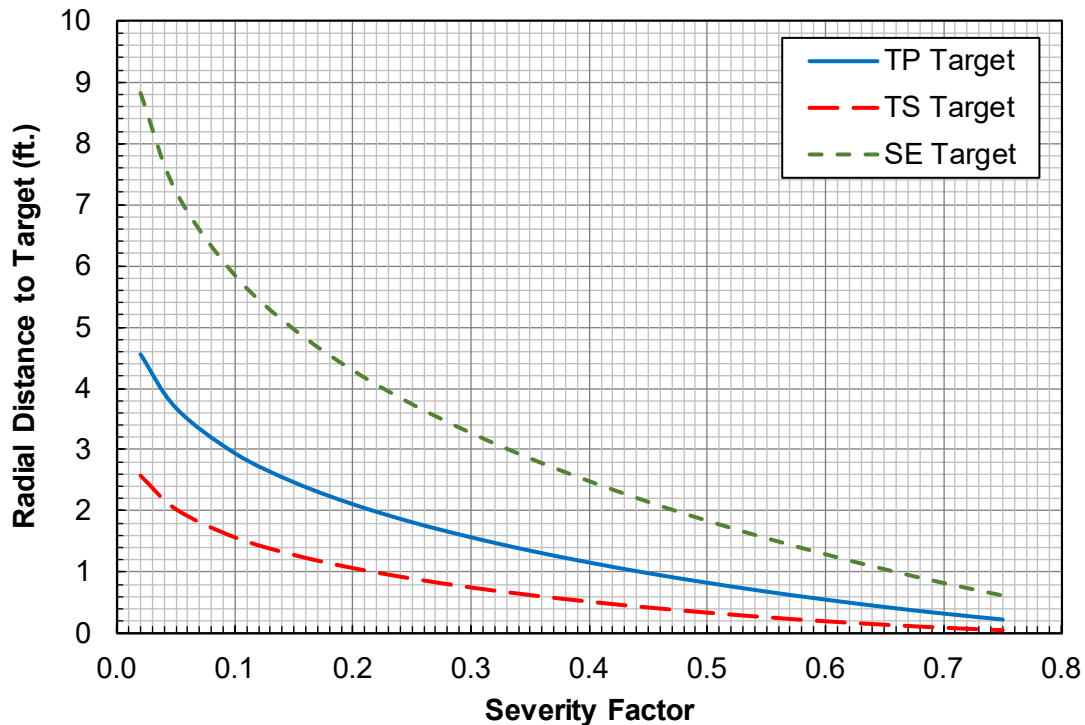


Figure E.13: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Open Group 4a Electrical Enclosures (Large Enclosures: > 50 ft³)

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	200	1.81	1500	0.89	1463	3.74	720
0.05	143	1.49	1497	0.70	1457	3.12	720
0.10	101	1.21	1493	0.54	1451	2.58	720
0.15	77.7	1.03	1491	0.44	1446	2.24	720
0.20	61.8	0.90	1488	0.37	1441	1.98	720
0.25	50.0	0.78	1485	0.31	1436	1.76	720
0.30	40.8	0.69	1483	0.26	1432	1.57	720
0.35	33.3	0.61	1481	0.22	1427	1.40	720
0.40	27.2	0.53	1478	0.18	1421	1.25	720
0.45	22.0	0.46	1475	0.15	1416	1.11	719
0.50	17.6	0.40	1472	0.12	1409	0.98	720
0.55	13.9	0.34	1468	0.09	1399	0.86	720
0.60	10.8	0.29	1465	0.07	1389	0.74	719
0.65	8.16	0.23	1460	0.05	1380	0.63	720
0.70	5.94	0.19	1455	0.03	60	0.52	719
0.75	4.11	0.14	1446	0.03	60	0.42	720

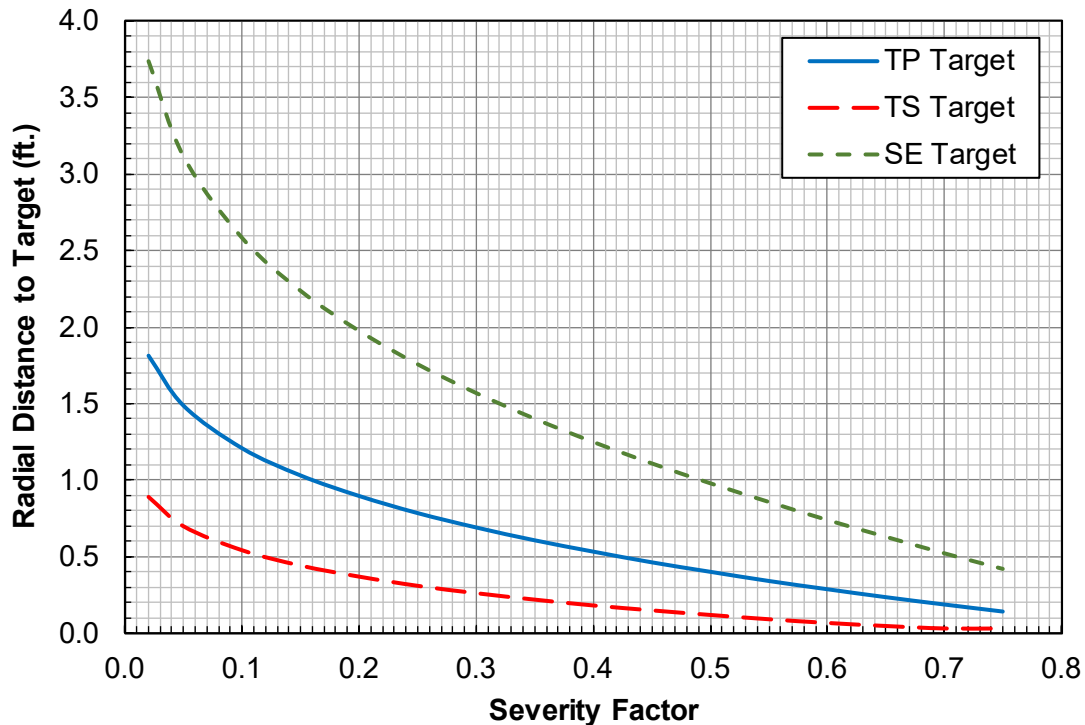


Figure E.14: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Closed Group 4b Electrical Enclosures (Medium Enclosures: > 12 ft³ and ≤ 50 ft³)

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	325	2.40	1503	1.24	1471	4.85	720
0.05	231	1.97	1501	0.98	1465	4.04	720
0.10	163	1.61	1498	0.77	1460	3.35	720
0.15	125	1.37	1495	0.63	1455	2.90	720
0.20	99.2	1.19	1493	0.53	1451	2.56	720
0.25	80.0	1.05	1491	0.45	1446	2.28	720
0.30	65.0	0.92	1488	0.38	1442	2.03	720
0.35	52.9	0.81	1486	0.33	1438	1.81	720
0.40	43.0	0.71	1483	0.27	1433	1.62	720
0.45	34.7	0.62	1481	0.23	1428	1.44	720
0.50	27.7	0.54	1478	0.19	1422	1.27	720
0.55	21.8	0.46	1475	0.15	1415	1.11	720
0.60	16.8	0.39	1471	0.11	1408	0.96	720
0.65	12.6	0.32	1467	0.08	1395	0.81	720
0.70	9.12	0.25	1462	0.06	1385	0.67	720
0.75	6.26	0.19	1454	0.03	60	0.54	719

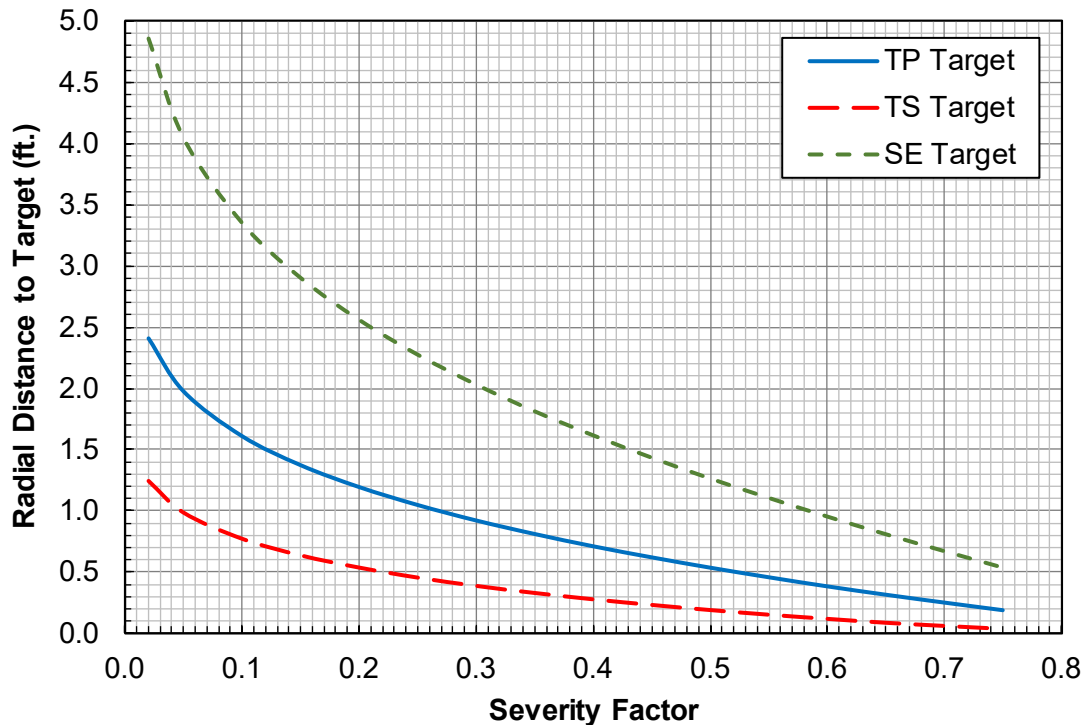


Figure E.15: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Open Group 4b Electrical Enclosures (Medium Enclosures: > 12 ft³ and ≤ 50 ft³)

SF	HRR (kW)	Horizontal					
		TP		TS		SE	
		ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)	ZOI (ft)	t _{dam} (s)
0.02	45.1	0.73	1484	0.28	1433	1.66	720
0.05	34.1	0.62	1481	0.22	1428	1.42	720
0.10	25.8	0.51	1477	0.17	1420	1.22	720
0.15	21.0	0.45	1474	0.14	1413	1.08	720
0.20	17.6	0.40	1472	0.12	1409	0.98	720
0.25	15.0	0.36	1469	0.10	1402	0.90	720
0.30	12.9	0.32	1466	0.09	1399	0.82	719
0.35	11.1	0.29	1465	0.07	1393	0.76	720
0.40	9.6	0.26	1461	0.06	1387	0.69	719
0.45	8.29	0.24	1459	0.05	1378	0.64	719
0.50	7.10	0.21	1458	0.04	1370	0.58	719
0.55	6.04	0.19	1454	0.03	60	0.53	720
0.60	5.09	0.16	1449	0.03	60	0.48	719
0.65	4.22	0.14	1446	0.03	60	0.43	719
0.70	3.42	0.12	1444	0.03	60	0.38	720
0.75	2.70	0.10	1437	0.03	60	0.33	717

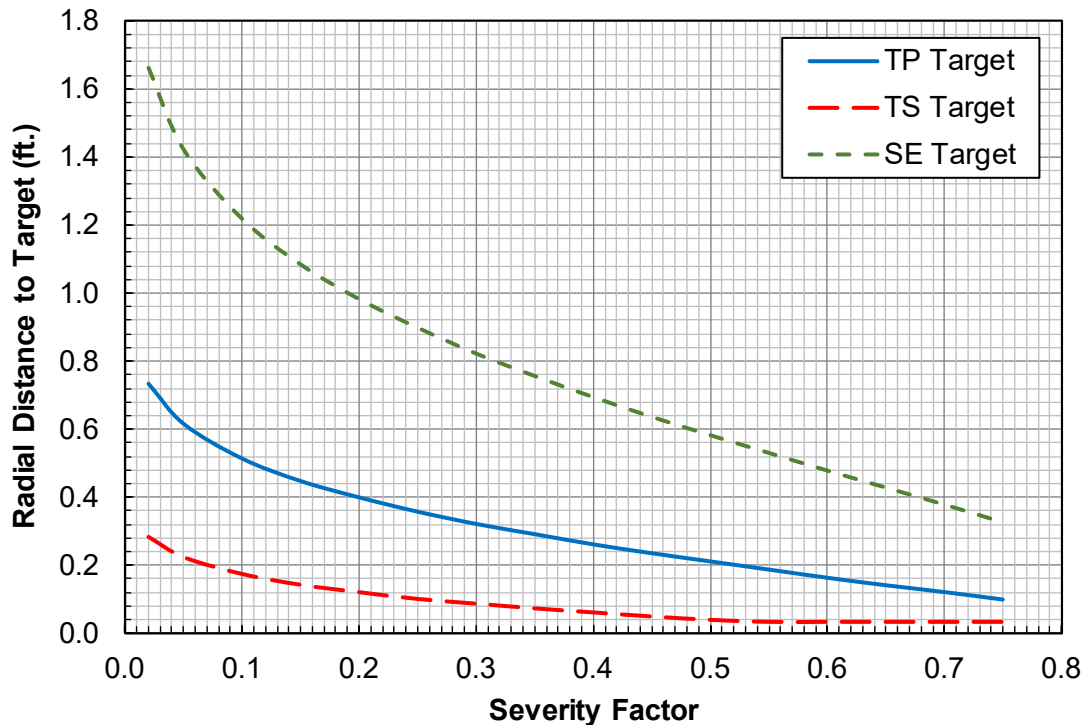


Figure E.16: Radial ZOI and Corresponding Damage Time vs. Severity Factor for Group 4c Electrical Enclosures (Small Enclosures: $\leq 12 \text{ ft}^3$)

TABLE/PLOT SET F
DETECTOR ACTUATION AND SPRINKLER ACTIVATION TIMES

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Table/Plot Set F: Overview and Assumptions

Table/Plot set F consists of three subsets of tables:

- Tables to determine smoke detector actuation time as a function of the ceiling height above the fire and the radial distance between the detector and the fire (Step 2.7.2).
- Tables to determine sprinkler activation time for fixed and transient ignition source fires as a function of the ceiling height above the fire and the radial distance between the sprinkler head and the fire (Step 2.7.3).
- Tables to **estimate** sprinkler activation time for fires with **an** unknown HRR profile as a function of the ceiling height above the fire and the radial distance between the sprinkler head and the fire (Step 2.7.3).

The assumptions and background for the calculations performed to develop the tables in set F are discussed in Section 06.03.06 of IMC 0308, Attachment 3, Appendix F. The primary assumptions are as follows:

- a. To determine **actuation** time, smoke detectors are modeled as sprinkler heads with a **response time index (RTI)** of $5 \text{ (m}\cdot\text{s)}^{0.5}$ and an activation temperature 9°F above ambient (86°F). The assumed RTI and activation temperature are identical to those that are used in the sample FDT 11 calculations in NUREG-1805.
- b. For the sprinkler activation calculations, sprinkler heads were assumed to have an activation temperature of 165°F and an RTI of $130 \text{ (m}\cdot\text{s)}^{0.5}$. These values were used in the fire modeling supporting the LAR of several plants transitioning to NFPA 805.

H (ft.)	Minimum HRR for Detector Actuation in kW as a Function of Radial Distance R in ft.															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	2	2	3	5	6	8	9	11	12	14	15	16	18	19	21	22
6	3	3	4	6	8	10	12	14	16	18	20	22	23	25	27	29
7	4	4	5	8	10	13	15	17	20	22	25	27	29	32	34	37
8	5	5	6	9	12	15	18	21	24	27	30	33	36	39	42	45
9	6	6	8	11	15	18	22	25	29	32	36	39	43	46	50	53
10	8	8	9	13	17	21	25	29	33	37	42	46	50	54	58	62
11	10	10	10	15	19	24	29	34	38	43	48	53	57	62	67	72
12	12	12	12	17	22	28	33	38	44	49	55	60	65	71	76	82
13	15	15	15	19	25	31	37	43	49	55	61	68	74	80	86	92
14	18	18	18	21	28	35	41	48	55	62	69	75	82	89	96	103
15	21	21	21	23	31	38	46	53	61	68	76	84	91	99	106	114
16	24	24	24	25	34	42	50	59	67	75	84	92	100	109	117	125
17	28	28	28	28	37	46	55	64	73	82	92	101	110	119	128	137
18	33	33	33	33	40	50	60	70	80	90	100	110	120	130	139	149
19	37	37	37	37	44	54	65	76	87	97	108	119	130	140	151	162
20	42	42	42	42	47	59	70	82	94	105	117	128	140	152	163	175
21	48	48	48	48	51	63	76	88	101	113	126	138	151	163	176	188
22	53	53	53	53	54	68	81	94	108	121	135	148	161	175	188	202
23	60	60	60	60	60	72	87	101	115	130	144	158	173	187	201	216
24	66	66	66	66	66	77	92	107	123	138	153	169	184	199	214	230
25	73	73	73	73	73	82	98	114	130	147	163	179	195	212	228	244
26	81	81	81	81	81	87	104	121	138	156	173	190	207	225	242	259
27	89	89	89	89	89	92	110	128	146	165	183	201	219	238	256	274
28	97	97	97	97	97	97	116	135	155	174	193	212	232	251	270	289
29	106	106	106	106	106	106	122	143	163	183	203	224	244	264	285	305
30	116	116	116	116	116	116	129	150	171	193	214	235	257	278	300	321

Figure F.01: Minimum HRR for Detector Actuation vs. H and R (R Range: 0-15 ft.)

H (ft.)	Minimum HRR for Detector Actuation in kW as a Function of Radial Distance R in ft.														
	R=16	R=17	R=18	R=19	R=20	R=21	R=22	R=23	R=24	R=25	R=26	R=27	R=28	R=29	R=30
5	24	25	27	28	30	31	32	34	35	37	38	40	41	43	44
6	31	33	35	37	39	41	43	44	46	48	50	52	54	56	58
7	39	41	44	46	49	51	53	56	58	61	63	65	68	70	73
8	48	50	53	56	59	62	65	68	71	74	77	80	83	86	89
9	57	60	64	67	71	74	78	81	85	88	92	95	99	102	106
10	66	70	74	79	83	87	91	95	99	103	107	111	116	120	124
11	76	81	86	91	95	100	105	110	114	119	124	129	133	138	143
12	87	92	98	103	109	114	119	125	130	136	141	146	152	157	163
13	98	104	110	116	122	128	135	141	147	153	159	165	171	177	183
14	109	116	123	130	137	143	150	157	164	171	178	184	191	198	205
15	121	129	136	144	152	159	167	174	182	189	197	204	212	219	227
16	134	142	150	159	167	175	184	192	200	208	217	225	233	242	250
17	146	155	164	174	183	192	201	210	219	228	237	246	256	265	274
18	159	169	179	189	199	209	219	229	239	249	259	269	278	288	298
19	173	183	194	205	216	227	237	248	259	270	280	291	302	313	323
20	187	198	210	221	233	245	256	268	280	291	303	314	326	338	349
21	201	213	226	238	251	263	276	288	301	313	326	338	351	363	376
22	215	229	242	255	269	282	296	309	322	336	349	363	376	389	403
23	230	244	259	273	287	302	316	330	345	359	373	388	402	416	431
24	245	260	276	291	306	321	337	352	367	383	398	413	428	444	459
25	260	277	293	309	325	342	358	374	390	407	423	439	455	472	488
26	276	293	311	328	345	362	380	397	414	431	449	466	483	500	517
27	292	310	329	347	365	383	402	420	438	456	475	493	511	529	548
28	309	328	347	366	386	405	424	443	463	482	501	520	540	559	578
29	325	346	366	386	406	427	447	467	488	508	528	549	569	589	609
30	342	364	385	406	428	449	470	492	513	534	556	577	599	620	641

Figure F.02: Minimum HRR for Detector Actuation vs. H and R (R Range: 16-30 ft.)

[illegible]

Figure F.03: HRR Growth Profiles for Class A Motors (SF from 0.02 to 0.35).

[illegible]

Figure F.04: HRR Growth Profiles for Class A Motors (SF from 0.40 to 0.75).

[illegible]

Figure F.05: HRR Growth Profiles for Class B Motors (SF from 0.02 to 0.35).

[illegible]

Heat Release Rate Profiles for Class C Motors															
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30		SF=0.35	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
17	2	19	2	22	2	24	2	26	2	28	2	30	2	32	2
21	3	24	3	27	3	29	3	32	3	34	3	37	3	39	3
24	4	27	4	31	4	34	4	37	4	40	4	42	4	45	4
27	5	31	5	35	5	38	5	41	5	44	5	47	5	50	5
29	6	33	6	38	6	42	6	45	6	48	6	52	6	55	6
32	7	36	7	41	7	45	7	49	7	52	7	56	7	60	7
34	8	39	8	44	8	48	8	52	8	56	8	60	8	64	8
36	9	41	9	47	9	51	9	55	9	59	9	63	9	68	9
38	10	43	10	49	10	54	10	58	10	63	10	67	10	71	10
40	11	45	11	51	11	56	11	61	11	66	11	70	11	75	11
42	12	47	12	54	12	59	12	64	12	68	12	73	12	78	12
43	13	49	13	56	13	61	13	66	13	71	13	76	13	81	13
45	14	51	14	58	14	64	14	69	14	74	14	79	14	84	14
47	15	53	15	60	15	66	15	71	15	77	15	82	15	87	15
48	16	55	16	62	16	68	16	74	16	79	16	85	16	90	16
51	18	56	17	64	17	70	17	76	17	82	17	87	17	93	17
54	20	58	18	66	18	72	18	78	18	84	18	90	18	96	18
56	22	60	19	68	19	74	19	80	19	86	19	92	19	98	19
59	24	61	20	69	20	76	20	82	20	88	20	95	20	101	20
61	26	63	21	71	21	78	21	84	21	91	21	97	21	103	21
64	28	64	22	73	22	80	22	86	22	93	22	99	22	106	22
66	30	67	24	74	23	82	23	88	23	95	23	101	23	108	23
68	32	70	26	76	24	83	24	90	24	97	24	104	24	111	24
70	34	72	28	78	25	85	25	92	25	99	25	106	25	113	25
72	36	75	30	79	26	87	26	94	26	101	26	108	26	115	26
74	38	77	32	81	27	88	27	96	27	103	27	110	27	117	27
77	41	80	34	82	28	90	28	97	28	105	28	112	28	120	28
80	44	82	36	84	29	92	29	99	29	106	29	114	29		
82	47	84	38	85	30	93	30	101	30	108	30	116	30		
85	50	86	40	86	31	95	31	103	31	110	31	118	31		
87	53	89	42	88	32	96	32	104	32	112	32	120	32		
90	56	91	44	90	34	98	33	106	33	114	33				
92	59	93	46	93	36	99	34	107	34	115	34				
95	62	95	48	96	38	101	35	109	35	117	35				
97	65	97	50	98	40	102	36	110	36	119	36				
99	68	99	52	101	42	104	37	112	37	120	37				
101	71	100	54	103	44	105	38	114	38						
103	74	102	56	105	46	106	39	115	39						
105	77	105	59	107	48	108	40	116	40						
107	80	108	62	110	50	109	41	118	41						
110	84	110	65	112	52	110	42	120	42						
113	88	113	68	114	54	113	44								
115	92	115	71	116	56	115	46								
118	96	118	74	118	58	118	48								
120	100	120	77	120	60	120	50								

Figure F.07: HRR Growth Profiles for Class C Motors (SF from 0.02 to 0.35).

[illegible]

Figure F.08: HRR Growth Profiles for Class C Motors (SF from 0.40 to 0.75).

Heat Release Rate Profiles for Generic Transients													
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
52	2	56	2	60	2	63	2	64	2	64	2	63	2
60	3	65	3	70	3	73	3	75	3	74	3	73	3
67	4	73	4	78	4	81	4	83	4	83	4	82	4
73	5	79	5	85	5	88	5	90	5	90	5	89	5
78	6	84	6	90	6	94	6	96	6	96	6	95	6
82	7	89	7	96	7	100	7	102	7	102	7	100	7
87	8	94	8	101	8	105	8	107	8	107	8	105	8
94	10	98	9	105	9	110	9	112	9	112	9	110	9
101	12	102	10	109	10	114	10	117	10	116	10	114	10
107	14	106	11	113	11	118	11	121	11	120	11	119	11
112	16	109	12	117	12	122	12	125	12	124	12	122	12
119	19	116	14	120	13	125	13	128	13	128	13	126	13
126	22	121	16	124	14	129	14	132	14	132	14	130	14
132	25	127	18	127	15	132	15	135	15	135	15	133	15
138	28	132	20	130	16	136	16	139	16	138	16	136	16
145	32	137	22	133	17	139	17	142	17	141	17	139	17
151	36	143	25	136	18	142	18	145	18	144	18	142	18
157	40	149	28	141	20	144	19	148	19	147	19	145	19
163	44	155	31	146	22	147	20	151	20	150	20	148	20
168	48	161	34	151	24	150	21	153	21	153	21	151	21
174	53	166	37	156	26	152	22	156	22	156	22	153	22
180	58	171	40	160	28	155	23	159	23	158	23	156	23
187	64	177	44	164	30	157	24	161	24	161	24	158	24
193	70	182	48	168	32	160	25	164	25	163	25	161	25
199	76	188	52	174	35	162	26	166	26	165	26	163	26
205	82	193	56	179	38	167	28	168	27	168	27	165	27
211	89	198	60	184	41	171	30	171	28	170	28	168	28
57	96	204	65	189	44	175	32	173	29	172	29	170	29
224	104	210	70	194	47	179	34	175	30	174	30	173	30
230	112	215	75	198	50	183	36	177	31	177	31		
236	120	220	80	203	53	187	38	179	32	179	32		
242	129	226	86	207	56	190	40	181	33	181	33		
249	138	232	92	212	60	195	43	183	34	183	34		
254	147	238	98	217	64	200	46	185	35	185	35		
261	157	243	104	222	68	205	49	187	36	187	36		
267	167	248	110	227	72	210	52	189	37	189	37		
273	178	254	117	232	76	214	55	193	39	190	38		
279	189	259	124	236	80	218	58	196	41	192	39		
285	200	265	131	240	84	222	61	200	43	194	40		
291	212	270	138	245	89	226	64	203	45	196	41		
297	224	275	146	251	94	230	67	207	47	197	42		
304	237	281	154	255	99	234	70	210	49				
310	250	286	162	260	104	238	73	213	51				
316	264	292	171	265	109	241	76	218	54				
322	278	298	180	269	114	245	79	222	57				

Figure F.09: HRR Growth Profiles for Generic Transients (SF from 0.02 to 0.30).

Heat Release Rate Profiles for TCCL Transients													
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
62	2	67	2	72	2	74	2	75	2	75	2	74	2
72	3	78	3	83	3	86	3	87	3	87	3	87	3
80	4	87	4	93	4	96	4	97	4	97	4	96	4
87	5	94	5	101	5	104	5	105	5	105	5	105	5
93	6	101	6	108	6	112	6	113	6	113	6	112	6
98	7	107	7	114	7	118	7	119	7	119	7	118	7
103	8	112	8	120	8	124	8	125	8	125	8	124	8
108	9	117	9	125	9	130	9	131	9	131	9	130	9
112	10	122	10	130	10	135	10	136	10	136	10	135	10
116	11	126	11	135	11	140	11	141	11	141	11	140	11
120	12	130	12	139	12	144	12	145	12	146	12	145	12
124	13	134	13	144	13	149	13	150	13	150	13	149	13
127	14	138	14	148	14	153	14	154	14	154	14	153	14
134	16	142	15	151	15	157	15	158	15	158	15	157	15
140	18	145	16	155	16	161	16	162	16	162	16	161	16
145	20	148	17	159	17	164	17	165	17	166	17	164	17
150	22	152	18	162	18	168	18	169	18	169	18	168	18
155	24	155	19	165	19	171	19	172	19	173	19	170	19
160	26	158	20	168	20	174	20	176	20	176	20		
164	28	161	21	171	21	178	21	179	21	179	21		
171	31	163	22	174	22	181	22	182	22	182	22		
177	34	169	24	177	23	184	23	185	23	185	23		
182	37	174	26	180	24	187	24	188	24	188	24		
188	40	179	28	183	25	189	25	191	25	190	25		
193	43	183	30	186	26	192	26	194	26				
198	46	188	32	188	27	195	27	196	27				
204	50	192	34	191	28	198	28	199	28				
210	54	198	37	193	29	200	29	202	29				
215	58	204	40	196	30	203	30	204	30				
221	62	209	43	198	31	205	31	207	31				
226	66	215	46	200	32	208	32	209	32				
231	70	220	49	203	33	210	33	211	33				
236	74	225	52	205	34	212	34						
242	79	229	55	209	36	215	35						
247	84	234	58	214	38	217	36						
252	89	238	61	218	40	219	37						
258	94	243	64	222	42	221	38						
263	99	247	67	226	44	223	39						
268	105	251	70	229	46	225	40						
274	111	256	74	233	48	227	41						
279	117	261	78	236	50	230	42						
285	123	266	82	242	53	232	43						
290	129	271	86	247	56	234	44						
295	136	275	90	251	59								
301	143	281	95	256	62								

Figure F.11: HRR Growth Profiles for TCCL Transients (SF from 0.02 to 0.30).

Heat Release Rate Profiles for Group 1 Electrical Enclosures															
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30		SF=0.35	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
78	2	89	2	102	2	112	2	122	2	131	2	141	2	151	2
96	3	109	3	125	3	137	3	149	3	161	3	173	3	185	3
110	4	126	4	144	4	159	4	172	4	186	4	199	4	214	4
123	5	141	5	161	5	177	5	193	5	208	5	223	5	239	5
135	6	155	6	176	6	194	6	211	6	228	6	244	6	262	6
146	7	167	7	191	7	210	7	228	7	246	7	264	7	283	7
156	8	179	8	204	8	225	8	244	8	263	8	282	8	302	8
175	10	189	9	216	9	238	9	259	9	279	9	299	9	321	9
191	12	200	10	228	10	251	10	273	10	294	10	315	10	338	10
207	14	209	11	239	11	263	11	286	11	308	11	331	11	354	11
221	16	228	13	249	12	275	12	299	12	322	12	346	12	370	12
234	18	244	15	260	13	286	13	311	13	335	13	360	13	385	13
247	20	260	17	269	14	297	14	323	14	348	14	373	14	400	14
265	23	275	19	279	15	307	15	334	15	360	15	386	15	414	15
281	26	289	21	288	16	318	16	345	16	372	16	399	16	427	16
297	29	303	23	306	18	327	17	355	17	383	17	411	17	441	17
312	32	316	25	322	20	337	18	366	18	394	18	423	18	453	18
327	35	328	27	338	22	346	19	376	19	405	19	435	19	466	19
340	38	340	29	353	24	355	20	386	20	416	20	446	20	478	20
353	41	357	32	367	26	364	21	395	21	426	21	457	21	490	21
366	44	373	35	381	28	381	23	404	22	436	22	468	22	501	22
382	48	389	38	394	30	397	25	413	23	446	23	478	23	512	23
398	52	404	41	407	32	412	27	422	24	455	24	489	24	523	24
413	56	419	44	420	34	427	29	431	25	465	25	499	25	534	25
428	60	433	47	432	36	442	31	440	26	500	29	509	26	545	26
442	64	446	50	450	39	456	33	456	28	509	30	518	27	555	27
455	68	459	53	467	42	470	35	472	30	517	31	528	28	565	28
472	73	472	56	483	45	483	37	488	32	526	32	537	29	575	29
488	78	489	60	494	47	496	39	503	34	534	33	546	30	585	30
500	82	505	64	509	50	508	41	517	36	542	34	555	31	595	31
515	87	520	68	524	53	521	43	531	38	550	35	564	32	604	32
529	92	536	72	539	56	532	45	545	40	558	36	573	33	614	33
544	97	550	76	553	59	544	47	559	42	565	37	582	34	623	34
558	102	564	80	567	62	556	49	572	44	573	38	590	35	632	35
574	108	578	84	581	65	572	52	585	46	588	40	598	36	641	36
589	114	592	88	594	68	589	55	597	48	602	42	607	37	650	37
605	120	605	92	607	71	605	58	610	50	616	44	615	38	659	38
620	126	618	96	620	74	620	61	622	52	630	46	623	39	667	39
634	132	631	100	632	77	635	64	634	54	644	48	631	40	676	40
648	138	647	105	644	80	650	67	645	56	657	50	646	42	684	41
662	144	662	110	660	84	664	70	657	58	670	52	662	44	692	42
676	150	677	115	676	88	678	73	673	61	683	54	676	46	701	43
689	156	691	120	691	92	692	76	690	64	695	56	691	48	709	44
705	163	706	125	706	96	706	79	706	67	708	58	705	50	720	45
720	170	720	130	720	100	720	82	720	70	720	60	720	52		

Figure F.13: HRR Growth Profiles for Group 1 Electrical Enclosures (SF from 0.02 to 0.35).

Heat Release Rate Profiles for Group 1 Electrical Enclosures															
SF=0.40		SF=0.45		SF=0.50		SF=0.55		SF=0.60		SF=0.65		SF=0.70		SF=0.75	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
162	2	173	2	186	2	201	2	217	2	237	2	260	2	290	2
198	3	212	3	228	3	246	3	266	3	290	3	319	3	355	3
229	4	245	4	263	4	284	4	307	4	334	4	368	4	410	4
256	5	274	5	294	5	317	5	343	5	374	5	411	5	458	5
280	6	300	6	322	6	347	6	376	6	410	6	450	6	502	6
303	7	324	7	348	7	375	7	406	7	442	7	487	7	542	7
324	8	347	8	372	8	401	8	434	8	473	8	520	8	580	8
343	9	368	9	395	9	425	9	460	9	502	9	552	9	615	9
362	10	388	10	416	10	448	10	485	10	529	10	582	10	648	10
379	11	407	11	437	11	470	11	509	11	555	11	610	11	680	11
396	12	425	12	456	12	491	12	532	12	579	12	637	12	720	12
413	13	442	13	475	13	511	13	553	13	603	13	663	13		
428	14	459	14	493	14	531	14	574	14	626	14	688	14		
443	15	475	15	510	15	549	15	594	15	648	15	720	15		
458	16	490	16	527	16	567	16	614	16	669	16				
472	17	506	17	543	17	585	17	633	17	690	17				
499	19	520	18	559	18	602	18	651	18	710	18				
512	20	534	19	574	19	618	19	669	19	720	19				
528	21	548	20	589	20	634	20	686	20						
544	23	562	21	603	21	650	21	703	21						
559	24	575	22	617	22	665	22	720	22						
574	25	588	23	631	23	680	23								
589	27	601	24	645	24	695	24								
603	28	625	26	658	25	709	25								
617	29	649	28	671	26	720	26								
631	30	672	30	684	27										
644	32	694	32	697	28										
657	33	715	34	709	29										
670	34	736	36	720	30										
683	36	756	38												
695	37	775	40												
707	38	795	42												
719	40	720	34												
731	41														
742	42														
754	43														
765	45														
776	46														
720	40														

Figure F.14: HRR Growth Profiles for Group 1 Electrical Enclosures (SF from 0.40 to 0.75).

Heat Release Rate Profiles for Group 2 Electrical Enclosures															
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30		SF=0.35	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
89	2	101	2	114	2	114	2	135	2	144	2	154	2	163	2
109	3	124	3	140	3	140	3	165	3	176	3	188	3	200	3
126	4	143	4	162	4	162	4	190	4	204	4	217	4	231	4
141	5	160	5	181	5	181	5	213	5	228	5	243	5	258	5
155	6	175	6	198	6	198	6	233	6	250	6	266	6	283	6
167	7	189	7	214	7	214	7	252	7	270	7	287	7	306	7
179	8	202	8	229	8	229	8	269	8	288	8	307	8	327	8
190	9	215	9	242	9	242	9	286	9	306	9	326	9	346	9
200	10	226	10	256	10	256	10	301	10	322	10	343	10	365	10
210	11	237	11	268	11	268	11	316	11	338	11	360	11	383	11
228	13	258	13	280	12	280	12	330	12	353	12	376	12	400	12
245	15	277	15	291	13	291	13	343	13	367	13	392	13	416	13
261	17	295	17	302	14	302	14	356	14	381	14	406	14	432	14
275	19	312	19	313	15	313	15	369	15	395	15	421	15	447	15
290	21	328	21	323	16	323	16	381	16	408	16	434	16	462	16
303	23	343	23	343	18	333	17	393	17	420	17	448	17	476	17
316	25	358	25	361	20	343	18	404	18	432	18	461	18	490	18
328	27	372	27	379	22	352	19	415	19	444	19	473	19	503	19
340	29	385	29	396	24	361	20	426	20	456	20	486	20	517	20
357	32	405	32	412	26	370	21	436	21	467	21	498	21	529	21
374	35	423	35	428	28	388	23	447	22	478	22	509	22	542	22
390	38	441	38	443	30	404	25	457	23	489	23	521	23	554	23
405	41	458	41	457	32	420	27	466	24	499	24	532	24	566	24
419	44	475	44	471	34	435	29	476	25	509	25	543	25	577	25
433	47	491	47	485	36	450	31	486	26	549	29	554	26	589	26
447	50	506	50	505	39	464	33	504	28	558	30	564	27	600	27
460	53	521	53	524	42	478	35	522	30	567	31	575	28	611	28
473	56	536	56	542	45	492	37	539	32	576	32	585	29	622	29
490	60	554	60	554	47	505	39	555	34	585	33	595	30	633	30
506	64	573	64	572	50	518	41	571	36	594	34	605	31	643	31
517	67	590	68	588	53	530	43	587	38	603	35	614	32	653	32
532	71	607	72	605	56	542	45	602	40	611	36	624	33	663	33
547	75	624	76	621	59	554	47	617	42	620	37	633	34	673	34
562	79	640	80	636	62	566	49	632	44	628	38	642	35	683	35
576	83	656	84	652	65	583	52	646	46	644	40	652	36	693	36
589	87	671	88	666	68	599	55	660	48	660	42	661	37	703	37
603	91	686	92	681	71	616	58	673	50	676	44	669	38	712	38
616	95	701	96	695	74	631	61	687	52	691	46	678	39	720	39
632	100	716	100	709	77	647	64	700	54	706	48	687	40		
648	105	733	105	723	80	662	67	713	56	720	50	695	41		
663	110	751	110	741	84	676	70	725	58	735	52	704	42		
678	115	767	115	758	88	691	73	744	61	749	54	712	43		
692	120	784	120	775	92	705	76	762	64	762	56	720	44		
707	125	800	125	792	96	718	79	779	67	776	58				
720	130	720	101	720	79	720	79	720	57	720	50				

Figure F.15: HRR Growth Profiles for Group 2 Electrical Enclosures (SF from 0.02 to 0.35).

Heat Release Rate Profiles for Group 3 Electrical Enclosures															
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30		SF=0.35	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
72	2	85	2	101	2	116	2	129	2	144	2	159	2	176	2
88	3	104	3	124	3	129	3	159	3	176	3	195	3	216	3
102	4	121	4	143	4	143	4	183	4	204	4	225	4	249	4
114	5	135	5	160	5	157	5	205	5	228	5	252	5	279	5
125	6	159	7	175	6	170	6	224	6	249	6	276	6	305	6
144	8	181	9	190	7	184	7	242	7	269	7	298	7	330	7
161	10	200	11	203	8	198	8	259	8	288	8	319	8	353	8
176	12	217	13	215	9	212	9	275	9	305	9	338	9	374	9
190	14	241	16	227	10	225	10	290	10	322	10	356	10	394	10
204	16	263	19	238	11	239	11	304	11	338	11	374	11	414	11
216	18	283	22	248	12	253	12	317	12	353	12	390	12	432	12
233	21	301	25	258	13	267	13	330	13	367	13	406	13	450	13
249	24	319	28	268	14	280	14	343	14	381	14	422	14	467	14
264	27	336	31	277	15	294	15	355	15	394	15	437	15	483	15
279	30	357	35	295	17	308	16	366	16	407	16	451	16	499	16
292	33	376	39	312	19	322	17	377	17	420	17	465	17	514	17
305	36	395	43	328	21	335	18	388	18	432	18	478	18	529	18
322	40	413	47	344	23	349	19	399	19	444	19	491	19	544	19
338	44	435	52	358	25	363	20	409	20	455	20	504	20	558	20
353	48	455	57	372	27	377	21	420	21	466	21	517	21	571	21
367	52	475	62	386	29	390	22	429	22	477	22	529	22	585	22
381	56	493	67	399	31	404	24	439	23	488	23	541	23	598	23
394	60	512	72	412	33	418	26	449	24	499	24	552	24	611	24
410	65	532	78	424	35	431	28	458	25	509	25	564	25	624	25
426	70	552	84	436	37	445	30	467	26	519	26	575	26	636	26
441	75	572	90	447	39	459	32	476	27	529	27	586	27	648	27
455	80	591	96	464	42	473	34	484	28	539	28	596	28	660	28
469	85	609	102	481	45	486	36	493	29	548	29	607	29	672	29
483	90	629	109	496	48	500	38	501	30	557	30	617	30	683	30
499	96	649	116	512	51	514	40	518	32	567	31	628	31	694	31
514	102	669	123	526	54	528	42	534	34	576	32	638	32	705	32
529	108	687	130	541	57	541	44	549	36	585	33	647	33	720	33
543	114	706	137	555	60	555	46	564	38	593	34	657	34		
558	120	726	145	569	63	569	48	579	40	602	35	667	35		
571	126	746	153	582	66	583	50	593	42	611	36	676	36		
587	133	765	161	595	69	596	52	607	44	619	37	686	37		
602	140	784	169	608	72	610	54	621	46	627	38	695	38		
617	147	802	177	620	75	624	57	634	48	636	39	704	39		
632	154	822	186	633	78	638	60	647	50	644	40	713	40		
646	161	842	195	649	82	651	63	660	52	652	41	720	41		
660	168	861	204	661	85	665	66	673	54	660	42				
675	176	880	213	676	89	679	69	685	56	675	44				
690	184	900	223	691	93	693	72	697	58	690	46				
705	192	920	233	706	97	706	75	709	60	705	48				
720	200	720	143	720	101	720	78	720	62	720	50				

Figure F.17: HRR Growth Profiles for Group 3 Electrical Enclosures (SF from 0.02 to 0.35).

Heat Release Rate Profiles for Group 4a Closed Large Electrical Enclosures															
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30		SF=0.35	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
51	2	60	2	72	2	82	2	92	2	102	2	113	2	125	2
66	3	75	3	86	3	96	3	106	3	116	3	127	3	138	2
81	5	90	4	101	4	111	4	120	3	130	3	140	3	152	3
97	7	105	6	116	5	125	5	134	4	144	4	154	4	165	4
112	10	120	8	131	7	140	6	149	5	158	5	168	4	179	4
127	12	135	10	145	8	154	7	163	6	172	6	182	5	192	5
142	16	150	12	160	10	169	9	177	7	186	7	196	6	206	5
157	19	165	15	175	12	183	10	192	9	200	8	209	7	219	6
173	23	180	18	190	14	198	12	206	10	214	9	223	8	233	7
188	27	195	21	204	16	212	14	220	12	228	10	237	9	246	8
203	32	210	24	219	19	227	15	234	13	242	11	251	10	260	9
218	37	225	28	234	21	241	17	249	15	256	13	265	11	274	10
233	42	240	32	248	24	256	20	263	16	270	14	278	12	287	11
249	48	255	36	263	27	270	22	277	18	284	16	292	13	301	12
264	54	270	40	278	30	285	24	292	20	298	17	306	15	314	13
279	60	285	45	293	33	299	27	306	22	313	19	320	16	328	14
294	67	300	50	307	37	314	30	320	24	327	21	334	18	341	15
309	74	315	55	322	40	328	32	334	27	341	22	347	19	355	16
325	81	330	60	337	44	343	35	349	29	355	24	361	21	368	17
340	89	345	66	352	48	357	38	363	31	369	26	375	22	382	19
355	97	360	71	366	52	372	41	377	34	383	28	389	24	395	20
370	106	375	77	381	57	386	45	391	37	397	30	403	26	409	21
385	115	390	84	396	61	401	48	406	39	411	33	416	27	422	23
401	124	405	90	411	66	415	52	420	42	425	35	430	29	436	24
416	134	420	97	425	70	430	55	434	45	439	37	444	31	449	26
431	143	435	104	440	75	444	59	449	48	453	40	458	33	463	28
446	154	450	112	455	81	459	63	463	51	467	42	472	35	476	29
461	164	465	119	469	86	473	67	477	54	481	45	485	37	490	31
477	175	480	127	484	91	488	71	491	58	495	47	499	39	504	33
492	187	495	135	499	97	502	76	506	61	509	50	513	41	517	34
507	199	510	143	514	103	517	80	520	65	523	53	527	44	531	36
522	211	525	152	528	109	531	85	534	68	537	56	541	46	544	38
538	223	540	161	543	115	546	89	549	72	551	59	554	48	558	40
553	236	555	170	558	121	560	94	563	76	565	62	568	51	571	42
568	249	570	179	573	128	575	99	577	79	579	65	582	53	585	44
583	263	585	188	587	134	589	104	591	83	594	68	596	56	598	46
598	276	600	198	602	141	604	109	606	88	608	71	610	58	612	48
614	291	615	208	617	148	618	115	620	92	622	75	623	61	625	50
629	305	630	218	632	155	633	120	634	96	636	78	637	64	639	52
644	320	645	229	646	163	647	126	649	100	650	82	651	67	652	55
659	335	660	240	661	170	662	131	663	105	664	85	665	70	666	57
674	351	675	251	676	178	676	137	677	109	678	89	679	72	679	59
690	367	690	262	691	186	691	143	691	114	692	92	692	75	693	62
705	383	705	274	705	194	705	149	706	119	706	96	706	79	706	64
720	400	720	285	720	202	720	155	720	124	720	100	720	82	720	67

Figure F.19: HRR Growth Profiles for Group 4a Closed Enclosures
(SF from 0.02 to 0.35).

Heat Release Rate Profiles for Group 4a Close Large Electrical Enclosures															
SF=0.40		SF=0.45		SF=0.50		SF=0.55		SF=0.60		SF=0.65		SF=0.70		SF=0.75	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
138	2	154	2	171	2	193	2	219	2	252	2	295	2	355	2
151	2	188	3	210	3	236	3	268	3	309	3	362	3	496	3
165	3	217	4	242	4	273	4	310	4	356	4	418	4	551	4
178	3	243	5	271	5	305	5	346	5	398	5	467	5	599	5
191	4	266	6	297	6	334	6	379	6	436	6	511	6	641	6
204	4	287	7	321	7	361	7	410	7	471	7	552	7	678	7
217	5	307	8	343	8	386	8	438	8	504	8	591	8	720	8
231	6	326	9	364	9	409	9	464	9	535	9	626	9		
244	6	343	10	383	10	431	10	490	10	563	10	660	10		
257	7	360	11	402	11	452	11	514	11	591	11	693	11		
270	8	376	12	420	12	472	12	536	12	617	12	720	12		
284	8	391	13	437	13	492	13	558	13	642	13				
297	9	406	14	454	14	510	14	579	14	667	14				
310	10	420	15	469	15	528	15	600	15	690	15				
323	11	434	16	485	16	545	16	619	16	720	16				
337	12	448	17	500	17	562	17	638	17						
350	13	461	18	514	18	578	18	657	18						
363	14	473	19	528	19	594	19	675	19						
376	15	485	20	542	20	610	20	692	20						
389	16	497	21	555	21	625	21	710	21						
403	17	509	22	569	22	639	22	720	22						
416	18	521	23	581	23	654	23								
429	19	532	24	594	24	668	24								
442	21	543	25	606	25	682	25								
456	22	553	26	618	26	695	26								
469	23	564	27	630	27	708	27								
482	24	574	28	641	28	720	28								
495	26	585	29	653	29										
508	27	595	30	664	30										
522	29	604	31	675	31										
535	30	614	32	686	32										
548	31	624	33	696	33										
561	33	633	34	707	34										
575	35	642	35	720	35										
588	36	651	36												
601	38	660	37												
614	40	669	38												
627	41	678	39												
641	43	686	40												
654	45	695	41												
667	47	703	42												
680	49	712	43												
694	50	720	44												
707	52														
720	54														

Figure F.20: HRR Growth Profiles for Group 4a Closed Enclosures
(SF from 0.40 to 0.75).

Heat Release Rate Profiles for Group 4a Open Electrical Enclosures															
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30		SF=0.35	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
32	2	39	2	47	2	55	2	63	2	72	2	81	2	92	2
48	4	54	4	63	3	70	3	78	3	87	3	96	3	107	3
63	8	70	6	78	5	86	5	93	4	101	4	111	4	121	3
79	12	85	10	93	8	101	7	108	6	116	5	125	5	135	4
95	17	101	13	109	10	116	9	123	8	131	7	140	6	149	5
110	24	116	18	124	14	131	11	138	9	146	8	154	7	164	6
126	31	132	23	139	17	146	14	153	12	160	10	169	9	178	7
142	39	147	29	154	21	161	17	168	14	175	12	183	10	192	9
157	48	163	35	170	26	176	20	183	17	190	14	198	12	206	10
173	58	178	42	185	30	191	24	198	19	205	16	212	14	221	11
189	69	194	50	200	36	206	28	213	23	219	19	227	15	235	13
204	80	209	58	216	41	221	32	228	26	234	21	241	18	249	15
220	93	225	67	231	47	237	37	242	29	249	24	256	20	264	16
235	107	240	76	246	54	252	41	257	33	263	27	270	22	278	18
251	122	256	86	261	61	267	47	272	37	278	30	285	24	292	20
267	137	271	97	277	68	282	52	287	41	293	33	299	27	306	22
282	154	287	108	292	76	297	58	302	45	308	37	314	30	321	24
298	171	302	120	307	84	312	64	317	50	322	40	328	32	335	26
314	190	318	133	323	92	327	70	332	55	337	44	343	35	349	29
329	209	333	146	338	101	342	77	347	60	352	48	357	38	363	31
345	229	349	160	353	111	357	84	362	65	367	52	372	42	378	33
360	251	364	175	368	121	373	91	377	71	381	56	386	45	392	36
376	273	379	190	384	131	388	98	392	76	396	61	401	48	406	39
392	296	395	206	399	141	403	106	407	82	411	65	415	52	420	41
407	320	410	222	414	152	418	114	422	89	425	70	430	56	435	44
423	345	426	239	430	164	433	123	436	95	440	75	444	59	449	47
439	371	441	257	445	176	448	131	451	102	455	80	459	63	463	50
454	398	457	275	460	188	463	140	466	108	470	85	473	67	477	54
470	426	472	294	475	201	478	150	481	115	484	91	488	72	492	57
486	455	488	314	491	214	493	159	496	123	499	96	502	76	506	60
501	485	503	334	506	227	509	169	511	130	514	102	517	80	520	64
517	515	519	355	521	241	524	179	526	138	529	108	531	85	535	67
532	547	534	377	537	256	539	190	541	146	543	114	546	90	549	71
548	580	550	399	552	270	554	200	556	154	558	120	560	95	563	74
564	613	565	422	567	286	569	212	571	162	573	127	575	100	577	78
579	648	581	445	582	301	584	223	586	171	587	133	589	105	592	82
595	683	596	469	598	317	599	235	601	180	602	140	604	110	606	86
611	719	612	494	613	334	614	247	616	189	617	147	618	115	620	90
626	757	627	519	628	351	629	259	630	198	632	154	633	121	634	94
642	795	643	545	644	368	644	271	645	208	646	161	647	126	649	99
657	834	658	571	659	385	660	284	660	217	661	169	662	132	663	103
673	874	674	599	674	404	675	298	675	227	676	176	676	138	677	108
689	915	689	626	689	422	690	311	690	237	691	184	691	144	691	112
704	957	705	655	705	441	705	325	705	248	705	192	705	150	706	117
720	1000	720	684	720	460	720	339	720	258	720	200	720	156	720	122

Figure F.21: HRR Growth Profiles for Group 4a Open Enclosures
(SF from 0.02 to 0.35).

Heat Release Rate Profiles for Group 4a Open Electrical Enclosures															
SF=0.40		SF=0.45		SF=0.50		SF=0.55		SF=0.60		SF=0.65		SF=0.70		SF=0.75	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
105	2	120	2	138	2	160	2	189	2	228	2	281	2	360	2
119	3	133	2	151	2	197	3	232	3	279	3	344	3	501	3
133	3	147	3	164	3	227	4	268	4	322	4	397	4	557	4
147	4	161	4	178	3	254	5	299	5	360	5	444	5	605	5
161	5	174	4	191	4	278	6	328	6	394	6	487	6	647	6
175	6	188	5	204	4	300	7	354	7	426	7	526	7	685	7
189	6	202	6	217	5	321	8	379	8	456	8	562	8	720	8
203	7	215	6	231	6	340	9	402	9	483	9	596	9		
217	9	229	7	244	6	359	10	423	10	509	10	628	10		
231	10	243	8	257	7	376	11	444	11	534	11	659	11		
245	11	256	9	270	8	393	12	464	12	558	12	688	12		
259	12	270	10	283	8	409	13	483	13	581	13	720	13		
273	14	284	11	297	9	425	14	501	14	603	14				
287	15	297	12	310	10	439	15	519	15	624	15				
301	16	311	13	323	11	454	16	536	16	644	16				
315	18	324	15	336	12	468	17	552	17	664	17				
329	20	338	16	350	13	481	18	568	18	683	18				
343	21	352	17	363	14	495	19	584	19	702	19				
357	23	365	19	376	15	507	20	599	20	720	20				
371	25	379	20	389	16	520	21	614	21						
384	27	393	21	403	17	532	22	628	22						
398	29	406	23	416	18	544	23	642	23						
412	31	420	25	429	19	556	24	656	24						
426	33	434	26	442	21	567	25	670	25						
440	35	447	28	455	22	579	26	683	26						
454	38	461	30	469	23	590	27	696	27						
468	40	474	31	482	24	600	28	709	28						
482	42	488	33	495	26	611	29	720	29						
496	45	502	35	508	27	622	30								
510	47	515	37	522	29	632	31								
524	50	529	39	535	30	642	32								
538	53	543	41	548	32	652	33								
552	55	556	43	561	33	662	34								
566	58	570	45	574	35	671	35								
580	61	584	47	588	36	681	36								
594	64	597	50	601	38	690	37								
608	67	611	52	614	40	699	38								
622	70	625	54	627	41	709	39								
636	74	638	57	641	43	720	40								
650	77	652	59	654	45										
664	80	665	62	667	47										
678	84	679	64	680	49										
692	87	693	67	694	51										
706	91	706	70	707	53										
720	94	720	72	720	55										

Figure F.22: HRR Growth Profiles for Group 4a Open Enclosures
(SF from 0.40 to 0.75).

Heat Release Rate Profiles for Group 4b Closed Electrical Enclosures															
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30		SF=0.35	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
72	2	85	2	101	2	116	2	129	2	144	2	159	2	176	2
88	3	104	3	124	3	141	3	159	3	176	3	195	3	216	3
102	4	121	4	143	4	163	4	183	4	204	4	225	4	249	4
114	5	135	5	160	5	183	5	205	5	228	5	252	5	279	5
125	6	148	6	175	6	200	6	224	6	249	6	276	6	305	6
144	8	159	7	190	7	216	7	242	7	269	7	298	7	330	7
161	10	171	8	203	8	231	8	259	8	288	8	319	8	353	8
176	12	181	9	215	9	245	9	275	9	305	9	338	9	374	9
190	14	191	10	227	10	258	10	290	10	322	10	356	10	394	10
204	16	209	12	238	11	271	11	304	11	338	11	374	11	414	11
216	18	226	14	248	12	283	12	317	12	353	12	390	12	432	12
233	21	241	16	258	13	294	13	330	13	367	13	406	13	450	13
249	24	256	18	268	14	306	14	343	14	381	14	421	14	466	14
264	27	270	20	277	15	316	15	355	15	394	15	437	15	483	15
279	30	283	22	295	17	327	16	366	16	407	16	451	16	499	16
292	33	301	25	312	19	337	17	377	17	420	17	465	17	514	17
305	36	313	27	328	21	347	18	388	18	432	18	478	18	529	18
322	40	330	30	344	23	356	19	399	19	444	19	491	19	544	19
338	44	346	33	358	25	365	20	409	20	455	20	504	20	558	20
353	48	362	36	372	27	374	21	420	21	466	21	517	21	571	21
367	52	376	39	386	29	392	23	429	22	477	22	529	22	585	22
381	56	391	42	399	31	408	25	439	23	488	23	541	23	598	23
394	60	404	45	412	33	416	26	449	24	499	24	552	24	611	24
410	65	418	48	424	35	432	28	458	25	509	25	564	25	624	25
426	70	431	51	436	37	447	30	467	26	519	26	575	26	636	26
441	75	443	54	447	39	462	32	476	27	529	27	586	27	648	27
455	80	459	58	464	42	476	34	484	28	539	28	596	28	660	28
469	85	475	62	481	45	490	36	493	29	548	29	607	29	672	29
483	90	490	66	496	48	504	38	501	30	557	30	617	30	683	30
499	96	504	70	512	51	517	40	518	32	567	31	628	31	694	31
514	102	519	74	526	54	529	42	534	34	576	32	638	32	705	32
529	108	532	78	541	57	542	44	549	36	585	33	647	33	720	33
543	114	546	82	555	60	554	46	564	38	593	34	657	34		
558	120	559	86	569	63	566	48	579	40	602	35	667	35		
571	126	575	91	582	66	578	50	593	42	611	36	676	36		
587	133	591	96	595	69	589	52	607	44	619	37	686	37		
602	140	606	101	608	72	600	54	621	46	627	38	695	38		
617	147	621	106	620	75	617	57	634	48	636	39	704	39		
632	154	635	111	633	78	633	60	647	50	644	40	713	40		
646	161	649	116	645	81	648	63	660	52	652	41	720	41		
660	168	663	121	661	85	664	66	673	54	660	42				
675	176	677	126	676	89	678	69	685	56	675	44				
690	184	690	131	691	93	693	72	697	58	690	46				
705	192	706	137	706	97	707	75	709	60	705	48				
720	200	720	143	720	101	720	78	720	62	720	50				

Figure F.23: HRR Growth Profiles for Group 4b Closed Enclosures
(SF from 0.02 to 0.35).

[illegible]

Figure F.24: HRR Growth Profiles for Group 4b Closed Enclosures (SF from 0.40 to 0.75).

Heat Release Rate Profiles for Group 4b Open Medium Electrical Enclosures															
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30		SF=0.35	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
56	2	67	2	80	2	91	2	102	2	114	2	126	2	140	2
69	3	82	3	98	3	112	3	125	3	139	3	155	3	153	3
80	4	95	4	113	4	129	4	145	4	161	4	179	4	166	4
98	6	106	5	126	5	144	5	162	5	180	5	200	5	180	5
113	8	125	7	138	6	158	6	177	6	197	6	219	6	193	6
132	11	142	9	149	7	170	7	191	7	213	7	236	7	206	7
149	14	157	11	160	8	182	8	205	8	228	8	253	8	219	8
165	17	171	13	178	10	193	9	217	9	242	9	268	9	232	9
179	20	183	15	195	12	204	10	229	10	255	10	282	10	245	10
192	23	201	18	211	14	214	11	240	11	267	11	296	11	259	11
208	27	217	21	226	16	232	13	250	12	279	12	309	12	272	12
222	31	232	24	239	18	249	15	261	13	290	13	322	13	285	13
236	35	246	27	252	20	266	17	271	14	301	14	334	14	298	14
253	40	259	30	265	22	281	19	280	15	312	15	346	15	311	15
268	45	272	33	282	25	295	21	289	16	322	16	357	16	325	16
282	50	288	37	298	28	309	23	307	18	332	17	368	17	338	17
296	55	303	41	314	31	322	25	323	20	342	18	379	18	351	18
312	61	318	45	329	34	335	27	339	22	351	19	389	19	364	19
327	67	332	49	343	37	347	29	354	24	360	20	399	20	377	20
341	73	348	54	357	40	359	31	369	26	369	21	409	21	390	21
357	80	364	59	370	43	376	34	383	28	386	23	419	22	404	22
373	87	379	64	383	46	392	37	396	30	403	25	428	23	417	23
387	94	394	69	399	50	407	40	409	32	418	27	437	24	430	24
403	102	408	74	414	54	422	43	422	34	434	29	446	25	443	25
419	110	421	79	430	58	437	46	434	36	448	31	455	26	456	26
434	118	437	85	444	62	451	49	446	38	462	33	464	27	470	27
448	126	452	91	458	66	464	52	463	41	476	35	473	28	483	28
464	135	467	97	472	70	478	55	480	44	490	37	481	29	496	29
479	144	481	103	485	74	491	58	496	47	503	39	497	31	509	26
494	153	497	110	501	79	503	61	511	50	515	41	513	33	522	30
508	162	512	117	517	84	519	65	526	53	528	43	528	35	535	31
524	172	528	124	532	89	535	69	541	56	540	45	543	37	549	32
539	182	542	131	547	94	550	73	555	59	552	47	558	39	562	32
553	192	556	138	561	99	565	77	569	62	564	49	572	41	575	33
569	203	570	145	575	104	580	81	583	65	575	51	586	43	588	34
584	214	586	153	589	109	594	85	596	68	586	53	599	45	601	35
599	225	601	161	602	114	608	89	609	71	602	56	612	47	615	39
614	236	616	169	618	120	621	93	622	74	618	59	625	49	628	40
629	248	630	177	633	126	634	97	634	77	634	62	638	51	641	41
644	260	644	185	648	132	647	101	647	80	649	65	650	53	654	43
659	272	660	194	663	138	660	105	659	83	664	68	662	55	667	45
674	285	675	203	677	144	676	110	674	87	678	71	674	57	680	47
689	298	690	212	691	150	691	115	690	91	693	74	686	59	694	49
704	311	704	221	705	156	706	120	705	95	706	77	703	62	707	51
720	325	720	231	720	163	720	125	720	99	720	80	720	65	720	53

Figure F.25: HRR Growth Profiles for Group 4b Open Enclosures
(SF from 0.02 to 0.35).

Heat Release Rate Profiles for Group 4b Open Medium Electrical Enclosures															
SF=0.40		SF=0.45		SF=0.50		SF=0.55		SF=0.60		SF=0.65		SF=0.70		SF=0.75	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
155	2	173	2	193	2	218	2	248	2	287	2	337	2	407	2
190	3	212	3	237	3	267	3	304	3	351	3	413	3	498	3
220	4	245	4	274	4	308	4	351	4	405	4	477	4	576	4
246	5	273	5	306	5	345	5	393	5	453	5	533	5	644	5
269	6	299	6	335	6	378	6	430	6	497	6	584	6	720	6
291	7	323	7	362	7	408	7	465	7	536	7	631	7		
311	8	346	8	387	8	436	8	497	8	573	8	674	8		
329	9	367	9	410	9	463	9	527	9	608	9	720	9		
347	10	387	10	433	10	488	10	555	10	641	10				
364	11	405	11	454	11	512	11	582	11	672	11				
380	12	424	12	474	12	534	12	608	12	702	12				
396	13	441	13	493	13	556	13	633	13	720	13				
411	14	457	14	512	14	577	14	657	14						
425	15	473	15	530	15	597	15	680	15						
439	16	489	16	547	16	617	16	702	16						
453	17	504	17	564	17	636	17	720	17						
466	18	519	18	580	18	654	18								
479	19	533	19	596	19	672	19								
491	20	547	20	612	20	690	20								
503	21	560	21	627	21	707	21								
515	22	573	22	642	22	720	22								
527	23	586	23	656	23										
538	24	599	24	670	24										
549	25	611	25	684	25										
560	26	623	26	698	26										
571	27	635	27	711	27										
581	28	647	28	720	28										
591	29	658	29												
601	30	670	30												
611	31	681	31												
621	32	692	32												
631	33	702	33												
640	34	713	34												
650	35	720	35												
659	36														
668	37														
677	38														
686	39														
695	40														
703	41														
712	42														
720	43														

Figure F.26: HRR Growth Profiles for Group 4b Open Enclosures
(SF from 0.40 to 0.75).

Heat Release Rate Profiles for Group 4c Small Electrical Enclosures															
SF=0.02		SF=0.05		SF=0.10		SF=0.15		SF=0.20		SF=0.25		SF=0.30		SF=0.35	
Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)	Time (s)	HRR (kW)
152	2	174	2	200	2	222	2	242	2	263	2	283	2	305	2
186	3	214	3	245	3	272	3	297	3	322	3	347	3	374	3
214	4	247	4	283	4	314	4	343	4	371	4	401	4	431	4
240	5	276	5	317	5	351	5	383	5	415	5	448	5	482	5
263	6	302	6	347	6	385	6	420	6	455	6	491	6	528	6
284	7	326	7	375	7	416	7	454	7	491	7	530	7	571	7
303	8	349	8	401	8	444	8	485	8	525	8	567	8	610	8
322	9	370	9	425	9	471	9	514	9	557	9	601	9	647	9
339	10	390	10	448	10	497	10	542	10	587	10	633	10	682	10
356	11	409	11	470	11	521	11	569	11	616	11	664	11	720	11
371	12	427	12	491	12	544	12	594	12	643	12	694	12		
387	13	445	13	511	13	566	13	618	13	670	13	720	13		
401	14	461	14	530	14	588	14	642	14	695	14				
415	15	478	15	549	15	608	15	664	15	720	15				
429	16	493	16	567	16	628	16	686	16						
442	17	508	17	584	17	648	17	707	17						
455	18	523	18	601	18	666	18	720	18						
467	19	538	19	618	19	685	19								
479	20	552	20	634	20	702	20								
491	21	565	21	649	21	720	21								
503	22	578	22	665	22										
514	23	591	23	680	23										
525	24	604	24	694	24										
536	25	617	25	709	25										
547	26	629	26	720	26										
557	27	641	27												
567	28	653	28												
577	29	664	29												
587	30	675	30												
597	31	687	31												
606	32	698	32												
616	33	708	33												
625	34	720	34												
634	35														
643	36														
652	37														
661	38														
670	39														
678	40														
686	41														
695	42														
703	43														
711	44														
720	45														

Figure F.27: HRR Growth Profiles for Group 4c Electrical Enclosures (SF from 0.02 to 0.35).

H (ft.)	Sum of Plume & Ceiling Jet Lag Times and Detector Response Time in s															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
6	5	5	6	6	7	7	8	8	9	9	9	10	10	11	11	12
7	5	5	6	6	7	7	7	8	8	8	9	9	9	10	10	11
8	5	5	6	6	6	7	7	7	8	8	8	9	9	9	10	10
9	5	5	6	6	6	6	7	7	7	8	8	8	8	9	9	9
10	5	5	5	6	6	6	6	7	7	7	8	8	8	8	9	9
11	5	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8
12	5	5	5	6	6	6	6	6	7	7	7	7	7	8	8	8
13	5	5	5	6	6	6	6	6	6	7	7	7	7	7	8	8
14	5	5	5	6	6	6	6	6	6	7	7	7	7	7	7	8
15	5	5	5	5	6	6	6	6	6	6	7	7	7	7	7	7
16	5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7
17	5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7
18	5	5	5	5	6	6	6	6	6	6	6	6	7	7	7	7
19	5	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7
20	5	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7
21	5	5	5	5	6	6	6	6	6	6	6	6	6	6	7	7
22	5	5	5	5	6	6	6	6	6	6	6	6	6	6	7	7
23	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	7
24	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	7
25	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6
26	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6
27	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6
28	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6
29	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6
30	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6

Figure F.29: Total Lag and Response Time vs. H and R (R Range: 0-15 ft.)

H (ft.)	Sum of Plume & Ceiling Jet Lag Times and Detector Response Time in s														
	R=16	R=17	R=18	R=19	R=20	R=21	R=22	R=23	R=24	R=25	R=26	R=27	R=28	R=29	R=30
5	13	14	14	15	15	16	17	17	18	18	19	20	20	21	21
6	12	12	13	13	14	14	15	15	16	16	17	17	18	18	19
7	11	11	12	12	13	13	13	14	14	15	15	16	16	16	17
8	10	11	11	11	12	12	12	13	13	13	14	14	15	15	15
9	10	10	10	11	11	11	12	12	12	13	13	13	14	14	14
10	9	9	10	10	10	11	11	11	11	12	12	12	13	13	13
11	9	9	9	9	10	10	10	11	11	11	11	12	12	12	13
12	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12
13	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
14	8	8	8	8	9	9	9	9	10	10	10	10	10	11	11
15	8	8	8	8	8	9	9	9	9	9	10	10	10	10	10
16	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10
17	7	7	8	8	8	8	8	9	9	9	9	9	9	10	10
18	7	7	7	8	8	8	8	8	8	9	9	9	9	9	10
19	7	7	7	7	8	8	8	8	8	8	9	9	9	9	9
20	7	7	7	7	8	8	8	8	8	8	8	9	9	9	9
21	7	7	7	7	7	8	8	8	8	8	8	8	9	9	9
22	7	7	7	7	7	7	8	8	8	8	8	8	8	9	9
23	7	7	7	7	7	7	7	8	8	8	8	8	8	8	9
24	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8
25	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8
26	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8
27	6	7	7	7	7	7	7	7	7	7	8	8	8	8	8
28	6	7	7	7	7	7	7	7	7	7	7	8	8	8	8
29	6	6	7	7	7	7	7	7	7	7	7	7	8	8	8
30	6	6	7	7	7	7	7	7	7	7	7	7	7	8	8

Figure F.30: Total Lag and Response Time vs. H and R (R Range: 16-30 ft.)

H	Sprinkler Activation Time in Seconds (Class A Motors, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	369	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

H	Sprinkler Activation Time in Seconds (Class B Motors, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	139	154	346	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	180	185	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	288	288	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

H	Sprinkler Activation Time in Seconds (Class B Motors, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	159	182	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	235	243	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

H	Sprinkler Activation Time in Seconds (Class B Motors, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	192	228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	503	524	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

H	Sprinkler Activation Time in Seconds (Class B Motors, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	233	296	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

H	Sprinkler Activation Time in Seconds (Class B Motors, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	300	489	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.31: Sprinkler Activation Time for Class A and Class B Motors)

H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	97	104	142	190	256	360	600	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	112	113	158	227	352	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	126	126	176	286	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	146	146	200	451	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	175	175	235	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	228	228	299	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	106	113	163	237	366	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	122	124	187	316	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	142	142	221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	172	172	277	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	230	230	491	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	115	124	194	326	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	135	138	238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	165	165	322	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	221	221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	123	133	229	526	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	148	151	311	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	192	192	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	314	314	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	131	143	276	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	163	167	519	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	228	228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.25)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	139	154	351	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	181	186	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	293	293	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.30)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	149	168	574	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	206	212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.32: Sprinkler Activation Time for Class C Motors (SF=0.02-0.30)

H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.35)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	161	184	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	241	249	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.40)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	177	206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	307	318	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.45)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	197	237	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.50)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	228	287	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.55)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	282	412	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Motors, SF=0.60)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	489	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.33: Sprinkler Activation Time for Class C Motors (SF=0.35-0.60)

Sprinkler Activation Time in Seconds (Class A Dry Transformers, SF=0.02)																
H	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
(ft.)																
5	76	97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	143	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Class A Dry Transformers, SF=0.05)																
H	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
(ft.)																
5	130	176	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Class B Dry Transformers, SF=0.02)																
H	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
(ft.)																
5	31	38	96	186	384	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	47	49	125	311	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	70	70	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	108	108	267	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	195	195	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Class B Dry Transformers, SF=0.05)																
H	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
(ft.)																
5	45	56	159	558	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	71	75	252	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	118	118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	270	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Class B Dry Transformers, SF=0.10)																
H	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
(ft.)																
5	68	87	419	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	122	128	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	455	455	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Class B Dry Transformers, SF=0.15)																
H	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
(ft.)																
5	100	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	239	251	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Class B Dry Transformers, SF=0.20)																
H	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
(ft.)																
5	152	213	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Class B Dry Transformers, SF=0.25)																
H	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
(ft.)																
5	306	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.34: Sprinkler Activation Time for Class A and Class B Dry Transformers)

H		Sprinkler Activation Time in Seconds (Class C Dry Transformers, SF=0.02)														
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	18	22	48	82	124	177	250	363	NA	NA	NA	NA	NA	NA	NA	NA
6	25	27	59	103	165	262	496	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	35	35	70	131	233	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	49	49	84	170	473	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	66	66	100	242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	92	92	122	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	136	136	152	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	279	279	294	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H		Sprinkler Activation Time in Seconds (Class C Dry Transformers, SF=0.05)														
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	24	30	70	125	206	349	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	36	37	88	171	354	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	51	51	110	256	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	73	73	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	109	109	189	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	185	185	339	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H		Sprinkler Activation Time in Seconds (Class C Dry Transformers, SF=0.10)														
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	34	42	107	220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	52	54	144	495	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	79	79	208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	126	126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	294	294	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H		Sprinkler Activation Time in Seconds (Class C Dry Transformers, SF=0.15)														
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	45	56	159	565	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	71	75	253	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	118	118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	272	272	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H		Sprinkler Activation Time in Seconds (Class C Dry Transformers, SF=0.20)														
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	58	73	255	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	99	104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	198	198	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H		Sprinkler Activation Time in Seconds (Class C Dry Transformers, SF=0.25)														
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	76	97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	143	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.35: Sprinkler Activation Time for Class C Dry Transformers (SF=0.02-0.25)

H	Sprinkler Activation Time in Seconds (Class C Dry Transformers, SF=0.30)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	102	133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	253	266	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Dry Transformers, SF=0.35)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	144	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Class C Dry Transformers, SF=0.40)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	249	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.36: Sprinkler Activation Time for Class C Dry Transformers (SF=0.30-0.40)

H	Sprinkler Activation Time in Seconds (Generic Transients, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	168	177	225	258	284	307	327	347	373	448	NA	NA	NA	NA	NA	NA
6	189	191	238	273	301	325	350	392	NA	NA	NA	NA	NA	NA	NA	NA
7	209	209	250	287	317	345	396	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	229	229	261	300	332	372	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	249	249	272	313	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	268	268	282	324	380	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	286	286	292	337	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	305	305	307	352	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	323	323	324	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	345	345	345	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Generic Transients, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	179	189	239	275	303	335	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	202	204	253	291	325	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	224	224	267	307	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	245	245	279	325	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	266	266	290	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	286	286	302	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	307	307	314	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Generic Transients, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	189	199	252	294	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	213	215	268	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	236	236	283	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	259	259	313	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	282	282	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Generic Transients, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	194	205	265	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	220	222	345	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	244	244	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	299	299	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Generic Transients, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	198	209	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	224	226	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Generic Transients, SF=0.25)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	197	214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.37: Sprinkler Activation Time for Generic Transients (SF=0.02-0.25)

H (ft.)	Sprinkler Activation Time in Seconds (Generic Transients, SF=0.30)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.38: Sprinkler Activation Time for Generic Transients (SF=0.30)

H	Sprinkler Activation Time in Seconds (TCCL Transients, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	192	203	258	296	332	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	217	220	273	315	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	241	241	288	346	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	264	264	301	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	287	287	315	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	310	310	335	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (TCCL Transients, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	205	216	274	354	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	231	234	292	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	257	257	327	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	282	282	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (TCCL Transients, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	216	228	364	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	244	247	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	281	281	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (TCCL Transients, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	222	234	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	267	276	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (TCCL Transients, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	230	274	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.39: Sprinkler Activation Time for TCCL Transients)

H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	289	309	419	502	571	632	686	736	797	886	1046	NA	NA	NA	NA	NA
6	342	345	459	551	627	694	760	862	1138	NA	NA	NA	NA	NA	NA	NA
7	396	396	496	597	681	761	917	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	452	452	533	643	735	912	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	510	510	570	688	824	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	570	570	605	732	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	631	631	640	804	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	693	693	697	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	771	771	773	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	321	342	466	559	636	704	773	883	1161	NA	NA	NA	NA	NA	NA	NA
6	381	384	511	614	701	793	1024	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	443	443	555	668	773	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	507	507	597	721	1018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	573	573	639	795	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	641	641	680	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	710	710	721	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	855	855	865	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	356	379	518	622	709	806	1038	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	424	428	570	686	807	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	494	494	620	752	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	567	567	669	916	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	643	643	717	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	720	720	783	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	384	410	560	674	779	1053	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	459	463	618	747	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	537	537	673	923	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	617	617	728	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	701	701	823	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	871	871	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.40: Sprinkler Activation Time for Group 1 Electrical Enclosures (SF=0.02-0.15)

H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	411	438	599	721	912	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	492	496	662	849	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	576	576	723	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	664	664	823	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	764	764	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.25)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	437	465	638	780	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	524	528	706	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	615	615	792	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	709	709	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.30)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	463	493	677	895	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	557	561	755	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	654	654	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	766	766	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.35)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	490	522	717	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	590	594	851	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	695	695	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.40)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	519	552	769	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	626	630	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	740	740	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.45)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	550	585	876	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	665	669	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	847	847	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.50)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	584	622	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	708	712	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.41: Sprinkler Activation Time for Group 1 Electrical Enclosures (SF=0.20-0.50)

H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.55)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	623	662	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	766	773	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.60)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	667	709	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.65)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	719	777	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 1 Electrical Enclosures, SF=0.70)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	824	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.42: Sprinkler Activation Time for Group 1 Electrical Enclosures (SF=0.55-0.70)

H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	321	343	466	560	637	705	774	885	1174	NA	NA	NA	NA	NA	NA	NA
6	381	385	512	615	701	794	1032	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	443	443	555	669	775	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	507	507	598	722	1032	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	573	573	640	797	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	641	641	681	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	711	711	721	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	861	861	872	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	354	378	515	619	705	799	1007	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	422	425	567	682	799	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	492	492	616	746	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	564	564	665	890	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	639	639	713	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	716	716	774	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	390	416	569	684	799	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	466	470	627	763	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	545	545	684	1055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	627	627	742	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	712	712	877	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	419	447	612	737	1002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	502	506	676	913	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	588	588	740	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	678	678	894	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	801	801	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	446	475	651	809	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	535	539	721	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	628	628	834	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	725	725	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.43: Sprinkler Activation Time for Group 2 Electrical Enclosures (SF=0.02-0.20)

H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.25)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	471	502	689	968	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	567	571	776	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	666	666	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	797	797	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.30)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	497	529	727	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	599	603	897	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	705	705	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.35)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	523	557	778	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	631	636	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	749	749	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.40)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	551	586	879	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	666	670	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	850	850	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.45)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	580	617	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	703	707	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.50)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	612	651	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	746	752	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.55)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	648	688	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	848	859	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.60)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	688	731	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.44: Sprinkler Activation Time for Group 2 Electrical Enclosures (SF=0.25-0.60)

H (ft.)	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.65)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	735	811	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H (ft.)	Sprinkler Activation Time in Seconds (Group 2 Electrical Enclosures, SF=0.70)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	853	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.45: Sprinkler Activation Time for Group 2 Electrical Enclosures (SF=0.65-0.70)

H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	272	290	394	471	536	592	643	689	732	782	849	946	1123	NA	NA	NA
6	321	324	430	516	587	650	706	763	846	1005	NA	NA	NA	NA	NA	NA
7	371	371	465	558	637	705	778	917	NA	NA	NA	NA	NA	NA	NA	NA
8	423	423	499	600	685	768	970	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	476	476	532	641	733	922	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	531	531	564	681	810	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	587	587	596	721	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	645	645	648	774	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	703	703	705	963	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	787	787	787	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	309	330	449	539	613	678	737	814	941	NA	NA	NA	NA	NA	NA	NA
6	367	370	492	592	674	750	872	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	426	426	534	643	735	894	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	487	487	574	693	836	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	550	550	614	745	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	615	615	653	850	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	682	682	692	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	758	758	764	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	354	378	516	619	706	800	1012	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	422	426	567	683	800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	492	492	617	747	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	565	565	666	894	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	640	640	714	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	717	717	775	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	678	678	894	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	801	801	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	393	419	573	690	812	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	470	474	633	773	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	550	550	690	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	633	633	751	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	719	719	934	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.46: Sprinkler Activation Time for Group 3 Electrical Enclosures (SF=0.02-0.15)

H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	431	460	630	766	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	517	522	697	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	607	607	774	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	978	978	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.25)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	471	501	688	963	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	566	570	775	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	666	666	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	795	795	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.30)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	512	545	755	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	618	622	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	729	729	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.35)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	558	594	930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	675	679	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	934	934	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.40)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	609	648	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	741	746	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.45)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	667	709	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 3 Electrical Enclosures, SF=0.50)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	736	812	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.47: Sprinkler Activation Time for Group 3 Electrical Enclosures (SF=0.20-0.50)

H	Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	210	224	303	361	410	452	490	524	556	586	614	642	667	691	714	737
6	246	249	328	393	446	492	534	572	607	640	671	701	730	761	798	842
7	282	282	353	422	480	531	577	618	657	692	727	765	814	880	981	1216
8	319	319	376	451	514	569	618	663	704	746	800	880	1042	NA	NA	NA
9	357	357	399	480	547	606	658	707	756	830	982	NA	NA	NA	NA	NA
10	396	396	422	508	579	642	698	754	847	NA	NA	NA	NA	NA	NA	NA
11	436	436	444	535	611	677	738	838	NA	NA	NA	NA	NA	NA	NA	NA
12	476	476	480	562	642	712	801	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	518	518	519	588	673	752	1025	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	560	560	560	615	703	822	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	603	603	603	640	734	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	647	647	647	666	782	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	692	692	692	697	926	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	740	740	740	744	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19	929	929	929	936	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	238	254	344	411	467	515	558	598	635	669	702	734	768	810	860	924
6	279	283	374	448	509	563	611	655	696	734	780	841	927	1082	NA	NA
7	322	322	403	483	550	609	662	710	760	830	951	NA	NA	NA	NA	NA
8	366	366	431	518	591	654	711	773	880	NA	NA	NA	NA	NA	NA	NA
9	410	410	459	552	630	698	768	913	NA	NA	NA	NA	NA	NA	NA	NA
10	456	456	486	585	668	744	893	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	503	503	512	618	706	822	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	551	551	555	650	747	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	601	601	602	682	823	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	651	651	651	713	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	702	702	702	749	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	767	767	767	820	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	271	289	392	470	534	590	640	686	729	778	843	934	1095	NA	NA	NA
6	320	323	428	514	585	647	703	759	839	986	NA	NA	NA	NA	NA	NA
7	370	370	463	556	634	702	773	904	NA	NA	NA	NA	NA	NA	NA	NA
8	421	421	497	598	683	764	948	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	474	474	530	639	730	903	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	529	529	562	679	803	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	585	585	594	718	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	642	642	646	768	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	700	700	702	916	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	779	779	779	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.48: Sprinkler Activation Time for Group 4a Closed Enclosures (SF=0.02-0.10)

Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.15)																
H (ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	299	320	434	521	592	655	711	770	855	1004	NA	NA	NA	NA	NA	NA
6	354	358	476	571	651	721	805	983	NA	NA	NA	NA	NA	NA	NA	NA
7	411	411	515	620	708	811	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	470	470	554	668	775	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	530	530	592	715	992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	592	592	629	774	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	656	656	666	1008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	722	722	725	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	933	933	938	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.20)																
H (ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	327	349	475	570	650	719	798	941	NA	NA	NA	NA	NA	NA	NA	NA
6	389	392	522	627	716	826	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	452	452	567	683	804	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	518	518	610	738	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	585	585	653	841	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	655	655	696	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	727	727	739	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.25)																
H (ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	355	379	517	622	708	805	1034	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	424	427	569	685	806	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	494	494	619	751	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	567	567	668	912	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	642	642	717	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	720	720	781	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.30)																
H (ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	386	411	562	676	784	1083	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	461	465	620	750	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	539	539	676	942	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	620	620	731	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	703	703	833	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	895	895	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.35)																
H (ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	418	446	611	736	993	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	501	505	675	907	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	588	588	739	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	677	677	886	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	798	798	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.49: Sprinkler Activation Time for Group 4a Closed Enclosures (SF=0.15-0.35)

H	Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.40)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	455	485	665	849	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	547	551	738	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	642	642	914	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	745	745	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.45)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	497	529	727	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	598	603	895	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	705	705	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.50)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	545	580	849	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	658	663	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	816	816	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.55)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	602	640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	731	735	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.60)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	672	714	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4a Closed Electrical Enclosures, SF=0.65)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	773	924	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.50: Sprinkler Activation Time for Group 4a Closed Enclosures (SF=0.40-0.65)

H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.02)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	151	161	217	258	292	321	347	371	394	414	434	453	470	487	503	518
6	175	177	233	278	315	347	376	402	426	449	470	490	510	528	546	563
7	199	199	249	297	337	371	402	431	457	481	504	526	547	568	587	605
8	224	224	264	315	358	395	428	459	487	513	538	561	583	605	626	646
9	249	249	278	333	378	418	453	486	516	544	570	595	619	642	665	686
10	274	274	293	350	398	440	478	512	544	574	602	629	654	678	701	725
11	300	300	306	367	418	462	502	538	572	603	633	661	688	714	740	772
12	326	326	329	384	437	484	525	564	599	632	664	694	722	753	794	850
13	352	352	353	400	456	505	549	589	626	661	694	725	762	813	895	1132
14	379	379	379	416	474	526	572	614	653	690	724	765	826	948	NA	NA
15	406	406	406	432	493	546	594	638	679	718	761	830	1013	NA	NA	NA
16	434	434	434	448	511	567	617	663	705	749	820	1057	NA	NA	NA	NA
17	462	462	462	466	529	587	639	687	732	797	1002	NA	NA	NA	NA	NA
18	490	490	490	493	547	607	661	711	767	906	NA	NA	NA	NA	NA	NA
19	519	519	519	521	565	627	683	736	829	NA	NA	NA	NA	NA	NA	NA
20	548	548	548	549	582	647	705	771	NA	NA	NA	NA	NA	NA	NA	NA
21	578	578	578	578	600	666	726	835	NA	NA	NA	NA	NA	NA	NA	NA
22	608	608	608	608	617	686	754	NA	NA	NA	NA	NA	NA	NA	NA	NA
23	639	639	639	640	644	705	799	NA	NA	NA	NA	NA	NA	NA	NA	NA
24	670	671	671	671	674	725	947	NA	NA	NA	NA	NA	NA	NA	NA	NA
25	702	702	702	702	704	749	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	735	735	735	735	736	786	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
27	800	800	800	800	800	887	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.05)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	172	185	249	296	335	369	400	428	453	477	500	522	543	562	581	598
6	201	204	268	320	363	400	434	464	492	519	544	567	590	612	632	652
7	230	230	287	343	389	430	466	499	530	558	585	611	635	659	682	703
8	259	259	305	365	415	458	497	533	566	597	626	653	680	706	730	757
9	288	288	323	387	440	486	528	566	601	634	666	695	723	755	793	842
10	319	319	340	408	464	513	558	598	636	671	704	737	777	832	915	1104
11	349	349	356	428	488	540	587	630	670	707	745	795	874	1063	NA	NA
12	380	380	384	448	511	566	616	661	704	746	806	920	NA	NA	NA	NA
13	412	412	413	468	534	592	645	692	738	804	957	NA	NA	NA	NA	NA
14	444	444	444	488	557	618	673	723	788	954	NA	NA	NA	NA	NA	NA
15	477	477	477	507	580	643	701	760	897	NA	NA	NA	NA	NA	NA	NA
16	511	511	511	527	602	668	728	826	NA	NA	NA	NA	NA	NA	NA	NA
17	545	545	545	550	624	693	765	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	579	579	579	583	646	718	835	NA	NA	NA	NA	NA	NA	NA	NA	NA
19	614	614	614	616	668	746	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	650	650	650	650	690	791	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21	686	686	686	686	711	935	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22	723	723	723	723	734	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23	783	783	783	783	792	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.51: Sprinkler Activation Time for Group 4a Open Enclosures (SF=0.02-0.05)

H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.10)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	199	213	287	343	389	429	464	497	527	555	582	608	632	654	676	697
6	233	236	311	372	422	466	505	541	575	606	635	663	690	715	740	769
7	267	267	334	400	455	502	545	584	620	654	686	716	748	786	833	894
8	302	302	356	427	486	537	583	626	665	702	737	780	839	928	1115	NA
9	338	338	377	453	516	571	621	666	708	751	810	907	NA	NA	NA	NA
10	374	374	398	479	546	605	658	706	756	833	1015	NA	NA	NA	NA	NA
11	411	411	419	504	576	638	694	749	839	NA	NA	NA	NA	NA	NA	NA
12	449	449	452	529	604	670	730	820	NA	NA	NA	NA	NA	NA	NA	NA
13	488	488	489	554	633	703	780	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	527	527	527	578	661	735	898	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	567	567	567	602	689	784	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	608	608	608	626	717	918	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	650	650	650	655	749	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	692	692	692	695	805	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19	736	736	736	739	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	865	865	865	867	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.15)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	223	238	322	385	437	482	522	559	593	625	655	685	712	739	769	803
6	262	265	350	419	476	526	570	611	649	684	718	753	795	849	920	1029
7	301	301	376	451	514	568	617	661	703	743	794	867	988	NA	NA	NA
8	341	341	402	483	550	609	662	710	761	836	980	NA	NA	NA	NA	NA
9	382	382	427	514	586	649	706	766	869	NA	NA	NA	NA	NA	NA	NA
10	425	425	452	544	621	689	754	877	NA	NA	NA	NA	NA	NA	NA	NA
11	468	468	476	574	656	728	842	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	512	512	515	603	690	782	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	557	557	558	632	724	931	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	603	603	603	661	768	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	650	650	650	690	874	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	698	698	698	718	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	753	753	753	760	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.52: Sprinkler Activation Time for Group 4a Open Enclosures (SF=0.10-0.15)

H	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	247	264	357	427	485	535	581	622	660	696	731	769	815	873	951	1068
6	290	294	389	466	530	586	636	682	724	772	837	935	1137	NA	NA	NA
7	335	335	419	503	573	634	689	741	811	932	NA	NA	NA	NA	NA	NA
8	381	381	449	540	615	682	743	837	1148	NA	NA	NA	NA	NA	NA	NA
9	428	428	478	575	657	728	834	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	476	476	506	610	698	796	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	525	525	534	645	739	1087	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	576	576	579	679	809	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	628	628	629	713	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	680	680	680	751	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	736	736	736	829	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.25)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	272	290	394	471	536	592	642	688	731	781	849	945	1121	NA	NA	NA
6	321	324	430	515	587	649	705	762	846	1004	NA	NA	NA	NA	NA	NA
7	371	371	465	558	637	705	778	916	NA	NA	NA	NA	NA	NA	NA	NA
8	423	423	498	600	685	768	968	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	476	476	532	641	733	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	531	531	564	681	810	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	587	587	596	721	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	644	644	648	773	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	703	703	704	958	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	786	786	786	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.30)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	299	319	434	520	591	654	710	768	851	995	NA	NA	NA	NA	NA	NA
6	354	357	475	570	650	719	802	973	NA	NA	NA	NA	NA	NA	NA	NA
7	411	411	514	619	706	808	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	469	469	553	667	772	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	529	529	591	713	973	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	591	591	628	771	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	655	655	665	975	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	720	720	724	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	907	907	911	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.53: Sprinkler Activation Time for Group 4a Open Enclosures (SF=0.20-0.30)

H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.35)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	329	351	479	574	654	724	808	966	NA	NA	NA	NA	NA	NA	NA	NA
6	391	395	525	632	721	839	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	455	455	571	688	815	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	521	521	615	745	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	590	590	658	864	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	660	660	701	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	733	733	746	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.40)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	364	388	530	637	726	847	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	434	438	584	703	854	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	507	507	635	781	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	582	582	686	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	660	660	737	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	742	742	841	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.45)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	405	432	591	711	871	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	485	489	652	818	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	568	568	712	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	654	654	792	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	746	746	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.50)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	454	484	664	846	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	546	550	737	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	641	641	907	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	743	743	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.55)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	515	549	761	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	622	626	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	734	734	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.60)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	593	631	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	719	723	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.54: Sprinkler Activation Time for Group 4a Open Enclosures (SF=0.35-0.60)

H (ft.)	Sprinkler Activation Time in Seconds (Group 4a Open Electrical Enclosures, SF=0.65)															
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	696	741	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.55: Sprinkler Activation Time for Group 4a Open Enclosures (SF=0.65)

H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	272	290	394	471	536	592	643	689	732	782	849	946	1123	NA	NA	NA
6	321	324	430	516	587	650	706	763	846	1005	NA	NA	NA	NA	NA	NA
7	371	371	465	558	637	705	778	917	NA	NA	NA	NA	NA	NA	NA	NA
8	423	423	499	600	685	768	970	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	476	476	532	641	733	922	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	531	531	564	681	810	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	587	587	596	721	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	645	645	648	774	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	703	703	705	963	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	787	787	787	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	309	330	449	539	613	678	737	814	941	NA	NA	NA	NA	NA	NA	NA
6	367	370	492	592	674	750	872	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	426	426	534	643	735	894	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	487	487	574	693	836	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	550	550	614	745	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	615	615	653	850	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	682	682	692	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	758	758	764	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	354	378	516	619	706	800	1012	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	422	426	567	683	800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	492	492	617	747	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	565	565	666	894	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	640	640	714	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	717	717	775	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	393	419	573	690	812	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	470	474	633	773	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	550	550	690	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	633	633	751	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	719	719	934	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.56: Sprinkler Activation Time for Group 4b Closed Enclosures (SF=0.02-0.15)

H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	431	460	630	766	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	517	522	697	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	607	607	774	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	978	978	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.25)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	471	501	688	963	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	566	570	775	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	666	666	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	795	795	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.30)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	512	545	755	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	618	622	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	729	729	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.35)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	558	594	930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	675	679	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	934	934	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.40)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	609	648	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	741	746	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.45)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	667	709	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Closed Electrical Enclosures, SF=0.50)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	736	812	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.57: Sprinkler Activation Time for Group 4b Closed Enclosures (SF=0.20-0.50)

H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	226	242	327	391	444	490	531	568	603	636	666	696	724	753	786	826
6	266	269	356	426	484	534	580	621	660	696	730	770	818	882	974	1143
7	306	306	383	459	522	578	627	673	715	759	819	911	1102	NA	NA	NA
8	347	347	409	491	560	620	673	723	781	874	1132	NA	NA	NA	NA	NA
9	389	389	435	523	596	661	719	788	929	NA	NA	NA	NA	NA	NA	NA
10	432	432	460	554	632	701	774	954	NA	NA	NA	NA	NA	NA	NA	NA
11	476	476	484	584	668	743	902	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	521	521	525	614	703	814	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	567	567	568	644	739	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	614	614	614	673	798	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	662	662	662	702	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	711	711	711	732	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	781	781	781	791	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	257	275	373	446	506	559	607	650	690	728	771	824	894	995	1183	NA
6	303	307	406	487	554	613	665	714	764	835	949	NA	NA	NA	NA	NA
7	350	350	438	527	600	664	722	791	914	NA	NA	NA	NA	NA	NA	NA
8	399	399	470	565	645	715	798	1017	NA	NA	NA	NA	NA	NA	NA	NA
9	448	448	501	603	689	776	1090	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	499	499	531	640	733	940	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	551	551	560	677	801	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	605	605	608	713	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	660	660	661	755	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	715	715	715	849	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	816	816	816	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	294	314	427	511	581	643	698	751	822	933	1188	NA	NA	NA	NA	NA
6	348	351	467	560	638	707	779	907	NA	NA	NA	NA	NA	NA	NA	NA
7	403	403	505	608	694	782	1011	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	461	461	543	655	752	1034	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	520	520	580	700	875	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	580	580	617	749	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	643	643	652	854	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	707	707	710	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	811	811	814	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.58: Sprinkler Activation Time for Group 4b Open Enclosures (SF=0.02-0.10)

H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	326	348	474	568	647	716	793	927	NA	NA	NA	NA	NA	NA	NA	NA
6	387	391	520	625	713	819	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	450	450	564	680	797	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	515	515	608	734	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	583	583	650	830	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	652	652	692	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	724	724	735	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	357	381	519	624	711	811	1061	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	425	429	571	688	812	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	496	496	622	755	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	569	569	671	935	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	645	645	720	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	723	723	788	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.25)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	389	415	567	681	794	1196	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	465	469	625	759	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	543	543	682	1010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	625	625	738	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	709	709	862	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	1070	1070	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.30)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	423	451	617	745	1073	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	507	511	682	959	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	594	594	749	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	685	685	959	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	826	826	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.35)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	460	490	672	875	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	553	557	748	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	650	650	1010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	757	757	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.59: Sprinkler Activation Time for Group 4b Open Enclosures (SF=0.15-0.35)

H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.40)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	501	534	735	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	604	609	946	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	712	712	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.45)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	549	584	869	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	663	668	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	838	838	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.50)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	604	642	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	733	738	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.55)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	670	712	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4b Open Electrical Enclosures, SF=0.60)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	757	867	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.60: Sprinkler Activation Time for Group 4b Open Enclosures (SF=0.40-0.60)

H	Sprinkler Activation Time in Seconds (Group 4c Electrical Enclosures, SF=0.02)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	491	523	719	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	592	596	859	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	697	697	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4c Electrical Enclosures, SF=0.05)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	553	588	892	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	669	673	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	868	868	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4c Electrical Enclosures, SF=0.10)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	623	662	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	765	772	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4c Electrical Enclosures, SF=0.15)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	681	723	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4c Electrical Enclosures, SF=0.20)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	736	813	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H	Sprinkler Activation Time in Seconds (Group 4c Electrical Enclosures, SF=0.25)															
(ft.)	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14	R=15
5	848	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure F.61: Time to Sprinkler Activation vs. H and R (Group 4c Electrical Enclosures)

H (ft.)	HRR in kW for Sprinkler Activation in 1 min														
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14
5	36	44	103	171	244	322	405	491	581	674	769	868	969	1073	1179
6	55	58	126	206	294	388	487	591	697	808	923	1040	1161	1285	1411
7	78	78	148	242	345	455	570	690	815	945	1078	1214	1355	1498	1645
8	106	106	170	279	397	523	654	792	934	1082	1234	1389	1549	1713	1880
9	139	139	193	316	449	591	740	894	1055	1221	1391	1566	1746	1930	2118
10	178	178	217	354	503	659	825	997	1176	1361	1551	1745	1944	2149	2357
11	221	221	240	392	556	730	913	1102	1299	1502	1711	1925	2145	2369	2598
12	270	270	282	431	610	801	1000	1208	1423	1645	1873	2107	2346	2591	2841
13	326	326	330	470	665	872	1089	1314	1548	1788	2036	2290	2550	2815	3085
14	386	386	386	510	721	945	1179	1422	1674	1934	2201	2474	2754	3040	3331
15	452	452	453	550	777	1017	1269	1531	1802	2080	2366	2660	2961	3267	3580
16	526	526	526	590	834	1091	1360	1640	1929	2228	2534	2848	3168	3495	3830
17	605	605	605	641	891	1165	1453	1751	2059	2376	2702	3037	3378	3726	4081
18	690	690	690	718	949	1241	1545	1862	2190	2526	2873	3227	3589	3958	4335
19	782	783	783	799	1007	1316	1639	1975	2321	2678	3044	3419	3801	4192	4590
20	881	881	881	885	1067	1393	1734	2088	2454	2830	3217	3611	4015	4427	4847
21	986	986	987	987	1126	1471	1830	2203	2588	2984	3390	3806	4231	4664	5105
22	1099	1099	1099	1099	1186	1549	1926	2318	2723	3139	3565	4001	4448	4903	5366
23	1218	1218	1218	1219	1283	1627	2023	2435	2858	3294	3741	4199	4666	5142	5627
24	1345	1345	1345	1345	1397	1706	2122	2551	2995	3451	3919	4397	4886	5384	5891
25	1479	1479	1479	1479	1516	1787	2220	2669	3132	3609	4097	4597	5107	5627	6156
26	1620	1620	1620	1620	1641	1867	2320	2788	3272	3768	4278	4798	5329	5872	6423
27	1768	1768	1768	1769	1769	1948	2419	2908	3411	3929	4458	5000	5554	6118	6691
28	1924	1924	1925	1925	1925	2041	2520	3029	3552	4090	4641	5204	5779	6365	6961
29	2088	2088	2088	2088	2088	2189	2622	3150	3694	4252	4824	5409	6006	6614	7233
30	2259	2259	2259	2259	2260	2344	2725	3272	3836	4416	5009	5615	6234	6865	7506

Figure F.62: Steady HRR for Sprinkler Activation in 1 Minute vs. H and R

H (ft.)	HRR in kW for Sprinkler Activation in 2 min														
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14
5	21	26	58	94	133	173	216	260	305	352	400	450	500	553	605
6	33	34	71	115	162	212	263	317	372	429	487	547	608	671	734
7	48	48	85	137	193	252	313	376	441	508	576	647	719	792	866
8	65	65	100	161	225	293	363	436	511	589	668	748	832	916	1001
9	86	86	115	184	257	335	415	498	584	671	761	853	947	1042	1139
10	111	111	130	208	292	378	468	562	658	756	856	960	1065	1172	1281
11	138	138	147	233	326	423	522	626	733	842	954	1068	1185	1303	1424
12	170	170	175	259	361	468	578	693	810	931	1053	1179	1307	1437	1569
13	206	206	207	286	398	514	636	761	888	1020	1155	1292	1432	1574	1718
14	245	245	246	313	435	561	693	829	969	1111	1258	1407	1558	1713	1870
15	289	289	289	340	472	610	753	899	1051	1205	1363	1524	1688	1854	2023
16	337	337	337	368	511	660	813	971	1133	1300	1470	1642	1818	1997	2179
17	389	389	389	404	550	710	874	1044	1218	1396	1578	1763	1951	2143	2337
18	446	446	446	457	591	761	937	1118	1304	1494	1688	1886	2086	2290	2497
19	508	508	508	515	631	813	1001	1194	1392	1593	1800	2010	2223	2440	2661
20	573	573	573	576	673	866	1066	1270	1480	1695	1913	2136	2363	2592	2826
21	644	644	645	645	716	920	1131	1348	1570	1797	2028	2264	2503	2747	2993
22	720	720	720	720	759	974	1198	1427	1662	1901	2146	2394	2646	2902	3162
23	801	801	801	801	826	1030	1266	1507	1754	2007	2264	2526	2791	3061	3334
24	887	887	887	887	907	1087	1334	1588	1848	2113	2384	2659	2938	3221	3508
25	977	977	977	977	993	1144	1404	1671	1943	2222	2505	2793	3086	3383	3684
26	1074	1074	1074	1074	1082	1202	1475	1755	2040	2332	2628	2930	3236	3547	3862
27	1175	1175	1175	1175	1175	1261	1546	1838	2137	2442	2752	3068	3389	3713	4042
28	1283	1283	1283	1283	1283	1328	1619	1924	2237	2554	2878	3208	3542	3881	4224
29	1395	1395	1395	1395	1395	1434	1693	2011	2337	2668	3006	3349	3697	4051	4408
30	1513	1513	1513	1513	1513	1547	1767	2099	2438	2783	3135	3492	3855	4222	4594

Figure F.63: Steady HRR for Sprinkler Activation in 2 Minutes vs. H and R

H (ft.)	HRR in kW for Sprinkler Activation in 3 min														
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14
5	18	21	45	71	99	128	159	190	223	256	290	325	360	396	433
6	27	27	56	88	123	159	197	235	274	316	357	400	443	486	531
7	39	39	68	107	148	191	236	282	330	378	427	478	529	580	634
8	54	54	80	126	175	225	277	331	386	442	499	558	617	678	739
9	72	72	93	146	202	260	320	382	445	509	574	642	709	779	849
10	92	92	107	167	231	296	364	434	505	578	652	728	804	882	961
11	116	116	121	189	260	334	410	488	568	649	732	816	902	989	1077
12	143	143	146	211	291	373	457	544	632	722	814	907	1002	1098	1196
13	174	174	175	235	322	413	506	601	698	797	898	1000	1105	1210	1318
14	208	208	208	259	355	454	556	660	766	874	985	1097	1210	1325	1442
15	246	246	246	284	388	497	607	720	836	954	1073	1195	1318	1443	1570
16	288	288	288	309	422	540	660	782	908	1034	1164	1295	1429	1564	1700
17	334	334	334	341	458	585	713	846	980	1118	1257	1398	1542	1687	1834
18	384	384	384	389	494	630	769	910	1055	1203	1352	1503	1657	1812	1969
19	437	437	437	441	531	676	825	978	1132	1289	1448	1610	1774	1941	2108
20	496	496	496	497	569	724	883	1045	1210	1377	1547	1720	1894	2071	2249
21	558	558	558	558	608	773	942	1115	1290	1467	1648	1831	2016	2204	2393
22	625	625	625	625	647	823	1002	1185	1371	1559	1751	1944	2140	2339	2540
23	697	697	697	697	709	874	1063	1257	1453	1652	1855	2060	2267	2477	2689
24	773	773	773	773	783	925	1126	1330	1537	1748	1961	2177	2396	2617	2840
25	854	854	854	854	861	978	1189	1405	1623	1845	2069	2297	2527	2759	2994
26	940	940	940	940	944	1031	1254	1480	1710	1943	2179	2418	2660	2904	3151
27	1031	1031	1031	1031	1031	1086	1320	1558	1799	2043	2291	2542	2795	3051	3309
28	1127	1127	1127	1127	1127	1148	1387	1636	1889	2145	2404	2667	2932	3199	3470
29	1228	1228	1228	1228	1228	1246	1455	1716	1980	2248	2519	2794	3071	3351	3634
30	1334	1334	1334	1334	1334	1349	1524	1797	2073	2353	2636	2923	3212	3505	3799

Figure F.64: Steady HRR for Sprinkler Activation in 3 Minutes vs. H and R

H (ft.)	HRR in kW for Sprinkler Activation in 4 min														
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14
5	16	18	39	60	84	108	133	158	185	211	239	267	295	324	353
6	24	25	49	77	106	136	166	198	230	264	297	332	367	402	438
7	35	35	60	94	128	165	201	240	279	318	359	400	442	484	527
8	49	49	72	112	153	195	239	284	329	376	423	472	520	570	620
9	66	66	85	130	178	227	278	330	383	436	491	546	602	660	717
10	86	86	98	150	205	261	319	378	438	499	561	624	688	752	818
11	108	108	111	171	233	296	361	428	496	564	634	705	776	849	922
12	133	133	135	192	261	333	406	480	555	632	709	788	867	948	1030
13	163	163	163	215	292	371	451	534	617	702	787	874	962	1051	1141
14	195	195	195	238	323	409	498	588	680	773	867	963	1059	1157	1255
15	231	231	231	262	355	450	547	645	746	847	950	1054	1159	1265	1372
16	270	270	270	287	388	492	598	704	813	923	1035	1148	1262	1377	1494
17	314	314	314	318	422	535	649	765	883	1002	1123	1244	1368	1492	1618
18	361	361	361	364	458	579	702	827	954	1082	1212	1343	1475	1610	1745
19	413	413	413	414	494	624	756	891	1027	1165	1303	1445	1586	1729	1874
20	469	469	469	469	530	670	812	956	1102	1249	1398	1548	1700	1853	2007
21	529	529	529	529	569	717	869	1022	1178	1335	1494	1654	1816	1978	2143
22	593	593	593	593	608	766	928	1091	1256	1423	1592	1762	1934	2107	2282
23	661	661	661	661	668	816	987	1161	1336	1513	1692	1872	2055	2238	2423
24	734	734	734	734	740	866	1048	1232	1418	1605	1794	1985	2178	2372	2567
25	812	812	812	812	816	919	1110	1304	1501	1699	1898	2100	2304	2508	2714
26	895	895	895	895	897	971	1174	1379	1585	1794	2005	2217	2431	2647	2864
27	983	983	983	983	983	1024	1238	1454	1672	1891	2113	2337	2562	2788	3017
28	1075	1075	1075	1075	1075	1086	1304	1530	1760	1991	2223	2458	2694	2931	3171
29	1173	1173	1173	1173	1173	1182	1371	1609	1849	2091	2335	2581	2829	3078	3329
30	1275	1275	1275	1275	1275	1283	1439	1688	1939	2193	2449	2706	2965	3227	3489

Figure F.65: Steady HRR for Sprinkler Activation in 4 Minutes vs. H and R

H (ft.)	HRR in kW for Sprinkler Activation in 5 min														
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14
5	15	17	36	55	76	97	119	141	163	187	211	235	259	284	309
6	23	23	45	71	96	123	150	178	207	235	265	295	325	356	386
7	34	34	56	87	118	150	184	218	252	286	322	358	395	431	469
8	48	48	68	104	141	180	219	259	300	341	383	425	468	512	556
9	63	63	80	123	167	211	257	303	350	398	447	496	545	595	646
10	82	82	93	142	193	244	296	349	403	458	513	570	626	683	741
11	104	104	107	163	220	278	337	397	458	520	583	646	710	775	840
12	129	129	130	184	248	314	380	448	516	585	656	726	797	870	943
13	157	157	158	206	278	351	424	500	576	653	731	809	888	968	1049
14	189	189	189	229	308	389	471	554	638	723	808	895	983	1071	1159
15	224	224	224	253	340	429	519	610	702	795	889	984	1079	1175	1273
16	263	263	263	277	373	470	568	668	768	869	971	1075	1179	1284	1390
17	306	306	306	308	407	513	619	727	836	946	1057	1169	1282	1395	1509
18	353	353	353	354	442	556	671	789	906	1025	1145	1266	1387	1510	1633
19	404	404	404	404	478	601	726	851	978	1107	1235	1365	1496	1627	1760
20	458	458	458	459	514	647	781	916	1052	1189	1328	1467	1607	1748	1890
21	517	517	517	517	553	695	837	982	1128	1275	1422	1571	1720	1871	2023
22	581	581	581	581	591	743	896	1050	1205	1362	1519	1678	1838	1997	2159
23	648	648	648	648	651	793	955	1119	1285	1451	1619	1787	1957	2126	2298
24	721	721	721	721	723	843	1016	1190	1366	1542	1720	1898	2078	2258	2441
25	797	797	797	797	799	894	1078	1262	1448	1635	1823	2012	2202	2393	2585
26	879	879	879	879	880	948	1141	1336	1533	1730	1928	2128	2329	2531	2733
27	966	966	966	966	966	1001	1206	1412	1619	1827	2036	2246	2457	2670	2884
28	1057	1057	1057	1057	1057	1062	1271	1488	1706	1925	2146	2367	2589	2813	3037
29	1154	1154	1154	1154	1154	1158	1339	1566	1795	2025	2257	2489	2723	2957	3193
30	1255	1255	1255	1255	1255	1259	1407	1646	1886	2127	2370	2614	2859	3105	3352

Figure F.66: Steady HRR for Sprinkler Activation in 5 Minutes vs. H and R

H (ft.)	HRR in kW for Sprinkler Activation in 6 min														
	R=0	R=1	R=2	R=3	R=4	R=5	R=6	R=7	R=8	R=9	R=10	R=11	R=12	R=13	R=14
5	14	16	34	52	71	90	111	130	151	172	193	215	237	259	281
6	23	23	44	67	91	116	140	166	192	218	245	272	299	327	355
7	33	33	55	83	113	143	173	205	236	268	300	333	366	399	433
8	47	47	65	100	135	172	208	245	282	321	359	398	437	477	517
9	62	62	78	119	160	202	245	288	332	376	421	466	512	558	604
10	81	81	91	138	186	234	284	333	384	434	486	538	590	643	697
11	102	102	104	158	213	268	324	381	439	496	555	614	673	733	793
12	127	127	128	179	241	304	367	430	495	560	626	692	759	826	894
13	156	156	156	202	271	340	411	483	555	626	700	773	848	922	998
14	187	187	187	224	302	379	457	536	616	696	777	858	940	1023	1106
15	222	222	222	248	333	418	505	591	679	768	857	946	1036	1126	1218
16	260	260	260	273	366	460	554	650	745	841	939	1036	1135	1233	1333
17	303	303	303	304	400	502	605	709	813	918	1024	1130	1236	1344	1452
18	350	350	350	350	435	546	657	770	883	996	1111	1226	1341	1458	1575
19	400	400	400	400	471	591	711	832	955	1077	1201	1325	1449	1575	1700
20	454	454	454	454	508	637	767	897	1028	1160	1293	1426	1560	1694	1829
21	513	513	513	513	546	684	824	963	1104	1245	1387	1530	1673	1817	1961
22	576	576	576	576	585	733	882	1031	1181	1332	1484	1636	1790	1943	2097
23	644	644	644	644	644	782	941	1100	1261	1422	1583	1746	1908	2072	2236
24	716	716	716	716	716	833	1002	1172	1342	1513	1685	1857	2030	2203	2378
25	792	792	792	792	793	885	1064	1244	1425	1606	1788	1970	2154	2338	2522
26	873	873	873	873	874	938	1128	1318	1509	1701	1894	2087	2280	2475	2670
27	959	959	959	959	959	992	1192	1394	1595	1798	2001	2205	2410	2615	2820
28	1051	1051	1051	1051	1051	1053	1258	1470	1683	1896	2110	2325	2541	2757	2974
29	1147	1147	1147	1147	1147	1149	1325	1548	1772	1997	2222	2448	2675	2902	3130
30	1248	1248	1248	1248	1248	1250	1394	1628	1864	2099	2336	2573	2811	3050	3289

Figure F.67: Steady HRR for Sprinkler Activation in 6 Minutes vs. H and R

Attachment 1: Revision History for IMC 0609, Appendix F, Attachment 8

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public)
	ML041700310 05/28/2004 CN 04-016	IMC 0609, App F, Att 8 "Guidance for Fire Non-Suppression Probability Analysis," is added to provide guidance for fire non-suppression analysis.		
	ML050700212 02/28/2005 CN 05-007	IMC 0609, App F, Att 8 "Guidance for Fire Non-Suppression Probability Analysis," is revised to correct the mathematical signs within the last bullet before Manual fire suppression on page F8-9.		
	ML17089A411 DRAFT CN 17-XXX	IMC 0609, App F, Att 8 "Guidance for Fire Non-Suppression Probability Analysis," is moved to IMC 0609, App F, Att 7. Attachment 8 is replaced with sets of pre-solved tables and plots that are used in the revised Phase 2 to replace the use of the Fire Dynamics Tools Spreadsheets. CA Note sent 7/18/17 for information only, ML17191A681. Issued 10/11/17 as a draft publicly available document to allow for public comments.	November 2017	ML17093A189
	ML18087A413 05/02/18 CN 18-010	Re-issued with new accession number in order to issue as an official revision after receipt of public comments.	Gap training covering changes to the procedure completed November 2017	ML17093A189

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public)
	ML24150A358 09/05/24 CN 24-024	This revision includes updating IMC 0609 Appendix F, its associated attachments, and the basis document to incorporate updated guidance for modeling transient fires per NUREG-2233, high energy arcing faults per NUREG-2262, and electrical enclosure, electric motor, dry transformer and main control room fires per NUREG-2178 Volume 2. This revision also implements the heat soak method in the HRR and ZOI calculations used in table/plot sets A, D, and E. As part of the updates, the previous revision's table/plot sets D and F were combined into table/plot set D and the previous revision's table/plot sets E and G were combined into table/plot set E. As a result, all the table/plot sets in this attachment have been updated from the previous revision but the data updates in the tables and plots are not tracked for simplicity.		ML24155A263