

Appendix E

OBSTRUCTED PLUME FIRE MODELING RESULTS

This appendix presents the results of the FDS computer simulations related to the obstructed plume studies. Table E-1 and Table E-2 list the results of obstructed and unobstructed plume simulations, respectively. Table E-3, Table E-4, Table E-5, Table E-6, Table E-7, Table E-8 and Table E-9 present the results of bias and uncertainty, opening sensitivity, vertical source sensitivity, wall surface sensitivity, soffit sensitivity, steel enclosure thickness, and horizontal plume shift and angle results for the obstructed plume models, respectively. Table E-10 presents a table identifying the FDS run identification numbers associated with the unobstructed (baseline) plume case (in Table E-2) and three obstructed plume cases (in Table E-1) so that one could compare the results of the similar experimental configurations. Finally, Table E-11 presents a matrix of simulation runs in Table E-4 for ease of use on the opening sensitivity study. The fire models used for the simulations, the input data files, and a copy of NUREG-1934 (EPRI 1023259), *Nuclear Power Plant Fire Modeling Analysis Guidelines (NPP FIRE MAG)*, are included as Appendix G of this report.

| | |
|----------------|-------------|
| Subject | Page |
|----------------|-------------|

| | |
|---|------------|
| Table E-1: Obstructed Simulation Results | E-5 |
|---|------------|

Contains results for obstructed plume simulations used in this investigation. Includes the simulation Test ID, the HRR used in the simulation, the fire source diameter, the fire source elevation, the elevation of the temperature prediction, the maximum time-averaged plume temperature rise, the comparative baseline unobstructed simulation TestID, for reference, identified if the value was filtered from the investigation and the criteria by which the data was filtered as described in Section 5.2.4.5.

| | |
|---|-------------|
| Table E-2: Unobstructed Simulation Results | E-91 |
|---|-------------|

Contains results for unobstructed plume simulations used in this investigation. Includes the simulation Test ID, the HRR used in the simulation, the fire source diameter, the fire source elevation, the elevation of the temperature prediction, the maximum time-averaged plume temperature rise, the corresponding Heskestad Fire Plume Correlation estimated temperature rise, identified if the value was filtered from the investigation and the criteria by which the data was filtered as described in Section 5.2.4.5.

| | |
|---|--------------|
| Table E-3: Determination of Bias and Uncertainty | E-119 |
|---|--------------|

Identifies the bias for each pair of FDS simulated temperature with an obstructed plume geometry and the corresponding Heskestad Fire Plume Correlation using equations from Section 5.2.4.5.

$$\overline{\ln\left(\frac{M}{E}\right)} = \frac{1}{n} \sum_{i=1}^n \ln\left(\frac{M_i}{E_i}\right) = -0.50 \quad (5-11)$$

$$\tilde{\sigma}_M^2 + \tilde{\sigma}_E^2 = \frac{1}{1-n} \sum_{i=1}^n \left[\ln \left(\frac{M_i}{E_i} \right) - \overline{\ln \left(\frac{M}{E} \right)} \right]^2 = 0.11 \quad (5-12)$$

$$\tilde{\sigma}_E = 0.20$$

$$\tilde{\sigma}_M = 0.28$$

$$\delta = \exp \left(\overline{\ln \left(\frac{M}{E} \right)} + \frac{\tilde{\sigma}_M^2}{2} - \frac{\tilde{\sigma}_E^2}{2} \right) = 0.62 \quad (5-13)$$

Table E-4: Opening Sensitivity Cases..... E-135

Contains results for simulations used in this investigation to determine the sensitivity to openings in the top of the obstruction. Includes the simulation Test ID, the HRR used in the simulation, the fire source diameter, the fire source elevation, the elevation of the temperature prediction, the maximum time-averaged plume temperature rise, and the percentage of the opening in the obstruction top.

Table E-5: Vertical Source Sensitivity Results..... E-147

Contains results for simulations used in this investigation to determine the sensitivity to a vertical fire source. Includes the simulation Test ID, the HRR used in the simulation, the fire source elevation, the elevation of the temperature prediction, and the maximum time-averaged plume temperature rise.

Table E-6: Wall Surface Source Sensitivity Results E-151

Contains results for simulations used in this investigation to determine the sensitivity to the enclosure wall surface properties. Includes the simulation Test ID, the HRR used in the simulation, the fire source elevation, the elevation of the temperature prediction, and the maximum time-averaged plume temperature rise.

Table E-7: Soffit Sensitivity Results..... E-155

Contains results for simulations used in this investigation to determine the sensitivity to an enclosure with a soffit. Includes the simulation Test ID, the HRR used in the simulation, the fire source elevation, the elevation of the temperature prediction, and the maximum time-averaged plume temperature rise.

Table E-8: Thickness of Steel Enclosure Sensitivity Results E-163

Contains results for simulations used in this investigation to determine the sensitivity to the thickness of the enclosure steel walls. Includes the simulation Test ID, the HRR used in the simulation, the fire source elevation, the elevation of the temperature prediction, the maximum time-averaged plume temperature rise, and the thickness of the enclosure walls used in the simulation.

Table E-9: Horizontal Plume Shift and Angle Sensitivity Results E-171

Contains results for simulations used in this investigation to determine the sensitivity to the plume shift angle. Includes the simulation Test ID, the HRR used in the simulation, the fire source elevation, the elevation of the temperature prediction, the maximum time-averaged plume temperature rise, the fire source diameter, the radial distance for the peak plume

temperature rise relative to the center of the enclosure, the radial distance for damage using the point source model for thermoplastic and thermoset targets, and the angle of the plume shift for each value.

Table E-10: Index to Obstructed and Unobstructed Simulation Numbers E-185

Provides an index for matching obstructed and unobstructed simulations used in this investigation.

Table E-11: Index to Opening Sensitivity Simulation Numbers..... E-187

Provides an index for simulations with an opening in the top obstruction

Obstructed Simulation Results

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| ARCH_1054 | 1000 | 0.91 | 0.30 | 2.4 | 402.99 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 2.7 | 249.05 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 3 | 199.53 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 3.3 | 172.57 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 3.6 | 153.99 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 3.9 | 136.7 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 4.2 | 126.62 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 4.5 | 113.14 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 4.8 | 103.21 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 5.1 | 96.109 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 5.4 | 90.815 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1054 | 1000 | 0.91 | 0.30 | 5.7 | 85.55 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filteration Criteria |
|-----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---|
| ARCH_1054 | 1000 | 0.91 | 0.30 | 6 | 81.415 | BASE_404 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 2.4 | 706.62 | BASE_400 | FALSE | Not Filtered |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 2.7 | 459.45 | BASE_400 | FALSE | Not Filtered |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 3 | 337.19 | BASE_400 | FALSE | Not Filtered |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 3.3 | 271.35 | BASE_400 | FALSE | Not Filtered |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 3.6 | 227.5 | BASE_400 | FALSE | Not Filtered |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 3.9 | 201.32 | BASE_400 | FALSE | Not Filtered |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 4.2 | 178.36 | BASE_400 | FALSE | Not Filtered |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 4.5 | 159.08 | BASE_400 | FALSE | Not Filtered |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 4.8 | 143.06 | BASE_400 | FALSE | Not Filtered |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 5.1 | 128.93 | BASE_400 | TRUE | Temperature < 130 C |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 5.4 | 111.59 | BASE_400 | TRUE | Temperature < 130 C |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 5.7 | 101.23 | BASE_400 | TRUE | Temperature < 130 C |
| ARCH_1055 | 1000 | 0.91 | 1.14 | 6 | 94.488 | BASE_400 | TRUE | Temperature < 130 C |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 2.4 | 1071 | BASE_401 | TRUE | Temperature > 800 C |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 2.7 | 999.09 | BASE_401 | TRUE | Temperature > 800 C |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 3 | 888.05 | BASE_401 | TRUE | Temperature > 800 C |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 3.3 | 744.08 | BASE_401 | FALSE | Not Filtered |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 3.6 | 623.99 | BASE_401 | FALSE | Not Filtered |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 3.9 | 505.27 | BASE_401 | FALSE | Not Filtered |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 4.2 | 404.48 | BASE_401 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| ARCH_1056 | 1000 | 0.91 | 1.98 | 4.5 | 327.37 | BASE_401 | FALSE | Not Filtered |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 4.8 | 279.4 | BASE_401 | FALSE | Not Filtered |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 5.1 | 243.14 | BASE_401 | FALSE | Not Filtered |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 5.4 | 217.29 | BASE_401 | FALSE | Not Filtered |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 5.7 | 197.62 | BASE_401 | FALSE | Not Filtered |
| ARCH_1056 | 1000 | 0.91 | 1.98 | 6 | 181.65 | BASE_401 | FALSE | Not Filtered |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 2.4 | 314.81 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 2.7 | 200.08 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 3 | 161.99 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 3.3 | 139.11 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 3.6 | 127.87 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 3.9 | 116.51 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 4.2 | 108.46 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 4.5 | 101.39 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 4.8 | 97.629 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| ARCH_1063 | 1000 | 1.22 | 0.30 | 5.1 | 92.41 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 5.4 | 86.168 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 5.7 | 80.069 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1063 | 1000 | 1.22 | 0.30 | 6 | 77.021 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 2.4 | 518.48 | BASE_402 | FALSE | Not Filtered |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 2.7 | 310.87 | BASE_402 | FALSE | Not Filtered |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 3 | 248.02 | BASE_402 | FALSE | Not Filtered |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 3.3 | 200.07 | BASE_402 | FALSE | Not Filtered |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 3.6 | 173.69 | BASE_402 | FALSE | Not Filtered |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 3.9 | 152.29 | BASE_402 | FALSE | Not Filtered |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 4.2 | 139.64 | BASE_402 | FALSE | Not Filtered |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 4.5 | 125.97 | BASE_402 | TRUE | Temperature < 130 C |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 4.8 | 113.42 | BASE_402 | TRUE | Temperature < 130 C |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 5.1 | 104.74 | BASE_402 | TRUE | Temperature < 130 C |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 5.4 | 96.844 | BASE_402 | TRUE | Temperature < 130 C |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 5.7 | 88.525 | BASE_402 | TRUE | Temperature < 130 C |
| ARCH_1064 | 1000 | 1.22 | 1.14 | 6 | 84.126 | BASE_402 | TRUE | Temperature < 130 C |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 2.4 | 1017.4 | BASE_403 | TRUE | Temperature > 800 C |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 2.7 | 912.53 | BASE_403 | TRUE | Temperature > 800 C |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| ARCH_1065 | 1000 | 1.22 | 1.98 | 3 | 717.19 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 3.3 | 559.48 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 3.6 | 449.2 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 3.9 | 342.39 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 4.2 | 275.39 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 4.5 | 228.68 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 4.8 | 200.89 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 5.1 | 179.61 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 5.4 | 158.36 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 5.7 | 140.7 | BASE_403 | FALSE | Not Filtered |
| ARCH_1065 | 1000 | 1.22 | 1.98 | 6 | 132.26 | BASE_403 | FALSE | Not Filtered |
| ARCH_822 | 50 | 0.30 | 0.30 | 2.4 | 78.421 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_822 | 50 | 0.30 | 0.30 | 2.7 | 61.983 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_822 | 50 | 0.30 | 0.30 | 3 | 54.471 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_822 | 50 | 0.30 | 0.30 | 3.3 | 48.091 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_822 | 50 | 0.30 | 0.30 | 3.6 | 44.856 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_822 | 50 | 0.30 | 0.30 | 3.9 | 41.157 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| ARCH_823 | 100 | 0.30 | 0.30 | 2.4 | 111.96 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_823 | 100 | 0.30 | 0.30 | 2.7 | 85.738 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_823 | 100 | 0.30 | 0.30 | 3 | 73.613 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_823 | 100 | 0.30 | 0.30 | 3.3 | 63.543 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_823 | 100 | 0.30 | 0.30 | 3.6 | 57.189 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_823 | 100 | 0.30 | 0.30 | 3.9 | 51.926 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_823 | 100 | 0.30 | 0.30 | 4.2 | 47.036 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_823 | 100 | 0.30 | 0.30 | 4.5 | 44.597 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_823 | 100 | 0.30 | 0.30 | 4.8 | 42.113 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_829 | 50 | 0.30 | 1.14 | 2.4 | 128.48 | BASE_311 | TRUE | Temperature < 130 C |
| ARCH_829 | 50 | 0.30 | 1.14 | 2.7 | 83.525 | BASE_311 | TRUE | Temperature < 130 C |
| ARCH_829 | 50 | 0.30 | 1.14 | 3 | 65.94 | BASE_311 | TRUE | Temperature < 130 C |
| ARCH_829 | 50 | 0.30 | 1.14 | 3.3 | 55.802 | BASE_311 | TRUE | Temperature < 130 C |
| ARCH_829 | 50 | 0.30 | 1.14 | 3.6 | 50.422 | BASE_311 | TRUE | Temperature < 130 C |
| ARCH_829 | 50 | 0.30 | 1.14 | 3.9 | 45.23 | BASE_311 | TRUE | Temperature < 130 C |
| ARCH_829 | 50 | 0.30 | 1.14 | 4.2 | 42.194 | BASE_311 | TRUE | Temperature < 130 C |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| ARCH_830 | 100 | 0.30 | 1.14 | 2.4 | 218.07 | BASE_312 | FALSE | Not Filtered |
| ARCH_830 | 100 | 0.30 | 1.14 | 2.7 | 132.16 | BASE_312 | FALSE | Not Filtered |
| ARCH_830 | 100 | 0.30 | 1.14 | 3 | 104.18 | BASE_312 | TRUE | Temperature < 130 C |
| ARCH_830 | 100 | 0.30 | 1.14 | 3.3 | 84.312 | BASE_312 | TRUE | Temperature < 130 C |
| ARCH_830 | 100 | 0.30 | 1.14 | 3.6 | 72.088 | BASE_312 | TRUE | Temperature < 130 C |
| ARCH_830 | 100 | 0.30 | 1.14 | 3.9 | 64.197 | BASE_312 | TRUE | Temperature < 130 C |
| ARCH_830 | 100 | 0.30 | 1.14 | 4.2 | 58.619 | BASE_312 | TRUE | Temperature < 130 C |
| ARCH_830 | 100 | 0.30 | 1.14 | 4.5 | 51.953 | BASE_312 | TRUE | Temperature < 130 C |
| ARCH_830 | 100 | 0.30 | 1.14 | 4.8 | 47.76 | BASE_312 | TRUE | Temperature < 130 C |
| ARCH_830 | 100 | 0.30 | 1.14 | 5.1 | 45.075 | BASE_312 | TRUE | Temperature < 130 C |
| ARCH_830 | 100 | 0.30 | 1.14 | 5.4 | 42.484 | BASE_312 | TRUE | Temperature < 130 C |
| ARCH_836 | 50 | 0.30 | 1.98 | 2.4 | 266.03 | BASE_322 | FALSE | Not Filtered |
| ARCH_836 | 50 | 0.30 | 1.98 | 2.7 | 146.04 | BASE_322 | FALSE | Not Filtered |
| ARCH_836 | 50 | 0.30 | 1.98 | 3 | 103.12 | BASE_322 | TRUE | Temperature < 130 C |
| ARCH_836 | 50 | 0.30 | 1.98 | 3.3 | 79.733 | BASE_322 | TRUE | Temperature < 130 C |
| ARCH_836 | 50 | 0.30 | 1.98 | 3.6 | 68.823 | BASE_322 | TRUE | Temperature < 130 C |
| ARCH_836 | 50 | 0.30 | 1.98 | 3.9 | 62.17 | BASE_322 | TRUE | Temperature < 130 C |
| ARCH_836 | 50 | 0.30 | 1.98 | 4.2 | 56.616 | BASE_322 | TRUE | Temperature < 130 C |
| ARCH_836 | 50 | 0.30 | 1.98 | 4.5 | 50.366 | BASE_322 | TRUE | Temperature < 130 C |
| ARCH_836 | 50 | 0.30 | 1.98 | 4.8 | 46.16 | BASE_322 | TRUE | Temperature < 130 C |
| ARCH_836 | 50 | 0.30 | 1.98 | 5.1 | 41.517 | BASE_322 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| ARCH_837 | 100 | 0.30 | 1.98 | 2.4 | 531.44 | BASE_323 | FALSE | Not Filtered |
| ARCH_837 | 100 | 0.30 | 1.98 | 2.7 | 275.75 | BASE_323 | FALSE | Not Filtered |
| ARCH_837 | 100 | 0.30 | 1.98 | 3 | 191.73 | BASE_323 | FALSE | Not Filtered |
| ARCH_837 | 100 | 0.30 | 1.98 | 3.3 | 138.23 | BASE_323 | FALSE | Not Filtered |
| ARCH_837 | 100 | 0.30 | 1.98 | 3.6 | 111.02 | BASE_323 | TRUE | Temperature < 130 C |
| ARCH_837 | 100 | 0.30 | 1.98 | 3.9 | 90.378 | BASE_323 | TRUE | Temperature < 130 C |
| ARCH_837 | 100 | 0.30 | 1.98 | 4.2 | 78.574 | BASE_323 | TRUE | Temperature < 130 C |
| ARCH_837 | 100 | 0.30 | 1.98 | 4.5 | 68.337 | BASE_323 | TRUE | Temperature < 130 C |
| ARCH_837 | 100 | 0.30 | 1.98 | 4.8 | 62.439 | BASE_323 | TRUE | Temperature < 130 C |
| ARCH_837 | 100 | 0.30 | 1.98 | 5.1 | 56.388 | BASE_323 | TRUE | Temperature < 130 C |
| ARCH_837 | 100 | 0.30 | 1.98 | 5.4 | 50.913 | BASE_323 | TRUE | Temperature < 130 C |
| ARCH_837 | 100 | 0.30 | 1.98 | 5.7 | 46.702 | BASE_323 | TRUE | Temperature < 130 C |
| ARCH_837 | 100 | 0.30 | 1.98 | 6 | 43.468 | BASE_323 | TRUE | Temperature < 130 C |
| ARCH_887 | 200 | 0.61 | 0.30 | 2.4 | 148.43 | BASE_302 | TRUE | , Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 2.7 | 100.37 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 3 | 85.081 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 3.3 | 74.859 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 3.6 | 69.47 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| ARCH_887 | 200 | 0.61 | 0.30 | 3.9 | 63.212 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 4.2 | 59.739 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 4.5 | 57.879 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 4.8 | 54.59 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 5.1 | 51.417 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 5.4 | 48.415 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 5.7 | 46.025 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_887 | 200 | 0.61 | 0.30 | 6 | 43.88 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 2.4 | 203.24 | BASE_303 | TRUE | Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 2.7 | 127.89 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 3 | 107.9 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 3.3 | 94.353 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 3.6 | 84.65 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| ARCH_888 | 300 | 0.61 | 0.30 | 3.9 | 77.241 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 4.2 | 72.78 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 4.5 | 67.684 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 4.8 | 61.735 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 5.1 | 56.565 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 5.4 | 51.5 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 5.7 | 48.936 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_888 | 300 | 0.61 | 0.30 | 6 | 46.643 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 2.4 | 255.22 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 2.7 | 157.96 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 3 | 127.64 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 3.3 | 109.23 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 3.6 | 98.671 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| ARCH_889 | 400 | 0.61 | 0.30 | 3.9 | 88.758 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 4.2 | 80.791 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 4.5 | 73.599 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 4.8 | 69.728 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 5.1 | 66.947 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 5.4 | 62.583 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 5.7 | 57.735 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_889 | 400 | 0.61 | 0.30 | 6 | 54.117 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 2.4 | 334.39 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 2.7 | 208.25 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 3 | 163.33 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 3.3 | 136.87 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 3.6 | 120.3 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| ARCH_890 | 500 | 0.61 | 0.30 | 3.9 | 108.92 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 4.2 | 99.827 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 4.5 | 89.634 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 4.8 | 83.218 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 5.1 | 77.533 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 5.4 | 72.565 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 5.7 | 68.466 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_890 | 500 | 0.61 | 0.30 | 6 | 65.06 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 2.4 | 392.93 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 2.7 | 238.68 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 3 | 182.46 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 3.3 | 151.7 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 3.6 | 132.77 | BASE_306 | TRUE | Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| ARCH_891 | 600 | 0.61 | 0.30 | 3.9 | 117.68 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 4.2 | 105.86 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 4.5 | 97.088 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 4.8 | 89.553 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 5.1 | 83.845 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 5.4 | 77.08 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 5.7 | 70.69 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_891 | 600 | 0.61 | 0.30 | 6 | 66.18 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_894 | 200 | 0.61 | 1.14 | 2.4 | 259.92 | BASE_313 | FALSE | Not Filtered |
| ARCH_894 | 200 | 0.61 | 1.14 | 2.7 | 140.83 | BASE_313 | FALSE | Not Filtered |
| ARCH_894 | 200 | 0.61 | 1.14 | 3 | 107.55 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_894 | 200 | 0.61 | 1.14 | 3.3 | 92.404 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_894 | 200 | 0.61 | 1.14 | 3.6 | 80.943 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_894 | 200 | 0.61 | 1.14 | 3.9 | 73.928 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_894 | 200 | 0.61 | 1.14 | 4.2 | 69.147 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_894 | 200 | 0.61 | 1.14 | 4.5 | 60.989 | BASE_313 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| ARCH_894 | 200 | 0.61 | 1.14 | 4.8 | 56.486 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_894 | 200 | 0.61 | 1.14 | 5.1 | 52.641 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_894 | 200 | 0.61 | 1.14 | 5.4 | 49.817 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_894 | 200 | 0.61 | 1.14 | 5.7 | 47.225 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_894 | 200 | 0.61 | 1.14 | 6 | 45.813 | BASE_313 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 2.4 | 350.38 | BASE_314 | FALSE | Not Filtered |
| ARCH_895 | 300 | 0.61 | 1.14 | 2.7 | 192.02 | BASE_314 | FALSE | Not Filtered |
| ARCH_895 | 300 | 0.61 | 1.14 | 3 | 145.64 | BASE_314 | FALSE | Not Filtered |
| ARCH_895 | 300 | 0.61 | 1.14 | 3.3 | 123.78 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 3.6 | 107.6 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 3.9 | 96.495 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 4.2 | 89.162 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 4.5 | 82.797 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 4.8 | 76.094 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 5.1 | 70.124 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 5.4 | 65.595 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 5.7 | 60.586 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_895 | 300 | 0.61 | 1.14 | 6 | 57.174 | BASE_314 | TRUE | Temperature < 130 C |
| ARCH_896 | 400 | 0.61 | 1.14 | 2.4 | 575.97 | BASE_315 | FALSE | Not Filtered |
| ARCH_896 | 400 | 0.61 | 1.14 | 2.7 | 273.67 | BASE_315 | FALSE | Not Filtered |
| ARCH_896 | 400 | 0.61 | 1.14 | 3 | 192.71 | BASE_315 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| ARCH_896 | 400 | 0.61 | 1.14 | 3.3 | 155.45 | BASE_315 | FALSE | Not Filtered |
| ARCH_896 | 400 | 0.61 | 1.14 | 3.6 | 135.42 | BASE_315 | FALSE | Not Filtered |
| ARCH_896 | 400 | 0.61 | 1.14 | 3.9 | 119.35 | BASE_315 | TRUE | Temperature < 130 C |
| ARCH_896 | 400 | 0.61 | 1.14 | 4.2 | 105.99 | BASE_315 | TRUE | Temperature < 130 C |
| ARCH_896 | 400 | 0.61 | 1.14 | 4.5 | 95.01 | BASE_315 | TRUE | Temperature < 130 C |
| ARCH_896 | 400 | 0.61 | 1.14 | 4.8 | 86.706 | BASE_315 | TRUE | Temperature < 130 C |
| ARCH_896 | 400 | 0.61 | 1.14 | 5.1 | 79.523 | BASE_315 | TRUE | Temperature < 130 C |
| ARCH_896 | 400 | 0.61 | 1.14 | 5.4 | 73.124 | BASE_315 | TRUE | Temperature < 130 C |
| ARCH_896 | 400 | 0.61 | 1.14 | 5.7 | 68.01 | BASE_315 | TRUE | Temperature < 130 C |
| ARCH_896 | 400 | 0.61 | 1.14 | 6 | 64.528 | BASE_315 | TRUE | Temperature < 130 C |
| ARCH_897 | 500 | 0.61 | 1.14 | 2.4 | 705.87 | BASE_316 | FALSE | Not Filtered |
| ARCH_897 | 500 | 0.61 | 1.14 | 2.7 | 405.73 | BASE_316 | FALSE | Not Filtered |
| ARCH_897 | 500 | 0.61 | 1.14 | 3 | 275.53 | BASE_316 | FALSE | Not Filtered |
| ARCH_897 | 500 | 0.61 | 1.14 | 3.3 | 207.46 | BASE_316 | FALSE | Not Filtered |
| ARCH_897 | 500 | 0.61 | 1.14 | 3.6 | 175.04 | BASE_316 | FALSE | Not Filtered |
| ARCH_897 | 500 | 0.61 | 1.14 | 3.9 | 151.32 | BASE_316 | FALSE | Not Filtered |
| ARCH_897 | 500 | 0.61 | 1.14 | 4.2 | 134.1 | BASE_316 | FALSE | Not Filtered |
| ARCH_897 | 500 | 0.61 | 1.14 | 4.5 | 116.32 | BASE_316 | TRUE | Temperature < 130 C |
| ARCH_897 | 500 | 0.61 | 1.14 | 4.8 | 105.38 | BASE_316 | TRUE | Temperature < 130 C |
| ARCH_897 | 500 | 0.61 | 1.14 | 5.1 | 98.169 | BASE_316 | TRUE | Temperature < 130 C |
| ARCH_897 | 500 | 0.61 | 1.14 | 5.4 | 90.329 | BASE_316 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| ARCH_897 | 500 | 0.61 | 1.14 | 5.7 | 83.386 | BASE_316 | TRUE | Temperature < 130 C |
| ARCH_897 | 500 | 0.61 | 1.14 | 6 | 77.358 | BASE_316 | TRUE | Temperature < 130 C |
| ARCH_898 | 600 | 0.61 | 1.14 | 2.4 | 777.31 | BASE_317 | FALSE | Not Filtered |
| ARCH_898 | 600 | 0.61 | 1.14 | 2.7 | 455.11 | BASE_317 | FALSE | Not Filtered |
| ARCH_898 | 600 | 0.61 | 1.14 | 3 | 337.58 | BASE_317 | FALSE | Not Filtered |
| ARCH_898 | 600 | 0.61 | 1.14 | 3.3 | 252 | BASE_317 | FALSE | Not Filtered |
| ARCH_898 | 600 | 0.61 | 1.14 | 3.6 | 213.7 | BASE_317 | FALSE | Not Filtered |
| ARCH_898 | 600 | 0.61 | 1.14 | 3.9 | 178.56 | BASE_317 | FALSE | Not Filtered |
| ARCH_898 | 600 | 0.61 | 1.14 | 4.2 | 154.6 | BASE_317 | FALSE | Not Filtered |
| ARCH_898 | 600 | 0.61 | 1.14 | 4.5 | 133.8 | BASE_317 | FALSE | Not Filtered |
| ARCH_898 | 600 | 0.61 | 1.14 | 4.8 | 121.31 | BASE_317 | TRUE | Temperature < 130 C |
| ARCH_898 | 600 | 0.61 | 1.14 | 5.1 | 107.65 | BASE_317 | TRUE | Temperature < 130 C |
| ARCH_898 | 600 | 0.61 | 1.14 | 5.4 | 97.561 | BASE_317 | TRUE | Temperature < 130 C |
| ARCH_898 | 600 | 0.61 | 1.14 | 5.7 | 89.094 | BASE_317 | TRUE | Temperature < 130 C |
| ARCH_898 | 600 | 0.61 | 1.14 | 6 | 82.72 | BASE_317 | TRUE | Temperature < 130 C |
| ARCH_901 | 200 | 0.61 | 1.98 | 2.4 | 693.58 | BASE_324 | FALSE | Not Filtered |
| ARCH_901 | 200 | 0.61 | 1.98 | 2.7 | 369.88 | BASE_324 | FALSE | Not Filtered |
| ARCH_901 | 200 | 0.61 | 1.98 | 3 | 253.64 | BASE_324 | FALSE | Not Filtered |
| ARCH_901 | 200 | 0.61 | 1.98 | 3.3 | 194.13 | BASE_324 | FALSE | Not Filtered |
| ARCH_901 | 200 | 0.61 | 1.98 | 3.6 | 161.03 | BASE_324 | FALSE | Not Filtered |
| ARCH_901 | 200 | 0.61 | 1.98 | 3.9 | 130.93 | BASE_324 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| ARCH_901 | 200 | 0.61 | 1.98 | 4.2 | 111.32 | BASE_324 | TRUE | Temperature < 130 C |
| ARCH_901 | 200 | 0.61 | 1.98 | 4.5 | 97.46 | BASE_324 | TRUE | Temperature < 130 C |
| ARCH_901 | 200 | 0.61 | 1.98 | 4.8 | 89.489 | BASE_324 | TRUE | Temperature < 130 C |
| ARCH_901 | 200 | 0.61 | 1.98 | 5.1 | 82.647 | BASE_324 | TRUE | Temperature < 130 C |
| ARCH_901 | 200 | 0.61 | 1.98 | 5.4 | 72.712 | BASE_324 | TRUE | Temperature < 130 C |
| ARCH_901 | 200 | 0.61 | 1.98 | 5.7 | 65.348 | BASE_324 | TRUE | Temperature < 130 C |
| ARCH_901 | 200 | 0.61 | 1.98 | 6 | 59.505 | BASE_324 | TRUE | Temperature < 130 C |
| ARCH_902 | 300 | 0.61 | 1.98 | 2.4 | 931.25 | BASE_325 | TRUE | Temperature > 800 C |
| ARCH_902 | 300 | 0.61 | 1.98 | 2.7 | 657.24 | BASE_325 | FALSE | Not Filtered |
| ARCH_902 | 300 | 0.61 | 1.98 | 3 | 450.61 | BASE_325 | FALSE | Not Filtered |
| ARCH_902 | 300 | 0.61 | 1.98 | 3.3 | 345.15 | BASE_325 | FALSE | Not Filtered |
| ARCH_902 | 300 | 0.61 | 1.98 | 3.6 | 272.2 | BASE_325 | FALSE | Not Filtered |
| ARCH_902 | 300 | 0.61 | 1.98 | 3.9 | 214.8 | BASE_325 | FALSE | Not Filtered |
| ARCH_902 | 300 | 0.61 | 1.98 | 4.2 | 178.08 | BASE_325 | FALSE | Not Filtered |
| ARCH_902 | 300 | 0.61 | 1.98 | 4.5 | 146.34 | BASE_325 | FALSE | Not Filtered |
| ARCH_902 | 300 | 0.61 | 1.98 | 4.8 | 129.83 | BASE_325 | TRUE | Temperature < 130 C |
| ARCH_902 | 300 | 0.61 | 1.98 | 5.1 | 118.19 | BASE_325 | TRUE | Temperature < 130 C |
| ARCH_902 | 300 | 0.61 | 1.98 | 5.4 | 101.98 | BASE_325 | TRUE | Temperature < 130 C |
| ARCH_902 | 300 | 0.61 | 1.98 | 5.7 | 92.618 | BASE_325 | TRUE | Temperature < 130 C |
| ARCH_902 | 300 | 0.61 | 1.98 | 6 | 86.111 | BASE_325 | TRUE | Temperature < 130 C |
| ARCH_903 | 400 | 0.61 | 1.98 | 2.4 | 1006.2 | BASE_326 | TRUE | Temperature > 800 C |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| ARCH_903 | 400 | 0.61 | 1.98 | 2.7 | 884.94 | BASE_326 | TRUE | Temperature > 800 C |
| ARCH_903 | 400 | 0.61 | 1.98 | 3 | 712.12 | BASE_326 | FALSE | Not Filtered |
| ARCH_903 | 400 | 0.61 | 1.98 | 3.3 | 515.23 | BASE_326 | FALSE | Not Filtered |
| ARCH_903 | 400 | 0.61 | 1.98 | 3.6 | 387.41 | BASE_326 | FALSE | Not Filtered |
| ARCH_903 | 400 | 0.61 | 1.98 | 3.9 | 289.44 | BASE_326 | FALSE | Not Filtered |
| ARCH_903 | 400 | 0.61 | 1.98 | 4.2 | 232.59 | BASE_326 | FALSE | Not Filtered |
| ARCH_903 | 400 | 0.61 | 1.98 | 4.5 | 183.52 | BASE_326 | FALSE | Not Filtered |
| ARCH_903 | 400 | 0.61 | 1.98 | 4.8 | 157.37 | BASE_326 | FALSE | Not Filtered |
| ARCH_903 | 400 | 0.61 | 1.98 | 5.1 | 138.3 | BASE_326 | FALSE | Not Filtered |
| ARCH_903 | 400 | 0.61 | 1.98 | 5.4 | 121.29 | BASE_326 | TRUE | Temperature < 130 C |
| ARCH_903 | 400 | 0.61 | 1.98 | 5.7 | 108.2 | BASE_326 | TRUE | Temperature < 130 C |
| ARCH_903 | 400 | 0.61 | 1.98 | 6 | 99.461 | BASE_326 | TRUE | Temperature < 130 C |
| ARCH_904 | 500 | 0.61 | 1.98 | 2.4 | 1057.3 | BASE_327 | TRUE | Temperature > 800 C |
| ARCH_904 | 500 | 0.61 | 1.98 | 2.7 | 1014.7 | BASE_327 | TRUE | Temperature > 800 C |
| ARCH_904 | 500 | 0.61 | 1.98 | 3 | 921.04 | BASE_327 | TRUE | Temperature > 800 C |
| ARCH_904 | 500 | 0.61 | 1.98 | 3.3 | 753.53 | BASE_327 | FALSE | Not Filtered |
| ARCH_904 | 500 | 0.61 | 1.98 | 3.6 | 594.4 | BASE_327 | FALSE | Not Filtered |
| ARCH_904 | 500 | 0.61 | 1.98 | 3.9 | 434.66 | BASE_327 | FALSE | Not Filtered |
| ARCH_904 | 500 | 0.61 | 1.98 | 4.2 | 334.39 | BASE_327 | FALSE | Not Filtered |
| ARCH_904 | 500 | 0.61 | 1.98 | 4.5 | 256.69 | BASE_327 | FALSE | Not Filtered |
| ARCH_904 | 500 | 0.61 | 1.98 | 4.8 | 213.59 | BASE_327 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--|
| ARCH_904 | 500 | 0.61 | 1.98 | 5.1 | 182.15 | BASE_327 | FALSE | Not Filtered |
| ARCH_904 | 500 | 0.61 | 1.98 | 5.4 | 158.1 | BASE_327 | FALSE | Not Filtered |
| ARCH_904 | 500 | 0.61 | 1.98 | 5.7 | 135.49 | BASE_327 | FALSE | Not Filtered |
| ARCH_904 | 500 | 0.61 | 1.98 | 6 | 119.78 | BASE_327 | TRUE | Temperature < 130 C |
| ARCH_905 | 600 | 0.61 | 1.98 | 2.4 | 1103.1 | BASE_328 | TRUE | Temperature > 800 C |
| ARCH_905 | 600 | 0.61 | 1.98 | 2.7 | 1061.1 | BASE_328 | TRUE | Temperature > 800 C |
| ARCH_905 | 600 | 0.61 | 1.98 | 3 | 1012.7 | BASE_328 | TRUE | Temperature > 800 C |
| ARCH_905 | 600 | 0.61 | 1.98 | 3.3 | 890.92 | BASE_328 | TRUE | Temperature > 800 C |
| ARCH_905 | 600 | 0.61 | 1.98 | 3.6 | 734.06 | BASE_328 | FALSE | Not Filtered |
| ARCH_905 | 600 | 0.61 | 1.98 | 3.9 | 533.68 | BASE_328 | FALSE | Not Filtered |
| ARCH_905 | 600 | 0.61 | 1.98 | 4.2 | 418.77 | BASE_328 | FALSE | Not Filtered |
| ARCH_905 | 600 | 0.61 | 1.98 | 4.5 | 319.55 | BASE_328 | FALSE | Not Filtered |
| ARCH_905 | 600 | 0.61 | 1.98 | 4.8 | 263.95 | BASE_328 | FALSE | Not Filtered |
| ARCH_905 | 600 | 0.61 | 1.98 | 5.1 | 218.04 | BASE_328 | FALSE | Not Filtered |
| ARCH_905 | 600 | 0.61 | 1.98 | 5.4 | 182.57 | BASE_328 | FALSE | Not Filtered |
| ARCH_905 | 600 | 0.61 | 1.98 | 5.7 | 154.08 | BASE_328 | FALSE | Not Filtered |
| ARCH_905 | 600 | 0.61 | 1.98 | 6 | 136.82 | BASE_328 | FALSE | Not Filtered |
| ARCH_951 | 300 | 0.91 | 0.30 | 2.4 | 142.3 | BASE_307 | TRUE | Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 2.7 | 100.22 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| ARCH_951 | 300 | 0.91 | 0.30 | 3 | 85.336 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 3.3 | 75.533 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 3.6 | 71.239 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 3.9 | 65.25 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 4.2 | 61.878 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 4.5 | 57.541 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 4.8 | 54.979 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 5.1 | 52.798 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 5.4 | 51.555 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 5.7 | 49.802 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_951 | 300 | 0.91 | 0.30 | 6 | 47.649 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 2.4 | 181.52 | BASE_308 | TRUE | Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 2.7 | 119.53 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-------------|---------------------|-------------------------|------------------------------|--------------------------|---|--------------------------|--------------------------|--|
| ARCH_952 | 400 | 0.91 | 0.30 | 3 | 101.81 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 3.3 | 90.742 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 3.6 | 82.895 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 3.9 | 76.825 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 4.2 | 71.033 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 4.5 | 66.905 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 4.8 | 63.285 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 5.1 | 60.726 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 5.4 | 58.829 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 5.7 | 56.644 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_952 | 400 | 0.91 | 0.30 | 6 | 54.836 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 2.4 | 222.62 | BASE_309 | TRUE | Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 2.7 | 144.54 | BASE_309 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| ARCH_953 | 500 | 0.91 | 0.30 | 3 | 119.47 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 3.3 | 104.67 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 3.6 | 97.276 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 3.9 | 88.925 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 4.2 | 81.512 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 4.5 | 76.345 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 4.8 | 72.617 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 5.1 | 70.106 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 5.4 | 67.562 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 5.7 | 65.966 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_953 | 500 | 0.91 | 0.30 | 6 | 63.074 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 2.4 | 249.34 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 2.7 | 160.57 | BASE_310 | TRUE | Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filteration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| ARCH_954 | 600 | 0.91 | 0.30 | 3 | 131.61 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 3.3 | 115.48 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 3.6 | 105.73 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 3.9 | 96.502 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 4.2 | 88.467 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 4.5 | 81.004 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 4.8 | 75.232 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 5.1 | 71.754 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 5.4 | 68.018 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 5.7 | 65.049 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_954 | 600 | 0.91 | 0.30 | 6 | 63.057 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| ARCH_958 | 300 | 0.91 | 1.14 | 2.4 | 221.52 | BASE_318 | FALSE | Not Filtered |
| ARCH_958 | 300 | 0.91 | 1.14 | 2.7 | 135.52 | BASE_318 | FALSE | Not Filtered |
| ARCH_958 | 300 | 0.91 | 1.14 | 3 | 109.65 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_958 | 300 | 0.91 | 1.14 | 3.3 | 94 | BASE_318 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| ARCH_958 | 300 | 0.91 | 1.14 | 3.6 | 82.876 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_958 | 300 | 0.91 | 1.14 | 3.9 | 74.375 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_958 | 300 | 0.91 | 1.14 | 4.2 | 69.917 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_958 | 300 | 0.91 | 1.14 | 4.5 | 64.995 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_958 | 300 | 0.91 | 1.14 | 4.8 | 60.525 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_958 | 300 | 0.91 | 1.14 | 5.1 | 57.31 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_958 | 300 | 0.91 | 1.14 | 5.4 | 54.302 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_958 | 300 | 0.91 | 1.14 | 5.7 | 51.35 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_958 | 300 | 0.91 | 1.14 | 6 | 49.543 | BASE_318 | TRUE | Temperature < 130 C |
| ARCH_959 | 400 | 0.91 | 1.14 | 2.4 | 274.49 | BASE_319 | FALSE | Not Filtered |
| ARCH_959 | 400 | 0.91 | 1.14 | 2.7 | 170.19 | BASE_319 | FALSE | Not Filtered |
| ARCH_959 | 400 | 0.91 | 1.14 | 3 | 135.72 | BASE_319 | FALSE | Not Filtered |
| ARCH_959 | 400 | 0.91 | 1.14 | 3.3 | 111.31 | BASE_319 | TRUE | Temperature < 130 C |
| ARCH_959 | 400 | 0.91 | 1.14 | 3.6 | 97.466 | BASE_319 | TRUE | Temperature < 130 C |
| ARCH_959 | 400 | 0.91 | 1.14 | 3.9 | 88.814 | BASE_319 | TRUE | Temperature < 130 C |
| ARCH_959 | 400 | 0.91 | 1.14 | 4.2 | 83.577 | BASE_319 | TRUE | Temperature < 130 C |
| ARCH_959 | 400 | 0.91 | 1.14 | 4.5 | 77.256 | BASE_319 | TRUE | Temperature < 130 C |
| ARCH_959 | 400 | 0.91 | 1.14 | 4.8 | 72.615 | BASE_319 | TRUE | Temperature < 130 C |
| ARCH_959 | 400 | 0.91 | 1.14 | 5.1 | 66.86 | BASE_319 | TRUE | Temperature < 130 C |
| ARCH_959 | 400 | 0.91 | 1.14 | 5.4 | 61.074 | BASE_319 | TRUE | Temperature < 130 C |
| ARCH_959 | 400 | 0.91 | 1.14 | 5.7 | 56.642 | BASE_319 | TRUE | Temperature < 130 C |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| ARCH_959 | 400 | 0.91 | 1.14 | 6 | 53.967 | BASE_319 | TRUE | Temperature < 130 C |
| ARCH_960 | 500 | 0.91 | 1.14 | 2.4 | 371.76 | BASE_320 | FALSE | Not Filtered |
| ARCH_960 | 500 | 0.91 | 1.14 | 2.7 | 206.86 | BASE_320 | FALSE | Not Filtered |
| ARCH_960 | 500 | 0.91 | 1.14 | 3 | 166.01 | BASE_320 | FALSE | Not Filtered |
| ARCH_960 | 500 | 0.91 | 1.14 | 3.3 | 137.15 | BASE_320 | FALSE | Not Filtered |
| ARCH_960 | 500 | 0.91 | 1.14 | 3.6 | 120.9 | BASE_320 | TRUE | Temperature < 130 C |
| ARCH_960 | 500 | 0.91 | 1.14 | 3.9 | 110.17 | BASE_320 | TRUE | Temperature < 130 C |
| ARCH_960 | 500 | 0.91 | 1.14 | 4.2 | 100.36 | BASE_320 | TRUE | Temperature < 130 C |
| ARCH_960 | 500 | 0.91 | 1.14 | 4.5 | 91.016 | BASE_320 | TRUE | Temperature < 130 C |
| ARCH_960 | 500 | 0.91 | 1.14 | 4.8 | 84.619 | BASE_320 | TRUE | Temperature < 130 C |
| ARCH_960 | 500 | 0.91 | 1.14 | 5.1 | 79.613 | BASE_320 | TRUE | Temperature < 130 C |
| ARCH_960 | 500 | 0.91 | 1.14 | 5.4 | 72.486 | BASE_320 | TRUE | Temperature < 130 C |
| ARCH_960 | 500 | 0.91 | 1.14 | 5.7 | 65.353 | BASE_320 | TRUE | Temperature < 130 C |
| ARCH_960 | 500 | 0.91 | 1.14 | 6 | 61.863 | BASE_320 | TRUE | Temperature < 130 C |
| ARCH_961 | 600 | 0.91 | 1.14 | 2.4 | 432.98 | BASE_321 | FALSE | Not Filtered |
| ARCH_961 | 600 | 0.91 | 1.14 | 2.7 | 237.42 | BASE_321 | FALSE | Not Filtered |
| ARCH_961 | 600 | 0.91 | 1.14 | 3 | 184.16 | BASE_321 | FALSE | Not Filtered |
| ARCH_961 | 600 | 0.91 | 1.14 | 3.3 | 152.43 | BASE_321 | FALSE | Not Filtered |
| ARCH_961 | 600 | 0.91 | 1.14 | 3.6 | 133.03 | BASE_321 | FALSE | Not Filtered |
| ARCH_961 | 600 | 0.91 | 1.14 | 3.9 | 119.15 | BASE_321 | TRUE | Temperature < 130 C |
| ARCH_961 | 600 | 0.91 | 1.14 | 4.2 | 109.24 | BASE_321 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| ARCH_961 | 600 | 0.91 | 1.14 | 4.5 | 100.67 | BASE_321 | TRUE | Temperature < 130 C |
| ARCH_961 | 600 | 0.91 | 1.14 | 4.8 | 92.7 | BASE_321 | TRUE | Temperature < 130 C |
| ARCH_961 | 600 | 0.91 | 1.14 | 5.1 | 86.482 | BASE_321 | TRUE | Temperature < 130 C |
| ARCH_961 | 600 | 0.91 | 1.14 | 5.4 | 80.763 | BASE_321 | TRUE | Temperature < 130 C |
| ARCH_961 | 600 | 0.91 | 1.14 | 5.7 | 73.875 | BASE_321 | TRUE | Temperature < 130 C |
| ARCH_961 | 600 | 0.91 | 1.14 | 6 | 68.907 | BASE_321 | TRUE | Temperature < 130 C |
| ARCH_965 | 300 | 0.91 | 1.98 | 2.4 | 607.47 | BASE_329 | FALSE | Not Filtered |
| ARCH_965 | 300 | 0.91 | 1.98 | 2.7 | 331.53 | BASE_329 | FALSE | Not Filtered |
| ARCH_965 | 300 | 0.91 | 1.98 | 3 | 232.09 | BASE_329 | FALSE | Not Filtered |
| ARCH_965 | 300 | 0.91 | 1.98 | 3.3 | 177.64 | BASE_329 | FALSE | Not Filtered |
| ARCH_965 | 300 | 0.91 | 1.98 | 3.6 | 146.25 | BASE_329 | FALSE | Not Filtered |
| ARCH_965 | 300 | 0.91 | 1.98 | 3.9 | 126.7 | BASE_329 | TRUE | Temperature < 130 C |
| ARCH_965 | 300 | 0.91 | 1.98 | 4.2 | 112.7 | BASE_329 | TRUE | Temperature < 130 C |
| ARCH_965 | 300 | 0.91 | 1.98 | 4.5 | 98.797 | BASE_329 | TRUE | Temperature < 130 C |
| ARCH_965 | 300 | 0.91 | 1.98 | 4.8 | 90.066 | BASE_329 | TRUE | Temperature < 130 C |
| ARCH_965 | 300 | 0.91 | 1.98 | 5.1 | 83.373 | BASE_329 | TRUE | Temperature < 130 C |
| ARCH_965 | 300 | 0.91 | 1.98 | 5.4 | 78.82 | BASE_329 | TRUE | Temperature < 130 C |
| ARCH_965 | 300 | 0.91 | 1.98 | 5.7 | 73.241 | BASE_329 | TRUE | Temperature < 130 C |
| ARCH_965 | 300 | 0.91 | 1.98 | 6 | 68.812 | BASE_329 | TRUE | Temperature < 130 C |
| ARCH_966 | 400 | 0.91 | 1.98 | 2.4 | 868.44 | BASE_330 | TRUE | Temperature > 800 C |
| ARCH_966 | 400 | 0.91 | 1.98 | 2.7 | 552.14 | BASE_330 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| ARCH_966 | 400 | 0.91 | 1.98 | 3 | 368 | BASE_330 | FALSE | Not Filtered |
| ARCH_966 | 400 | 0.91 | 1.98 | 3.3 | 275.26 | BASE_330 | FALSE | Not Filtered |
| ARCH_966 | 400 | 0.91 | 1.98 | 3.6 | 219.12 | BASE_330 | FALSE | Not Filtered |
| ARCH_966 | 400 | 0.91 | 1.98 | 3.9 | 180.14 | BASE_330 | FALSE | Not Filtered |
| ARCH_966 | 400 | 0.91 | 1.98 | 4.2 | 154.08 | BASE_330 | FALSE | Not Filtered |
| ARCH_966 | 400 | 0.91 | 1.98 | 4.5 | 130.46 | BASE_330 | FALSE | Not Filtered |
| ARCH_966 | 400 | 0.91 | 1.98 | 4.8 | 114.68 | BASE_330 | TRUE | Temperature < 130 C |
| ARCH_966 | 400 | 0.91 | 1.98 | 5.1 | 102.07 | BASE_330 | TRUE | Temperature < 130 C |
| ARCH_966 | 400 | 0.91 | 1.98 | 5.4 | 92.363 | BASE_330 | TRUE | Temperature < 130 C |
| ARCH_966 | 400 | 0.91 | 1.98 | 5.7 | 85.204 | BASE_330 | TRUE | Temperature < 130 C |
| ARCH_966 | 400 | 0.91 | 1.98 | 6 | 80.246 | BASE_330 | TRUE | Temperature < 130 C |
| ARCH_967 | 500 | 0.91 | 1.98 | 2.4 | 887.06 | BASE_331 | TRUE | Temperature > 800 C |
| ARCH_967 | 500 | 0.91 | 1.98 | 2.7 | 642.57 | BASE_331 | FALSE | Not Filtered |
| ARCH_967 | 500 | 0.91 | 1.98 | 3 | 449.19 | BASE_331 | FALSE | Not Filtered |
| ARCH_967 | 500 | 0.91 | 1.98 | 3.3 | 324.39 | BASE_331 | FALSE | Not Filtered |
| ARCH_967 | 500 | 0.91 | 1.98 | 3.6 | 252.72 | BASE_331 | FALSE | Not Filtered |
| ARCH_967 | 500 | 0.91 | 1.98 | 3.9 | 216.54 | BASE_331 | FALSE | Not Filtered |
| ARCH_967 | 500 | 0.91 | 1.98 | 4.2 | 183.63 | BASE_331 | FALSE | Not Filtered |
| ARCH_967 | 500 | 0.91 | 1.98 | 4.5 | 153.81 | BASE_331 | FALSE | Not Filtered |
| ARCH_967 | 500 | 0.91 | 1.98 | 4.8 | 134.52 | BASE_331 | FALSE | Not Filtered |
| ARCH_967 | 500 | 0.91 | 1.98 | 5.1 | 119.4 | BASE_331 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--------------------------------------|
| ARCH_967 | 500 | 0.91 | 1.98 | 5.4 | 107.44 | BASE_331 | TRUE | Temperature < 130 C |
| ARCH_967 | 500 | 0.91 | 1.98 | 5.7 | 98.525 | BASE_331 | TRUE | Temperature < 130 C |
| ARCH_967 | 500 | 0.91 | 1.98 | 6 | 91.036 | BASE_331 | TRUE | Temperature < 130 C |
| ARCH_968 | 600 | 0.91 | 1.98 | 2.4 | 965.8 | BASE_332 | TRUE | Temperature > 800 C |
| ARCH_968 | 600 | 0.91 | 1.98 | 2.7 | 717.36 | BASE_332 | FALSE | Not Filtered |
| ARCH_968 | 600 | 0.91 | 1.98 | 3 | 549.99 | BASE_332 | FALSE | Not Filtered |
| ARCH_968 | 600 | 0.91 | 1.98 | 3.3 | 412.15 | BASE_332 | FALSE | Not Filtered |
| ARCH_968 | 600 | 0.91 | 1.98 | 3.6 | 311.81 | BASE_332 | FALSE | Not Filtered |
| ARCH_968 | 600 | 0.91 | 1.98 | 3.9 | 245.14 | BASE_332 | FALSE | Not Filtered |
| ARCH_968 | 600 | 0.91 | 1.98 | 4.2 | 209.01 | BASE_332 | FALSE | Not Filtered |
| ARCH_968 | 600 | 0.91 | 1.98 | 4.5 | 173.48 | BASE_332 | FALSE | Not Filtered |
| ARCH_968 | 600 | 0.91 | 1.98 | 4.8 | 149.83 | BASE_332 | FALSE | Not Filtered |
| ARCH_968 | 600 | 0.91 | 1.98 | 5.1 | 131.62 | BASE_332 | FALSE | Not Filtered |
| ARCH_968 | 600 | 0.91 | 1.98 | 5.4 | 118.34 | BASE_332 | TRUE | Temperature < 130 C |
| ARCH_968 | 600 | 0.91 | 1.98 | 5.7 | 106.75 | BASE_332 | TRUE | Temperature < 130 C |
| ARCH_968 | 600 | 0.91 | 1.98 | 6 | 99.896 | BASE_332 | TRUE | Temperature < 130 C |
| OBST_1051 | 1000 | 0.91 | 0.30 | 2.4 | 533.89 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 2.7 | 422.39 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 3 | 340.68 | BASE_404 | TRUE | Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--------------------------------------|
| OBST_1051 | 1000 | 0.91 | 0.30 | 3.3 | 270.01 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 3.6 | 233.57 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 3.9 | 215.99 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 4.2 | 206.03 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 4.5 | 193.24 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 4.8 | 182.06 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 5.1 | 172.23 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 5.4 | 163.41 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 5.7 | 155.42 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1051 | 1000 | 0.91 | 0.30 | 6 | 147.94 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| OBST_1052 | 1000 | 0.91 | 1.14 | 2.4 | 828.59 | BASE_400 | TRUE | Temperature > 800 C |
| OBST_1052 | 1000 | 0.91 | 1.14 | 2.7 | 639.49 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 3 | 485.41 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 3.3 | 380.12 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 3.6 | 338.6 | BASE_400 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_1052 | 1000 | 0.91 | 1.14 | 3.9 | 319.22 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 4.2 | 306.21 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 4.5 | 288.02 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 4.8 | 270.8 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 5.1 | 255.33 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 5.4 | 236.32 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 5.7 | 219.16 | BASE_400 | FALSE | Not Filtered |
| OBST_1052 | 1000 | 0.91 | 1.14 | 6 | 204.84 | BASE_400 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 2.4 | 1086.9 | BASE_401 | TRUE | Temperature > 800 C |
| OBST_1053 | 1000 | 0.91 | 1.98 | 2.7 | 883.59 | BASE_401 | TRUE | Temperature > 800 C |
| OBST_1053 | 1000 | 0.91 | 1.98 | 3 | 823.73 | BASE_401 | TRUE | Temperature > 800 C |
| OBST_1053 | 1000 | 0.91 | 1.98 | 3.3 | 734.4 | BASE_401 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 3.6 | 670.23 | BASE_401 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 3.9 | 596.13 | BASE_401 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 4.2 | 534.31 | BASE_401 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 4.5 | 470.83 | BASE_401 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 4.8 | 424.86 | BASE_401 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 5.1 | 382.82 | BASE_401 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 5.4 | 333 | BASE_401 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 5.7 | 293.13 | BASE_401 | FALSE | Not Filtered |
| OBST_1053 | 1000 | 0.91 | 1.98 | 6 | 258.54 | BASE_401 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--------------------------------------|
| OBST_1060 | 1000 | 1.22 | 0.30 | 2.4 | 397.06 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 2.7 | 319.73 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 3 | 250.83 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 3.3 | 197.52 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 3.6 | 182.14 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 3.9 | 171.16 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 4.2 | 163.99 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 4.5 | 157.72 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 4.8 | 152.54 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 5.1 | 147.72 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 5.4 | 141.96 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 5.7 | 135.56 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| OBST_1060 | 1000 | 1.22 | 0.30 | 6 | 131.27 | BASE_405 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_1061 | 1000 | 1.22 | 1.14 | 2.4 | 688.56 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 2.7 | 513.44 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 3 | 396.9 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 3.3 | 320.69 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 3.6 | 279.7 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 3.9 | 255.99 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 4.2 | 239.89 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 4.5 | 226.26 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 4.8 | 216.94 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 5.1 | 207.38 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 5.4 | 196.74 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 5.7 | 184 | BASE_402 | FALSE | Not Filtered |
| OBST_1061 | 1000 | 1.22 | 1.14 | 6 | 172.26 | BASE_402 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 2.4 | 1024.3 | BASE_403 | TRUE | Temperature > 800 C |
| OBST_1062 | 1000 | 1.22 | 1.98 | 2.7 | 743.77 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 3 | 668.11 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 3.3 | 599.14 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 3.6 | 551 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 3.9 | 494.5 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 4.2 | 446.72 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 4.5 | 405.71 | BASE_403 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|-----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| OBST_1062 | 1000 | 1.22 | 1.98 | 4.8 | 367.67 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 5.1 | 333.88 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 5.4 | 295.56 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 5.7 | 259.91 | BASE_403 | FALSE | Not Filtered |
| OBST_1062 | 1000 | 1.22 | 1.98 | 6 | 233 | BASE_403 | FALSE | Not Filtered |
| OBST_801 | 50 | 0.30 | 0.30 | 2.4 | 87.091 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_801 | 50 | 0.30 | 0.30 | 2.7 | 74.382 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_801 | 50 | 0.30 | 0.30 | 3 | 67.295 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_801 | 50 | 0.30 | 0.30 | 3.3 | 60.832 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_801 | 50 | 0.30 | 0.30 | 3.6 | 56.846 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_801 | 50 | 0.30 | 0.30 | 3.9 | 53.889 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_801 | 50 | 0.30 | 0.30 | 4.2 | 51.386 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_801 | 50 | 0.30 | 0.30 | 4.5 | 48.698 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_801 | 50 | 0.30 | 0.30 | 4.8 | 45.556 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_801 | 50 | 0.30 | 0.30 | 5.1 | 43.585 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| OBST_801 | 50 | 0.30 | 0.30 | 5.4 | 40.939 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 2.4 | 150.06 | BASE_301 | TRUE | Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 2.7 | 115.07 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 3 | 106.42 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 3.3 | 97.657 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 3.6 | 88.334 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 3.9 | 81.554 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 4.2 | 74.802 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 4.5 | 67.73 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 4.8 | 64.039 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 5.1 | 60.336 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 5.4 | 56.214 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_802 | 100 | 0.30 | 0.30 | 5.7 | 52.062 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filteration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--|
| OBST_802 | 100 | 0.30 | 0.30 | 6 | 49.453 | BASE_301 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_808 | 50 | 0.30 | 1.14 | 2.4 | 138.47 | BASE_311 | FALSE | Not Filtered |
| OBST_808 | 50 | 0.30 | 1.14 | 2.7 | 100.55 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 3 | 82.454 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 3.3 | 75.188 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 3.6 | 70.849 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 3.9 | 66.382 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 4.2 | 62.626 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 4.5 | 58.6 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 4.8 | 54.769 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 5.1 | 51.378 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 5.4 | 48.644 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 5.7 | 45.892 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_808 | 50 | 0.30 | 1.14 | 6 | 44.185 | BASE_311 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 2.4 | 235.87 | BASE_312 | FALSE | Not Filtered |
| OBST_809 | 100 | 0.30 | 1.14 | 2.7 | 155.85 | BASE_312 | FALSE | Not Filtered |
| OBST_809 | 100 | 0.30 | 1.14 | 3 | 121.47 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 3.3 | 110.1 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 3.6 | 100.82 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 3.9 | 91.194 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 4.2 | 84.456 | BASE_312 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| OBST_809 | 100 | 0.30 | 1.14 | 4.5 | 77.93 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 4.8 | 72.592 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 5.1 | 67.397 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 5.4 | 62.75 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 5.7 | 59.553 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_809 | 100 | 0.30 | 1.14 | 6 | 56.916 | BASE_312 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 2.4 | 238.53 | BASE_322 | FALSE | Not Filtered |
| OBST_815 | 50 | 0.30 | 1.98 | 2.7 | 142.51 | BASE_322 | FALSE | Not Filtered |
| OBST_815 | 50 | 0.30 | 1.98 | 3 | 107.22 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 3.3 | 93.883 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 3.6 | 86.855 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 3.9 | 78.339 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 4.2 | 71.221 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 4.5 | 63.611 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 4.8 | 58.549 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 5.1 | 55.323 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 5.4 | 51.364 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 5.7 | 47.838 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_815 | 50 | 0.30 | 1.98 | 6 | 45.651 | BASE_322 | TRUE | Temperature < 130 C |
| OBST_816 | 100 | 0.30 | 1.98 | 2.4 | 434.45 | BASE_323 | FALSE | Not Filtered |
| OBST_816 | 100 | 0.30 | 1.98 | 2.7 | 227.23 | BASE_323 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| OBST_816 | 100 | 0.30 | 1.98 | 3 | 170.7 | BASE_323 | FALSE | Not Filtered |
| OBST_816 | 100 | 0.30 | 1.98 | 3.3 | 145.87 | BASE_323 | FALSE | Not Filtered |
| OBST_816 | 100 | 0.30 | 1.98 | 3.6 | 130.11 | BASE_323 | FALSE | Not Filtered |
| OBST_816 | 100 | 0.30 | 1.98 | 3.9 | 116.02 | BASE_323 | TRUE | Temperature < 130 C |
| OBST_816 | 100 | 0.30 | 1.98 | 4.2 | 104.88 | BASE_323 | TRUE | Temperature < 130 C |
| OBST_816 | 100 | 0.30 | 1.98 | 4.5 | 91.788 | BASE_323 | TRUE | Temperature < 130 C |
| OBST_816 | 100 | 0.30 | 1.98 | 4.8 | 84.026 | BASE_323 | TRUE | Temperature < 130 C |
| OBST_816 | 100 | 0.30 | 1.98 | 5.1 | 78.137 | BASE_323 | TRUE | Temperature < 130 C |
| OBST_816 | 100 | 0.30 | 1.98 | 5.4 | 71.948 | BASE_323 | TRUE | Temperature < 130 C |
| OBST_816 | 100 | 0.30 | 1.98 | 5.7 | 66.311 | BASE_323 | TRUE | Temperature < 130 C |
| OBST_816 | 100 | 0.30 | 1.98 | 6 | 62.282 | BASE_323 | TRUE | Temperature < 130 C |
| OBST_866 | 200 | 0.61 | 0.30 | 2.4 | 164.84 | BASE_302 | TRUE | Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 2.7 | 132.51 | BASE_302 | TRUE | Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 3 | 107.21 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 3.3 | 95.331 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 3.6 | 91.403 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 3.9 | 87.841 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| OBST_866 | 200 | 0.61 | 0.30 | 4.2 | 85.424 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 4.5 | 81.446 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 4.8 | 77.871 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 5.1 | 74.707 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 5.4 | 70.967 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 5.7 | 67.65 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_866 | 200 | 0.61 | 0.30 | 6 | 65.534 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 2.4 | 222.46 | BASE_303 | TRUE | Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 2.7 | 180.68 | BASE_303 | TRUE | Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 3 | 140.38 | BASE_303 | TRUE | Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 3.3 | 122.94 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 3.6 | 116.1 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 3.9 | 110.06 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| OBST_867 | 300 | 0.61 | 0.30 | 4.2 | 105.24 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 4.5 | 99.731 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 4.8 | 95.923 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 5.1 | 91.96 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 5.4 | 86.163 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 5.7 | 81.681 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_867 | 300 | 0.61 | 0.30 | 6 | 78.494 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 2.4 | 291.34 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 2.7 | 240.71 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 3 | 182.9 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 3.3 | 153 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 3.6 | 139.81 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 3.9 | 130.81 | BASE_304 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| OBST_868 | 400 | 0.61 | 0.30 | 4.2 | 123.93 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 4.5 | 117.05 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 4.8 | 111.78 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 5.1 | 107.26 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 5.4 | 101.33 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 5.7 | 97.187 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_868 | 400 | 0.61 | 0.30 | 6 | 92.575 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 2.4 | 360.38 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 2.7 | 296.38 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 3 | 226.34 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 3.3 | 187.21 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 3.6 | 176.3 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 3.9 | 161.36 | BASE_305 | TRUE | Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| OBST_869 | 500 | 0.61 | 0.30 | 4.2 | 151.9 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 4.5 | 142.66 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 4.8 | 135.24 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 5.1 | 128.53 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 5.4 | 120.48 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 5.7 | 112.01 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_869 | 500 | 0.61 | 0.30 | 6 | 105.22 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 2.4 | 444.1 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 2.7 | 366.54 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 3 | 267.05 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 3.3 | 208.14 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 3.6 | 196.87 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 3.9 | 187.62 | BASE_306 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filteration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| OBST_870 | 600 | 0.61 | 0.30 | 4.2 | 177.69 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 4.5 | 166.61 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 4.8 | 156.15 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 5.1 | 146.03 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 5.4 | 136.86 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 5.7 | 127.13 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_870 | 600 | 0.61 | 0.30 | 6 | 118.31 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_873 | 200 | 0.61 | 1.14 | 2.4 | 252.79 | BASE_313 | FALSE | Not Filtered |
| OBST_873 | 200 | 0.61 | 1.14 | 2.7 | 178.78 | BASE_313 | FALSE | Not Filtered |
| OBST_873 | 200 | 0.61 | 1.14 | 3 | 139.76 | BASE_313 | FALSE | Not Filtered |
| OBST_873 | 200 | 0.61 | 1.14 | 3.3 | 114.89 | BASE_313 | TRUE | Temperature < 130 C |
| OBST_873 | 200 | 0.61 | 1.14 | 3.6 | 109.86 | BASE_313 | TRUE | Temperature < 130 C |
| OBST_873 | 200 | 0.61 | 1.14 | 3.9 | 105.51 | BASE_313 | TRUE | Temperature < 130 C |
| OBST_873 | 200 | 0.61 | 1.14 | 4.2 | 98.993 | BASE_313 | TRUE | Temperature < 130 C |
| OBST_873 | 200 | 0.61 | 1.14 | 4.5 | 92.343 | BASE_313 | TRUE | Temperature < 130 C |
| OBST_873 | 200 | 0.61 | 1.14 | 4.8 | 91.944 | BASE_313 | TRUE | Temperature < 130 C |
| OBST_873 | 200 | 0.61 | 1.14 | 5.1 | 88.838 | BASE_313 | TRUE | Temperature < 130 C |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_873 | 200 | 0.61 | 1.14 | 5.4 | 79.482 | BASE_313 | TRUE | Temperature < 130 C |
| OBST_873 | 200 | 0.61 | 1.14 | 5.7 | 75.88 | BASE_313 | TRUE | Temperature < 130 C |
| OBST_873 | 200 | 0.61 | 1.14 | 6 | 73.076 | BASE_313 | TRUE | Temperature < 130 C |
| OBST_874 | 300 | 0.61 | 1.14 | 2.4 | 368.65 | BASE_314 | FALSE | Not Filtered |
| OBST_874 | 300 | 0.61 | 1.14 | 2.7 | 245.86 | BASE_314 | FALSE | Not Filtered |
| OBST_874 | 300 | 0.61 | 1.14 | 3 | 184.52 | BASE_314 | FALSE | Not Filtered |
| OBST_874 | 300 | 0.61 | 1.14 | 3.3 | 156.76 | BASE_314 | FALSE | Not Filtered |
| OBST_874 | 300 | 0.61 | 1.14 | 3.6 | 146.93 | BASE_314 | FALSE | Not Filtered |
| OBST_874 | 300 | 0.61 | 1.14 | 3.9 | 141.51 | BASE_314 | FALSE | Not Filtered |
| OBST_874 | 300 | 0.61 | 1.14 | 4.2 | 136.21 | BASE_314 | FALSE | Not Filtered |
| OBST_874 | 300 | 0.61 | 1.14 | 4.5 | 128.41 | BASE_314 | TRUE | Temperature < 130 C |
| OBST_874 | 300 | 0.61 | 1.14 | 4.8 | 121.42 | BASE_314 | TRUE | Temperature < 130 C |
| OBST_874 | 300 | 0.61 | 1.14 | 5.1 | 113.6 | BASE_314 | TRUE | Temperature < 130 C |
| OBST_874 | 300 | 0.61 | 1.14 | 5.4 | 105.07 | BASE_314 | TRUE | Temperature < 130 C |
| OBST_874 | 300 | 0.61 | 1.14 | 5.7 | 97.706 | BASE_314 | TRUE | Temperature < 130 C |
| OBST_874 | 300 | 0.61 | 1.14 | 6 | 93.251 | BASE_314 | TRUE | Temperature < 130 C |
| OBST_875 | 400 | 0.61 | 1.14 | 2.4 | 527.19 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 2.7 | 351.26 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 3 | 254.18 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 3.3 | 201.11 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 3.6 | 188.81 | BASE_315 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| OBST_875 | 400 | 0.61 | 1.14 | 3.9 | 177.84 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 4.2 | 169.98 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 4.5 | 162.77 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 4.8 | 154.43 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 5.1 | 146.06 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 5.4 | 135.51 | BASE_315 | FALSE | Not Filtered |
| OBST_875 | 400 | 0.61 | 1.14 | 5.7 | 124.66 | BASE_315 | TRUE | Temperature < 130 C |
| OBST_875 | 400 | 0.61 | 1.14 | 6 | 117.1 | BASE_315 | TRUE | Temperature < 130 C |
| OBST_876 | 500 | 0.61 | 1.14 | 2.4 | 670.82 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 2.7 | 454.57 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 3 | 325.36 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 3.3 | 246.23 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 3.6 | 230.64 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 3.9 | 220.37 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 4.2 | 209.08 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 4.5 | 196.49 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 4.8 | 185.18 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 5.1 | 174.3 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 5.4 | 162.71 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 5.7 | 150.55 | BASE_316 | FALSE | Not Filtered |
| OBST_876 | 500 | 0.61 | 1.14 | 6 | 140.12 | BASE_316 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_877 | 600 | 0.61 | 1.14 | 2.4 | 805.93 | BASE_317 | TRUE | Temperature > 800 C |
| OBST_877 | 600 | 0.61 | 1.14 | 2.7 | 574.34 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 3 | 403.91 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 3.3 | 299.89 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 3.6 | 267.2 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 3.9 | 252.02 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 4.2 | 238.02 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 4.5 | 220.1 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 4.8 | 206.1 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 5.1 | 194.77 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 5.4 | 183.24 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 5.7 | 170.25 | BASE_317 | FALSE | Not Filtered |
| OBST_877 | 600 | 0.61 | 1.14 | 6 | 157.23 | BASE_317 | FALSE | Not Filtered |
| OBST_880 | 200 | 0.61 | 1.98 | 2.4 | 604.85 | BASE_324 | FALSE | Not Filtered |
| OBST_880 | 200 | 0.61 | 1.98 | 2.7 | 379.73 | BASE_324 | FALSE | Not Filtered |
| OBST_880 | 200 | 0.61 | 1.98 | 3 | 281.92 | BASE_324 | FALSE | Not Filtered |
| OBST_880 | 200 | 0.61 | 1.98 | 3.3 | 206.03 | BASE_324 | FALSE | Not Filtered |
| OBST_880 | 200 | 0.61 | 1.98 | 3.6 | 163.97 | BASE_324 | FALSE | Not Filtered |
| OBST_880 | 200 | 0.61 | 1.98 | 3.9 | 135.19 | BASE_324 | FALSE | Not Filtered |
| OBST_880 | 200 | 0.61 | 1.98 | 4.2 | 120.13 | BASE_324 | TRUE | Temperature < 130 C |
| OBST_880 | 200 | 0.61 | 1.98 | 4.5 | 114.48 | BASE_324 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_880 | 200 | 0.61 | 1.98 | 4.8 | 108.02 | BASE_324 | TRUE | Temperature < 130 C |
| OBST_880 | 200 | 0.61 | 1.98 | 5.1 | 101.9 | BASE_324 | TRUE | Temperature < 130 C |
| OBST_880 | 200 | 0.61 | 1.98 | 5.4 | 92.323 | BASE_324 | TRUE | Temperature < 130 C |
| OBST_880 | 200 | 0.61 | 1.98 | 5.7 | 84.71 | BASE_324 | TRUE | Temperature < 130 C |
| OBST_880 | 200 | 0.61 | 1.98 | 6 | 79.047 | BASE_324 | TRUE | Temperature < 130 C |
| OBST_881 | 300 | 0.61 | 1.98 | 2.4 | 756.24 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 2.7 | 518.35 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 3 | 352.98 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 3.3 | 273.32 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 3.6 | 234.24 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 3.9 | 213.54 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 4.2 | 199.06 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 4.5 | 179.94 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 4.8 | 165.89 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 5.1 | 153.19 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 5.4 | 138.07 | BASE_325 | FALSE | Not Filtered |
| OBST_881 | 300 | 0.61 | 1.98 | 5.7 | 124.6 | BASE_325 | TRUE | Temperature < 130 C |
| OBST_881 | 300 | 0.61 | 1.98 | 6 | 114.21 | BASE_325 | TRUE | Temperature < 130 C |
| OBST_882 | 400 | 0.61 | 1.98 | 2.4 | 894.05 | BASE_326 | TRUE | Temperature > 800 C |
| OBST_882 | 400 | 0.61 | 1.98 | 2.7 | 596.62 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 3 | 471.3 | BASE_326 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_882 | 400 | 0.61 | 1.98 | 3.3 | 398.26 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 3.6 | 356 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 3.9 | 315.04 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 4.2 | 285.76 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 4.5 | 253.9 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 4.8 | 223.38 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 5.1 | 200.05 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 5.4 | 175.4 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 5.7 | 154.3 | BASE_326 | FALSE | Not Filtered |
| OBST_882 | 400 | 0.61 | 1.98 | 6 | 139.3 | BASE_326 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 2.4 | 1025 | BASE_327 | TRUE | Temperature > 800 C |
| OBST_883 | 500 | 0.61 | 1.98 | 2.7 | 767.26 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 3 | 593.89 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 3.3 | 517.17 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 3.6 | 457.04 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 3.9 | 396.41 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 4.2 | 349.43 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 4.5 | 305.67 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 4.8 | 272.27 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 5.1 | 247.61 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 5.4 | 220 | BASE_327 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--|
| OBST_883 | 500 | 0.61 | 1.98 | 5.7 | 194.5 | BASE_327 | FALSE | Not Filtered |
| OBST_883 | 500 | 0.61 | 1.98 | 6 | 175.45 | BASE_327 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 2.4 | 1097.7 | BASE_328 | TRUE | Temperature > 800 C |
| OBST_884 | 600 | 0.61 | 1.98 | 2.7 | 859.9 | BASE_328 | TRUE | Temperature > 800 C |
| OBST_884 | 600 | 0.61 | 1.98 | 3 | 742.72 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 3.3 | 652.09 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 3.6 | 576.72 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 3.9 | 500.69 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 4.2 | 448.14 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 4.5 | 394.23 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 4.8 | 347.72 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 5.1 | 304.84 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 5.4 | 262.25 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 5.7 | 230.22 | BASE_328 | FALSE | Not Filtered |
| OBST_884 | 600 | 0.61 | 1.98 | 6 | 206.23 | BASE_328 | FALSE | Not Filtered |
| OBST_930 | 300 | 0.91 | 0.30 | 2.4 | 160.04 | BASE_307 | TRUE | Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 2.7 | 128.35 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 3 | 99.968 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 3.3 | 87.329 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--|
| OBST_930 | 300 | 0.91 | 0.30 | 3.6 | 84.8 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 3.9 | 81.026 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 4.2 | 79.399 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 4.5 | 77.372 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 4.8 | 75.677 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 5.1 | 73.803 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 5.4 | 71.873 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 5.7 | 69.841 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_930 | 300 | 0.91 | 0.30 | 6 | 67.783 | BASE_307 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 2.4 | 200.28 | BASE_308 | TRUE | Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 2.7 | 159.04 | BASE_308 | TRUE | Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 3 | 127.39 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 3.3 | 109.61 | BASE_308 | TRUE | Temperature < 130 C , Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| OBST_931 | 400 | 0.91 | 0.30 | 3.6 | 104.4 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 3.9 | 100.86 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 4.2 | 97.017 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 4.5 | 93.238 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 4.8 | 90.169 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 5.1 | 86.888 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 5.4 | 83.318 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 5.7 | 80.717 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_931 | 400 | 0.91 | 0.30 | 6 | 77.924 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 2.4 | 252.84 | BASE_309 | TRUE | Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 2.7 | 197.23 | BASE_309 | TRUE | Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 3 | 155.39 | BASE_309 | TRUE | Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 3.3 | 133.65 | BASE_309 | TRUE | Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| OBST_932 | 500 | 0.91 | 0.30 | 3.6 | 125.14 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 3.9 | 120.05 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 4.2 | 115.56 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 4.5 | 111.08 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 4.8 | 108.49 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 5.1 | 106.33 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 5.4 | 103.09 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 5.7 | 99.274 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_932 | 500 | 0.91 | 0.30 | 6 | 95.942 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 2.4 | 305.13 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 2.7 | 237.66 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 3 | 189.79 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 3.3 | 160.75 | BASE_310 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filteration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| OBST_933 | 600 | 0.91 | 0.30 | 3.6 | 148.5 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 3.9 | 139.86 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 4.2 | 135 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 4.5 | 130.94 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 4.8 | 126.3 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 5.1 | 121.48 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 5.4 | 116.38 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 5.7 | 112.08 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_933 | 600 | 0.91 | 0.30 | 6 | 108.23 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| OBST_937 | 300 | 0.91 | 1.14 | 2.4 | 256.44 | BASE_318 | FALSE | Not Filtered |
| OBST_937 | 300 | 0.91 | 1.14 | 2.7 | 190.78 | BASE_318 | FALSE | Not Filtered |
| OBST_937 | 300 | 0.91 | 1.14 | 3 | 146.6 | BASE_318 | FALSE | Not Filtered |
| OBST_937 | 300 | 0.91 | 1.14 | 3.3 | 128.92 | BASE_318 | TRUE | Temperature < 130 C |
| OBST_937 | 300 | 0.91 | 1.14 | 3.6 | 122.18 | BASE_318 | TRUE | Temperature < 130 C |
| OBST_937 | 300 | 0.91 | 1.14 | 3.9 | 115.48 | BASE_318 | TRUE | Temperature < 130 C |
| OBST_937 | 300 | 0.91 | 1.14 | 4.2 | 110.78 | BASE_318 | TRUE | Temperature < 130 C |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_937 | 300 | 0.91 | 1.14 | 4.5 | 105.77 | BASE_318 | TRUE | Temperature < 130 C |
| OBST_937 | 300 | 0.91 | 1.14 | 4.8 | 101.51 | BASE_318 | TRUE | Temperature < 130 C |
| OBST_937 | 300 | 0.91 | 1.14 | 5.1 | 97.445 | BASE_318 | TRUE | Temperature < 130 C |
| OBST_937 | 300 | 0.91 | 1.14 | 5.4 | 93.173 | BASE_318 | TRUE | Temperature < 130 C |
| OBST_937 | 300 | 0.91 | 1.14 | 5.7 | 88.159 | BASE_318 | TRUE | Temperature < 130 C |
| OBST_937 | 300 | 0.91 | 1.14 | 6 | 84.368 | BASE_318 | TRUE | Temperature < 130 C |
| OBST_938 | 400 | 0.91 | 1.14 | 2.4 | 345.72 | BASE_319 | FALSE | Not Filtered |
| OBST_938 | 400 | 0.91 | 1.14 | 2.7 | 232.8 | BASE_319 | FALSE | Not Filtered |
| OBST_938 | 400 | 0.91 | 1.14 | 3 | 182.85 | BASE_319 | FALSE | Not Filtered |
| OBST_938 | 400 | 0.91 | 1.14 | 3.3 | 156.65 | BASE_319 | FALSE | Not Filtered |
| OBST_938 | 400 | 0.91 | 1.14 | 3.6 | 147.22 | BASE_319 | FALSE | Not Filtered |
| OBST_938 | 400 | 0.91 | 1.14 | 3.9 | 141.22 | BASE_319 | FALSE | Not Filtered |
| OBST_938 | 400 | 0.91 | 1.14 | 4.2 | 136.82 | BASE_319 | FALSE | Not Filtered |
| OBST_938 | 400 | 0.91 | 1.14 | 4.5 | 130.48 | BASE_319 | FALSE | Not Filtered |
| OBST_938 | 400 | 0.91 | 1.14 | 4.8 | 124.77 | BASE_319 | TRUE | Temperature < 130 C |
| OBST_938 | 400 | 0.91 | 1.14 | 5.1 | 119.2 | BASE_319 | TRUE | Temperature < 130 C |
| OBST_938 | 400 | 0.91 | 1.14 | 5.4 | 112.58 | BASE_319 | TRUE | Temperature < 130 C |
| OBST_938 | 400 | 0.91 | 1.14 | 5.7 | 106.5 | BASE_319 | TRUE | Temperature < 130 C |
| OBST_938 | 400 | 0.91 | 1.14 | 6 | 100.49 | BASE_319 | TRUE | Temperature < 130 C |
| OBST_939 | 500 | 0.91 | 1.14 | 2.4 | 440.75 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 2.7 | 305.96 | BASE_320 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_939 | 500 | 0.91 | 1.14 | 3 | 224.42 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 3.3 | 186.46 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 3.6 | 176.39 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 3.9 | 169.66 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 4.2 | 164.02 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 4.5 | 156.28 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 4.8 | 149.36 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 5.1 | 141.6 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 5.4 | 132.1 | BASE_320 | FALSE | Not Filtered |
| OBST_939 | 500 | 0.91 | 1.14 | 5.7 | 122.61 | BASE_320 | TRUE | Temperature < 130 C |
| OBST_939 | 500 | 0.91 | 1.14 | 6 | 114.99 | BASE_320 | TRUE | Temperature < 130 C |
| OBST_940 | 600 | 0.91 | 1.14 | 2.4 | 562.49 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 2.7 | 385.62 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 3 | 292.81 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 3.3 | 240.08 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 3.6 | 214.75 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 3.9 | 196.25 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 4.2 | 187.07 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 4.5 | 179.33 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 4.8 | 172.41 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 5.1 | 165.68 | BASE_321 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_940 | 600 | 0.91 | 1.14 | 5.4 | 156.24 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 5.7 | 145.56 | BASE_321 | FALSE | Not Filtered |
| OBST_940 | 600 | 0.91 | 1.14 | 6 | 136.35 | BASE_321 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 2.4 | 448.28 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 2.7 | 294.2 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 3 | 230.14 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 3.3 | 198.17 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 3.6 | 190.23 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 3.9 | 182.18 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 4.2 | 172.71 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 4.5 | 161.02 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 4.8 | 150.26 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 5.1 | 139.52 | BASE_329 | FALSE | Not Filtered |
| OBST_944 | 300 | 0.91 | 1.98 | 5.4 | 127.37 | BASE_329 | TRUE | Temperature < 130 C |
| OBST_944 | 300 | 0.91 | 1.98 | 5.7 | 116.2 | BASE_329 | TRUE | Temperature < 130 C |
| OBST_944 | 300 | 0.91 | 1.98 | 6 | 106.93 | BASE_329 | TRUE | Temperature < 130 C |
| OBST_945 | 400 | 0.91 | 1.98 | 2.4 | 634.19 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 2.7 | 393.3 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 3 | 320.01 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 3.3 | 271.01 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 3.6 | 256.39 | BASE_330 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| OBST_945 | 400 | 0.91 | 1.98 | 3.9 | 242.45 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 4.2 | 224.26 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 4.5 | 202.73 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 4.8 | 185.73 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 5.1 | 169.17 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 5.4 | 151.88 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 5.7 | 135.11 | BASE_330 | FALSE | Not Filtered |
| OBST_945 | 400 | 0.91 | 1.98 | 6 | 123.31 | BASE_330 | TRUE | Temperature < 130 C |
| OBST_946 | 500 | 0.91 | 1.98 | 2.4 | 766.89 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 2.7 | 474.78 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 3 | 395.78 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 3.3 | 350.79 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 3.6 | 323.72 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 3.9 | 302.66 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 4.2 | 280.58 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 4.5 | 255.83 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 4.8 | 233.31 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 5.1 | 210.86 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 5.4 | 188.4 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 5.7 | 165.77 | BASE_331 | FALSE | Not Filtered |
| OBST_946 | 500 | 0.91 | 1.98 | 6 | 150.43 | BASE_331 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--------------------------------------|
| OBST_947 | 600 | 0.91 | 1.98 | 2.4 | 908.27 | BASE_332 | TRUE | Temperature > 800 C |
| OBST_947 | 600 | 0.91 | 1.98 | 2.7 | 586.87 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 3 | 489.56 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 3.3 | 448.06 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 3.6 | 410.02 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 3.9 | 371.04 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 4.2 | 338.75 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 4.5 | 299.61 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 4.8 | 266.02 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 5.1 | 237.54 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 5.4 | 209.53 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 5.7 | 184.54 | BASE_332 | FALSE | Not Filtered |
| OBST_947 | 600 | 0.91 | 1.98 | 6 | 167.13 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 2.4 | 621.54 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 2.7 | 405.17 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 3 | 294.64 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 3.3 | 232.75 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 3.6 | 196.9 | BASE_404 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filteration Criteria |
|----------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 3.9 | 169.25 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 4.2 | 152.11 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 4.5 | 138.74 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 4.8 | 131.68 | BASE_404 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 5.1 | 121.29 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 5.4 | 109.71 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 5.7 | 103.98 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1057 | 1000 | 0.91 | 0.30 | 6 | 99.867 | BASE_404 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 2.4 | 889.87 | BASE_400 | TRUE | Temperature > 800 C |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 2.7 | 640.76 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 3 | 504.86 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 3.3 | 401.71 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 3.6 | 339.8 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 3.9 | 284.72 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 4.2 | 250.82 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 4.5 | 215.58 | BASE_400 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--------------------------------------|
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 4.8 | 188.42 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 5.1 | 166.49 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 5.4 | 146.15 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 5.7 | 135.05 | BASE_400 | FALSE | Not Filtered |
| THREEWALL_1058 | 1000 | 0.91 | 1.14 | 6 | 126.88 | BASE_400 | TRUE | Temperature < 130 C |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 2.4 | 1062.2 | BASE_401 | TRUE | Temperature > 800 C |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 2.7 | 1070.8 | BASE_401 | TRUE | Temperature > 800 C |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 3 | 1025.2 | BASE_401 | TRUE | Temperature > 800 C |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 3.3 | 921.05 | BASE_401 | TRUE | Temperature > 800 C |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 3.6 | 827.48 | BASE_401 | TRUE | Temperature > 800 C |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 3.9 | 666.54 | BASE_401 | FALSE | Not Filtered |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 4.2 | 547.72 | BASE_401 | FALSE | Not Filtered |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 4.5 | 431.6 | BASE_401 | FALSE | Not Filtered |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 4.8 | 354.89 | BASE_401 | FALSE | Not Filtered |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 5.1 | 306.67 | BASE_401 | FALSE | Not Filtered |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 5.4 | 264.2 | BASE_401 | FALSE | Not Filtered |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 5.7 | 227.16 | BASE_401 | FALSE | Not Filtered |
| THREEWALL_1059 | 1000 | 0.91 | 1.98 | 6 | 206.73 | BASE_401 | FALSE | Not Filtered |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 2.4 | 429.91 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 2.7 | 269.44 | BASE_405 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filteration Criteria |
|----------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 3 | 211.98 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 3.3 | 185.78 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 3.6 | 165.07 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 3.9 | 141.74 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 4.2 | 133.48 | BASE_405 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 4.5 | 125.97 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 4.8 | 115.34 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 5.1 | 107.39 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 5.4 | 99.885 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 5.7 | 93.595 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1066 | 1000 | 1.22 | 0.30 | 6 | 89.031 | BASE_405 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 2.4 | 683.06 | BASE_402 | FALSE | Not Filtered |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 2.7 | 460.84 | BASE_402 | FALSE | Not Filtered |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 3 | 363.31 | BASE_402 | FALSE | Not Filtered |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 3.3 | 299.81 | BASE_402 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 3.6 | 255.01 | BASE_402 | FALSE | Not Filtered |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 3.9 | 210.95 | BASE_402 | FALSE | Not Filtered |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 4.2 | 187.89 | BASE_402 | FALSE | Not Filtered |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 4.5 | 161.24 | BASE_402 | FALSE | Not Filtered |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 4.8 | 145.62 | BASE_402 | FALSE | Not Filtered |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 5.1 | 132.94 | BASE_402 | FALSE | Not Filtered |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 5.4 | 122.79 | BASE_402 | TRUE | Temperature < 130 C |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 5.7 | 114.24 | BASE_402 | TRUE | Temperature < 130 C |
| THREEWALL_1067 | 1000 | 1.22 | 1.14 | 6 | 108.6 | BASE_402 | TRUE | Temperature < 130 C |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 2.4 | 1071.1 | BASE_403 | TRUE | Temperature > 800 C |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 2.7 | 1067.8 | BASE_403 | TRUE | Temperature > 800 C |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 3 | 1011.9 | BASE_403 | TRUE | Temperature > 800 C |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 3.3 | 858.81 | BASE_403 | TRUE | Temperature > 800 C |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 3.6 | 679.45 | BASE_403 | FALSE | Not Filtered |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 3.9 | 516.14 | BASE_403 | FALSE | Not Filtered |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 4.2 | 417.07 | BASE_403 | FALSE | Not Filtered |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 4.5 | 338.85 | BASE_403 | FALSE | Not Filtered |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 4.8 | 292.29 | BASE_403 | FALSE | Not Filtered |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 5.1 | 254.15 | BASE_403 | FALSE | Not Filtered |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 5.4 | 224.04 | BASE_403 | FALSE | Not Filtered |
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 5.7 | 199.74 | BASE_403 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|----------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| THREEWALL_1068 | 1000 | 1.22 | 1.98 | 6 | 181.86 | BASE_403 | FALSE | Not Filtered |
| THREEWALL_843 | 50 | 0.30 | 0.30 | 2.4 | 106.22 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_843 | 50 | 0.30 | 0.30 | 2.7 | 69.818 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_843 | 50 | 0.30 | 0.30 | 3 | 58.899 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_843 | 50 | 0.30 | 0.30 | 3.3 | 50.866 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_843 | 50 | 0.30 | 0.30 | 3.6 | 46.842 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_843 | 50 | 0.30 | 0.30 | 3.9 | 43.306 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_843 | 50 | 0.30 | 0.30 | 4.2 | 40.867 | BASE_300 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 2.4 | 151.65 | BASE_301 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 2.7 | 99.551 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 3 | 85.142 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 3.3 | 73.312 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 3.6 | 64.692 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| THREEWALL_844 | 100 | 0.30 | 0.30 | 3.9 | 59.171 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 4.2 | 54.595 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 4.5 | 51.396 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 4.8 | 47.861 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 5.1 | 45.037 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 5.4 | 42.201 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_844 | 100 | 0.30 | 0.30 | 5.7 | 40.709 | BASE_301 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 2.4 | 175.3 | BASE_311 | FALSE | Not Filtered |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 2.7 | 107.81 | BASE_311 | TRUE | Temperature < 130 C |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 3 | 89.936 | BASE_311 | TRUE | Temperature < 130 C |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 3.3 | 75.701 | BASE_311 | TRUE | Temperature < 130 C |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 3.6 | 66.33 | BASE_311 | TRUE | Temperature < 130 C |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 3.9 | 58.179 | BASE_311 | TRUE | Temperature < 130 C |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 4.2 | 52.582 | BASE_311 | TRUE | Temperature < 130 C |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 4.5 | 47.396 | BASE_311 | TRUE | Temperature < 130 C |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 4.8 | 43.576 | BASE_311 | TRUE | Temperature < 130 C |
| THREEWALL_850 | 50 | 0.30 | 1.14 | 5.1 | 42.094 | BASE_311 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| THREEWALL_851 | 100 | 0.30 | 1.14 | 2.4 | 275.53 | BASE_312 | FALSE | Not Filtered |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 2.7 | 159.25 | BASE_312 | FALSE | Not Filtered |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 3 | 127.63 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 3.3 | 105.49 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 3.6 | 91.185 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 3.9 | 80.914 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 4.2 | 74.131 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 4.5 | 66.294 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 4.8 | 61.449 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 5.1 | 57.622 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 5.4 | 53.854 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 5.7 | 49.889 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_851 | 100 | 0.30 | 1.14 | 6 | 47.38 | BASE_312 | TRUE | Temperature < 130 C |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 2.4 | 435.6 | BASE_322 | FALSE | Not Filtered |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 2.7 | 255.48 | BASE_322 | FALSE | Not Filtered |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 3 | 177.34 | BASE_322 | FALSE | Not Filtered |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 3.3 | 131.29 | BASE_322 | FALSE | Not Filtered |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 3.6 | 103.33 | BASE_322 | TRUE | Temperature < 130 C |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 3.9 | 86.596 | BASE_322 | TRUE | Temperature < 130 C |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 4.2 | 75.4 | BASE_322 | TRUE | Temperature < 130 C |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 4.5 | 64.238 | BASE_322 | TRUE | Temperature < 130 C |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|--------------------------------------|
| THREEWALL_857 | 50 | 0.30 | 1.98 | 4.8 | 57.548 | BASE_322 | TRUE | Temperature < 130 C |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 5.1 | 52.801 | BASE_322 | TRUE | Temperature < 130 C |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 5.4 | 49.598 | BASE_322 | TRUE | Temperature < 130 C |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 5.7 | 45.826 | BASE_322 | TRUE | Temperature < 130 C |
| THREEWALL_857 | 50 | 0.30 | 1.98 | 6 | 43.713 | BASE_322 | TRUE | Temperature < 130 C |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 2.4 | 820.14 | BASE_323 | TRUE | Temperature > 800 C |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 2.7 | 530.25 | BASE_323 | FALSE | Not Filtered |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 3 | 347.37 | BASE_323 | FALSE | Not Filtered |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 3.3 | 238.83 | BASE_323 | FALSE | Not Filtered |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 3.6 | 189.87 | BASE_323 | FALSE | Not Filtered |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 3.9 | 155.33 | BASE_323 | FALSE | Not Filtered |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 4.2 | 129.01 | BASE_323 | TRUE | Temperature < 130 C |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 4.5 | 106.66 | BASE_323 | TRUE | Temperature < 130 C |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 4.8 | 92.817 | BASE_323 | TRUE | Temperature < 130 C |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 5.1 | 82.359 | BASE_323 | TRUE | Temperature < 130 C |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 5.4 | 72.31 | BASE_323 | TRUE | Temperature < 130 C |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 5.7 | 65.47 | BASE_323 | TRUE | Temperature < 130 C |
| THREEWALL_858 | 100 | 0.30 | 1.98 | 6 | 59.874 | BASE_323 | TRUE | Temperature < 130 C |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 2.4 | 209.07 | BASE_302 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 2.7 | 138.48 | BASE_302 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| THREEWALL_908 | 200 | 0.61 | 0.30 | 3 | 110.24 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 3.3 | 92.241 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 3.6 | 86.418 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 3.9 | 79.258 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 4.2 | 72.942 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 4.5 | 68.566 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 4.8 | 64.97 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 5.1 | 61.531 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 5.4 | 57.966 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 5.7 | 55.271 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_908 | 200 | 0.61 | 0.30 | 6 | 53.819 | BASE_302 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 2.4 | 294.83 | BASE_303 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 2.7 | 191.52 | BASE_303 | TRUE | Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| THREEWALL_909 | 300 | 0.61 | 0.30 | 3 | 149.7 | BASE_303 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 3.3 | 122.65 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 3.6 | 109.56 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 3.9 | 100.78 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 4.2 | 93.85 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 4.5 | 84.794 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 4.8 | 78.946 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 5.1 | 73.842 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 5.4 | 69.304 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 5.7 | 66.545 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_909 | 300 | 0.61 | 0.30 | 6 | 63.528 | BASE_303 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 2.4 | 383.52 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 2.7 | 228.97 | BASE_304 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| THREEWALL_910 | 400 | 0.61 | 0.30 | 3 | 183.34 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 3.3 | 151.37 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 3.6 | 133.13 | BASE_304 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 3.9 | 117.64 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 4.2 | 104.51 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 4.5 | 94.862 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 4.8 | 88.761 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 5.1 | 84.237 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 5.4 | 78.224 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 5.7 | 72.443 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_910 | 400 | 0.61 | 0.30 | 6 | 68.486 | BASE_304 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 2.4 | 540.81 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 2.7 | 328 | BASE_305 | TRUE | Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| THREEWALL_911 | 500 | 0.61 | 0.30 | 3 | 244.14 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 3.3 | 192.58 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 3.6 | 164.65 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 3.9 | 141.73 | BASE_305 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 4.2 | 127.64 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 4.5 | 114.66 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 4.8 | 105.09 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 5.1 | 98.004 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 5.4 | 90.971 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 5.7 | 83.486 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_911 | 500 | 0.61 | 0.30 | 6 | 78.099 | BASE_305 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 2.4 | 627.21 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 2.7 | 383.78 | BASE_306 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filteration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| THREEWALL_912 | 600 | 0.61 | 0.30 | 3 | 277.38 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 3.3 | 220.14 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 3.6 | 186.98 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 3.9 | 160.79 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 4.2 | 139.96 | BASE_306 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 4.5 | 120.03 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 4.8 | 108.42 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 5.1 | 99.334 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 5.4 | 91.383 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 5.7 | 84.312 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_912 | 600 | 0.61 | 0.30 | 6 | 81.252 | BASE_306 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 2.4 | 320.06 | BASE_313 | FALSE | Not Filtered |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 2.7 | 179.86 | BASE_313 | FALSE | Not Filtered |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 3 | 154.36 | BASE_313 | FALSE | Not Filtered |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 3.3 | 128.98 | BASE_313 | TRUE | Temperature < 130 C |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| THREEWALL_915 | 200 | 0.61 | 1.14 | 3.6 | 113.2 | BASE_313 | TRUE | Temperature < 130 C |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 3.9 | 106.12 | BASE_313 | TRUE | Temperature < 130 C |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 4.2 | 94.481 | BASE_313 | TRUE | Temperature < 130 C |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 4.5 | 87.577 | BASE_313 | TRUE | Temperature < 130 C |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 4.8 | 85.132 | BASE_313 | TRUE | Temperature < 130 C |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 5.1 | 71.536 | BASE_313 | TRUE | Temperature < 130 C |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 5.4 | 66.804 | BASE_313 | TRUE | Temperature < 130 C |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 5.7 | 62.677 | BASE_313 | TRUE | Temperature < 130 C |
| THREEWALL_915 | 200 | 0.61 | 1.14 | 6 | 58.233 | BASE_313 | TRUE | Temperature < 130 C |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 2.4 | 508.54 | BASE_314 | FALSE | Not Filtered |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 2.7 | 270.02 | BASE_314 | FALSE | Not Filtered |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 3 | 194.28 | BASE_314 | FALSE | Not Filtered |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 3.3 | 161.38 | BASE_314 | FALSE | Not Filtered |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 3.6 | 143.99 | BASE_314 | FALSE | Not Filtered |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 3.9 | 130.29 | BASE_314 | FALSE | Not Filtered |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 4.2 | 116.98 | BASE_314 | TRUE | Temperature < 130 C |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 4.5 | 103.62 | BASE_314 | TRUE | Temperature < 130 C |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 4.8 | 93.72 | BASE_314 | TRUE | Temperature < 130 C |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 5.1 | 85.707 | BASE_314 | TRUE | Temperature < 130 C |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 5.4 | 77.268 | BASE_314 | TRUE | Temperature < 130 C |
| THREEWALL_916 | 300 | 0.61 | 1.14 | 5.7 | 69.468 | BASE_314 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| THREEWALL_916 | 300 | 0.61 | 1.14 | 6 | 66.588 | BASE_314 | TRUE | Temperature < 130 C |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 2.4 | 683.59 | BASE_315 | FALSE | Not Filtered |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 2.7 | 390.31 | BASE_315 | FALSE | Not Filtered |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 3 | 270.68 | BASE_315 | FALSE | Not Filtered |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 3.3 | 203.21 | BASE_315 | FALSE | Not Filtered |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 3.6 | 172.33 | BASE_315 | FALSE | Not Filtered |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 3.9 | 152.92 | BASE_315 | FALSE | Not Filtered |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 4.2 | 138.8 | BASE_315 | FALSE | Not Filtered |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 4.5 | 121.89 | BASE_315 | TRUE | Temperature < 130 C |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 4.8 | 110.66 | BASE_315 | TRUE | Temperature < 130 C |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 5.1 | 101.05 | BASE_315 | TRUE | Temperature < 130 C |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 5.4 | 91.643 | BASE_315 | TRUE | Temperature < 130 C |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 5.7 | 84.816 | BASE_315 | TRUE | Temperature < 130 C |
| THREEWALL_917 | 400 | 0.61 | 1.14 | 6 | 80.483 | BASE_315 | TRUE | Temperature < 130 C |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 2.4 | 826.87 | BASE_316 | TRUE | Temperature > 800 C |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 2.7 | 486.61 | BASE_316 | FALSE | Not Filtered |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 3 | 333.59 | BASE_316 | FALSE | Not Filtered |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 3.3 | 242.06 | BASE_316 | FALSE | Not Filtered |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 3.6 | 204.52 | BASE_316 | FALSE | Not Filtered |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 3.9 | 175.58 | BASE_316 | FALSE | Not Filtered |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 4.2 | 154.38 | BASE_316 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| THREEWALL_918 | 500 | 0.61 | 1.14 | 4.5 | 130.96 | BASE_316 | FALSE | Not Filtered |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 4.8 | 118.68 | BASE_316 | TRUE | Temperature < 130 C |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 5.1 | 108.22 | BASE_316 | TRUE | Temperature < 130 C |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 5.4 | 99.367 | BASE_316 | TRUE | Temperature < 130 C |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 5.7 | 89.439 | BASE_316 | TRUE | Temperature < 130 C |
| THREEWALL_918 | 500 | 0.61 | 1.14 | 6 | 83.231 | BASE_316 | TRUE | Temperature < 130 C |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 2.4 | 846.23 | BASE_317 | TRUE | Temperature > 800 C |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 2.7 | 582.28 | BASE_317 | FALSE | Not Filtered |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 3 | 436.03 | BASE_317 | FALSE | Not Filtered |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 3.3 | 325.81 | BASE_317 | FALSE | Not Filtered |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 3.6 | 268 | BASE_317 | FALSE | Not Filtered |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 3.9 | 223.92 | BASE_317 | FALSE | Not Filtered |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 4.2 | 196.1 | BASE_317 | FALSE | Not Filtered |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 4.5 | 172.14 | BASE_317 | FALSE | Not Filtered |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 4.8 | 158.53 | BASE_317 | FALSE | Not Filtered |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 5.1 | 143.64 | BASE_317 | FALSE | Not Filtered |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 5.4 | 129.78 | BASE_317 | TRUE | Temperature < 130 C |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 5.7 | 118.04 | BASE_317 | TRUE | Temperature < 130 C |
| THREEWALL_919 | 600 | 0.61 | 1.14 | 6 | 110.28 | BASE_317 | TRUE | Temperature < 130 C |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 2.4 | 894.59 | BASE_324 | TRUE | Temperature > 800 C |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 2.7 | 607.45 | BASE_324 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| THREEWALL_922 | 200 | 0.61 | 1.98 | 3 | 438.25 | BASE_324 | FALSE | Not Filtered |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 3.3 | 329.14 | BASE_324 | FALSE | Not Filtered |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 3.6 | 256.87 | BASE_324 | FALSE | Not Filtered |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 3.9 | 203.85 | BASE_324 | FALSE | Not Filtered |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 4.2 | 168.83 | BASE_324 | FALSE | Not Filtered |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 4.5 | 145.65 | BASE_324 | FALSE | Not Filtered |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 4.8 | 129.93 | BASE_324 | TRUE | Temperature < 130 C |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 5.1 | 115.64 | BASE_324 | TRUE | Temperature < 130 C |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 5.4 | 103.08 | BASE_324 | TRUE | Temperature < 130 C |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 5.7 | 91.731 | BASE_324 | TRUE | Temperature < 130 C |
| THREEWALL_922 | 200 | 0.61 | 1.98 | 6 | 84.103 | BASE_324 | TRUE | Temperature < 130 C |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 2.4 | 983.87 | BASE_325 | TRUE | Temperature > 800 C |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 2.7 | 922.29 | BASE_325 | TRUE | Temperature > 800 C |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 3 | 726.09 | BASE_325 | FALSE | Not Filtered |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 3.3 | 510.62 | BASE_325 | FALSE | Not Filtered |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 3.6 | 388.3 | BASE_325 | FALSE | Not Filtered |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 3.9 | 290.83 | BASE_325 | FALSE | Not Filtered |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 4.2 | 230.29 | BASE_325 | FALSE | Not Filtered |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 4.5 | 182.55 | BASE_325 | FALSE | Not Filtered |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 4.8 | 157.83 | BASE_325 | FALSE | Not Filtered |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 5.1 | 140.83 | BASE_325 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| THREEWALL_923 | 300 | 0.61 | 1.98 | 5.4 | 122.74 | BASE_325 | TRUE | Temperature < 130 C |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 5.7 | 110.35 | BASE_325 | TRUE | Temperature < 130 C |
| THREEWALL_923 | 300 | 0.61 | 1.98 | 6 | 101.38 | BASE_325 | TRUE | Temperature < 130 C |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 2.4 | 1014.1 | BASE_326 | TRUE | Temperature > 800 C |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 2.7 | 978.89 | BASE_326 | TRUE | Temperature > 800 C |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 3 | 883.71 | BASE_326 | TRUE | Temperature > 800 C |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 3.3 | 681.79 | BASE_326 | FALSE | Not Filtered |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 3.6 | 519.42 | BASE_326 | FALSE | Not Filtered |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 3.9 | 388.24 | BASE_326 | FALSE | Not Filtered |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 4.2 | 306.26 | BASE_326 | FALSE | Not Filtered |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 4.5 | 246.33 | BASE_326 | FALSE | Not Filtered |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 4.8 | 213.8 | BASE_326 | FALSE | Not Filtered |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 5.1 | 183.16 | BASE_326 | FALSE | Not Filtered |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 5.4 | 157.27 | BASE_326 | FALSE | Not Filtered |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 5.7 | 137.47 | BASE_326 | FALSE | Not Filtered |
| THREEWALL_924 | 400 | 0.61 | 1.98 | 6 | 126.19 | BASE_326 | TRUE | Temperature < 130 C |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 2.4 | 1106.3 | BASE_327 | TRUE | Temperature > 800 C |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 2.7 | 1011.3 | BASE_327 | TRUE | Temperature > 800 C |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 3 | 928.71 | BASE_327 | TRUE | Temperature > 800 C |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 3.3 | 799.73 | BASE_327 | FALSE | Not Filtered |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 3.6 | 664.76 | BASE_327 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| THREEWALL_925 | 500 | 0.61 | 1.98 | 3.9 | 518.6 | BASE_327 | FALSE | Not Filtered |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 4.2 | 405.1 | BASE_327 | FALSE | Not Filtered |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 4.5 | 310.44 | BASE_327 | FALSE | Not Filtered |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 4.8 | 262.34 | BASE_327 | FALSE | Not Filtered |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 5.1 | 221.57 | BASE_327 | FALSE | Not Filtered |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 5.4 | 192.52 | BASE_327 | FALSE | Not Filtered |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 5.7 | 166.57 | BASE_327 | FALSE | Not Filtered |
| THREEWALL_925 | 500 | 0.61 | 1.98 | 6 | 146.18 | BASE_327 | FALSE | Not Filtered |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 2.4 | 1089.8 | BASE_328 | TRUE | Temperature > 800 C |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 2.7 | 1070.9 | BASE_328 | TRUE | Temperature > 800 C |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 3 | 984.08 | BASE_328 | TRUE | Temperature > 800 C |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 3.3 | 844.18 | BASE_328 | TRUE | Temperature > 800 C |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 3.6 | 706.97 | BASE_328 | FALSE | Not Filtered |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 3.9 | 561.53 | BASE_328 | FALSE | Not Filtered |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 4.2 | 440.71 | BASE_328 | FALSE | Not Filtered |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 4.5 | 340.56 | BASE_328 | FALSE | Not Filtered |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 4.8 | 284.69 | BASE_328 | FALSE | Not Filtered |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 5.1 | 244.92 | BASE_328 | FALSE | Not Filtered |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 5.4 | 208.27 | BASE_328 | FALSE | Not Filtered |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 5.7 | 183.19 | BASE_328 | FALSE | Not Filtered |
| THREEWALL_926 | 600 | 0.61 | 1.98 | 6 | 166.48 | BASE_328 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| THREEWALL_972 | 300 | 0.91 | 0.30 | 2.4 | 184.56 | BASE_307 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 2.7 | 118.56 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 3 | 97.066 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 3.3 | 83.193 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 3.6 | 76.028 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 3.9 | 70.479 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 4.2 | 66.231 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 4.5 | 64.326 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 4.8 | 62.587 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 5.1 | 60.063 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 5.4 | 56.428 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 5.7 | 52.662 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_972 | 300 | 0.91 | 0.30 | 6 | 50.738 | BASE_307 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| THREEWALL_973 | 400 | 0.91 | 0.30 | 2.4 | 240.59 | BASE_308 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 2.7 | 144.47 | BASE_308 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 3 | 115.08 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 3.3 | 102.6 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 3.6 | 92.14 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 3.9 | 82.221 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 4.2 | 76.611 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 4.5 | 72.131 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 4.8 | 69.414 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 5.1 | 66.911 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 5.4 | 63.254 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 5.7 | 58.782 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_973 | 400 | 0.91 | 0.30 | 6 | 56.053 | BASE_308 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---|
| THREEWALL_974 | 500 | 0.91 | 0.30 | 2.4 | 303.21 | BASE_309 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 2.7 | 185.97 | BASE_309 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 3 | 144.03 | BASE_309 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 3.3 | 120.84 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 3.6 | 110.2 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 3.9 | 101.09 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 4.2 | 92.989 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 4.5 | 85.945 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 4.8 | 82.585 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 5.1 | 78.139 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 5.4 | 72.292 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 5.7 | 65.906 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_974 | 500 | 0.91 | 0.30 | 6 | 61.784 | BASE_309 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|--|
| THREEWALL_975 | 600 | 0.91 | 0.30 | 2.4 | 351.27 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 2.7 | 208.86 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 3 | 165.74 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 3.3 | 142 | BASE_310 | TRUE | Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 3.6 | 128.21 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 3.9 | 116.86 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 4.2 | 106 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 4.5 | 95.935 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 4.8 | 89.561 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 5.1 | 85.5 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 5.4 | 81.763 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 5.7 | 77.857 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |
| THREEWALL_975 | 600 | 0.91 | 0.30 | 6 | 74.923 | BASE_310 | TRUE | Temperature < 130 C, Source Located 1 ft. above Ground |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| THREEWALL_979 | 300 | 0.91 | 1.14 | 2.4 | 310.52 | BASE_318 | FALSE | Not Filtered |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 2.7 | 184.64 | BASE_318 | FALSE | Not Filtered |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 3 | 146.48 | BASE_318 | FALSE | Not Filtered |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 3.3 | 124.98 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 3.6 | 112.59 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 3.9 | 100.44 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 4.2 | 91.793 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 4.5 | 84.386 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 4.8 | 78.823 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 5.1 | 74.82 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 5.4 | 69.589 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 5.7 | 65.922 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_979 | 300 | 0.91 | 1.14 | 6 | 63.23 | BASE_318 | TRUE | Temperature < 130 C |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 2.4 | 380.97 | BASE_319 | FALSE | Not Filtered |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 2.7 | 231.62 | BASE_319 | FALSE | Not Filtered |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 3 | 184.42 | BASE_319 | FALSE | Not Filtered |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 3.3 | 151.59 | BASE_319 | FALSE | Not Filtered |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 3.6 | 134.53 | BASE_319 | FALSE | Not Filtered |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 3.9 | 121.09 | BASE_319 | TRUE | Temperature < 130 C |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 4.2 | 111.18 | BASE_319 | TRUE | Temperature < 130 C |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 4.5 | 103.03 | BASE_319 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| THREEWALL_980 | 400 | 0.91 | 1.14 | 4.8 | 97.236 | BASE_319 | TRUE | Temperature < 130 C |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 5.1 | 91.365 | BASE_319 | TRUE | Temperature < 130 C |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 5.4 | 84.422 | BASE_319 | TRUE | Temperature < 130 C |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 5.7 | 79.351 | BASE_319 | TRUE | Temperature < 130 C |
| THREEWALL_980 | 400 | 0.91 | 1.14 | 6 | 75.216 | BASE_319 | TRUE | Temperature < 130 C |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 2.4 | 522.3 | BASE_320 | FALSE | Not Filtered |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 2.7 | 283.14 | BASE_320 | FALSE | Not Filtered |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 3 | 223.96 | BASE_320 | FALSE | Not Filtered |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 3.3 | 187.48 | BASE_320 | FALSE | Not Filtered |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 3.6 | 163.06 | BASE_320 | FALSE | Not Filtered |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 3.9 | 146.31 | BASE_320 | FALSE | Not Filtered |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 4.2 | 133.8 | BASE_320 | FALSE | Not Filtered |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 4.5 | 122.56 | BASE_320 | TRUE | Temperature < 130 C |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 4.8 | 112.15 | BASE_320 | TRUE | Temperature < 130 C |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 5.1 | 104.23 | BASE_320 | TRUE | Temperature < 130 C |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 5.4 | 96.185 | BASE_320 | TRUE | Temperature < 130 C |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 5.7 | 90.141 | BASE_320 | TRUE | Temperature < 130 C |
| THREEWALL_981 | 500 | 0.91 | 1.14 | 6 | 84.866 | BASE_320 | TRUE | Temperature < 130 C |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 2.4 | 604.51 | BASE_321 | FALSE | Not Filtered |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 2.7 | 350.93 | BASE_321 | FALSE | Not Filtered |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 3 | 268.81 | BASE_321 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| THREEWALL_982 | 600 | 0.91 | 1.14 | 3.3 | 221.1 | BASE_321 | FALSE | Not Filtered |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 3.6 | 193.38 | BASE_321 | FALSE | Not Filtered |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 3.9 | 171.54 | BASE_321 | FALSE | Not Filtered |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 4.2 | 153.52 | BASE_321 | FALSE | Not Filtered |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 4.5 | 138.27 | BASE_321 | FALSE | Not Filtered |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 4.8 | 126.36 | BASE_321 | TRUE | Temperature < 130 C |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 5.1 | 116.64 | BASE_321 | TRUE | Temperature < 130 C |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 5.4 | 108.26 | BASE_321 | TRUE | Temperature < 130 C |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 5.7 | 100.09 | BASE_321 | TRUE | Temperature < 130 C |
| THREEWALL_982 | 600 | 0.91 | 1.14 | 6 | 94.122 | BASE_321 | TRUE | Temperature < 130 C |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 2.4 | 844.4 | BASE_329 | TRUE | Temperature > 800 C |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 2.7 | 681.25 | BASE_329 | FALSE | Not Filtered |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 3 | 490.11 | BASE_329 | FALSE | Not Filtered |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 3.3 | 353.3 | BASE_329 | FALSE | Not Filtered |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 3.6 | 278.73 | BASE_329 | FALSE | Not Filtered |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 3.9 | 227.21 | BASE_329 | FALSE | Not Filtered |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 4.2 | 182.1 | BASE_329 | FALSE | Not Filtered |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 4.5 | 148.46 | BASE_329 | FALSE | Not Filtered |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 4.8 | 126.79 | BASE_329 | TRUE | Temperature < 130 C |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 5.1 | 112.9 | BASE_329 | TRUE | Temperature < 130 C |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 5.4 | 99.758 | BASE_329 | TRUE | Temperature < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|----------|--------------|-------------------|---------------|------------------------------------|---------------|---------------|---------------------|
| THREEWALL_986 | 300 | 0.91 | 1.98 | 5.7 | 88.638 | BASE_329 | TRUE | Temperature < 130 C |
| THREEWALL_986 | 300 | 0.91 | 1.98 | 6 | 81.318 | BASE_329 | TRUE | Temperature < 130 C |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 2.4 | 909.89 | BASE_330 | TRUE | Temperature > 800 C |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 2.7 | 857.59 | BASE_330 | TRUE | Temperature > 800 C |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 3 | 676.43 | BASE_330 | FALSE | Not Filtered |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 3.3 | 441.27 | BASE_330 | FALSE | Not Filtered |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 3.6 | 339.87 | BASE_330 | FALSE | Not Filtered |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 3.9 | 266.42 | BASE_330 | FALSE | Not Filtered |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 4.2 | 220.39 | BASE_330 | FALSE | Not Filtered |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 4.5 | 182.32 | BASE_330 | FALSE | Not Filtered |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 4.8 | 164.19 | BASE_330 | FALSE | Not Filtered |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 5.1 | 148.53 | BASE_330 | FALSE | Not Filtered |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 5.4 | 135.35 | BASE_330 | FALSE | Not Filtered |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 5.7 | 121.94 | BASE_330 | TRUE | Temperature < 130 C |
| THREEWALL_987 | 400 | 0.91 | 1.98 | 6 | 113.94 | BASE_330 | TRUE | Temperature < 130 C |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 2.4 | 973.68 | BASE_331 | TRUE | Temperature > 800 C |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 2.7 | 891.03 | BASE_331 | TRUE | Temperature > 800 C |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 3 | 799.43 | BASE_331 | FALSE | Not Filtered |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 3.3 | 606.92 | BASE_331 | FALSE | Not Filtered |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 3.6 | 454.55 | BASE_331 | FALSE | Not Filtered |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 3.9 | 343.91 | BASE_331 | FALSE | Not Filtered |

Table E-1
Obstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Baseline Test | Data Filtered | Filtration Criteria |
|---------------|-------------|-----------------|----------------------|------------------|--|------------------|------------------|---------------------|
| THREEWALL_988 | 500 | 0.91 | 1.98 | 4.2 | 282.91 | BASE_331 | FALSE | Not Filtered |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 4.5 | 229.44 | BASE_331 | FALSE | Not Filtered |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 4.8 | 198.62 | BASE_331 | FALSE | Not Filtered |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 5.1 | 177.02 | BASE_331 | FALSE | Not Filtered |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 5.4 | 157.24 | BASE_331 | FALSE | Not Filtered |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 5.7 | 137.4 | BASE_331 | FALSE | Not Filtered |
| THREEWALL_988 | 500 | 0.91 | 1.98 | 6 | 125.87 | BASE_331 | TRUE | Temperature < 130 C |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 2.4 | 1027.7 | BASE_332 | TRUE | Temperature > 800 C |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 2.7 | 965.5 | BASE_332 | TRUE | Temperature > 800 C |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 3 | 918.36 | BASE_332 | TRUE | Temperature > 800 C |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 3.3 | 752.38 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 3.6 | 582.49 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 3.9 | 431.65 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 4.2 | 349.02 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 4.5 | 270.92 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 4.8 | 233.27 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 5.1 | 202.93 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 5.4 | 176.71 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 5.7 | 151.1 | BASE_332 | FALSE | Not Filtered |
| THREEWALL_989 | 600 | 0.91 | 1.98 | 6 | 137.61 | BASE_332 | FALSE | Not Filtered |

Unobstructed Simulation Results

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---|
| BASE_404 | 1000 | 0.91 | 0.30 | 2.4 | 795.4 | 819.38 | TRUE | Source Located 1 ft. above Ground , Heskestad > 800 C |
| BASE_404 | 1000 | 0.91 | 0.30 | 2.7 | 698.73 | 626.09 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 3 | 605.33 | 496.65 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 3.3 | 507.53 | 405.28 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 3.6 | 423.26 | 338.12 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 3.9 | 338.41 | 287.15 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 4.2 | 282.38 | 247.45 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 4.5 | 235.94 | 215.85 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 4.8 | 211.9 | 190.25 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 5.1 | 189.94 | 169.19 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 5.4 | 166.35 | 151.62 | TRUE | Source Located 1 ft. above Ground |
| BASE_404 | 1000 | 0.91 | 0.30 | 5.7 | 146.53 | 136.80 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_404 | 1000 | 0.91 | 0.30 | 6 | 133.59 | 124.17 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_400 | 1000 | 0.91 | 1.14 | 2.4 | 883.35 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_400 | 1000 | 0.91 | 1.14 | 2.7 | 869.76 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_400 | 1000 | 0.91 | 1.14 | 3 | 821.26 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_400 | 1000 | 0.91 | 1.14 | 3.3 | 737.09 | 772.37 | FALSE | Not Filtered |
| BASE_400 | 1000 | 0.91 | 1.14 | 3.6 | 641.71 | 595.31 | FALSE | Not Filtered |
| BASE_400 | 1000 | 0.91 | 1.14 | 3.9 | 540.23 | 475.29 | FALSE | Not Filtered |
| BASE_400 | 1000 | 0.91 | 1.14 | 4.2 | 442.68 | 389.79 | FALSE | Not Filtered |
| BASE_400 | 1000 | 0.91 | 1.14 | 4.5 | 364.05 | 326.49 | FALSE | Not Filtered |
| BASE_400 | 1000 | 0.91 | 1.14 | 4.8 | 309.85 | 278.17 | FALSE | Not Filtered |
| BASE_400 | 1000 | 0.91 | 1.14 | 5.1 | 266.48 | 240.36 | FALSE | Not Filtered |
| BASE_400 | 1000 | 0.91 | 1.14 | 5.4 | 227.22 | 210.14 | FALSE | Not Filtered |
| BASE_400 | 1000 | 0.91 | 1.14 | 5.7 | 187.04 | 185.58 | FALSE | Not Filtered |
| BASE_400 | 1000 | 0.91 | 1.14 | 6 | 162.96 | 165.31 | FALSE | Not Filtered |
| BASE_401 | 1000 | 0.91 | 1.98 | 2.4 | 867.85 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_401 | 1000 | 0.91 | 1.98 | 2.7 | 821.69 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_401 | 1000 | 0.91 | 1.98 | 3 | 843.29 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_401 | 1000 | 0.91 | 1.98 | 3.3 | 863.68 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_401 | 1000 | 0.91 | 1.98 | 3.6 | 847.71 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_401 | 1000 | 0.91 | 1.98 | 3.9 | 778.57 | 982.15 | TRUE | Heskestad > 800 C |
| BASE_401 | 1000 | 0.91 | 1.98 | 4.2 | 712.61 | 729.52 | FALSE | Not Filtered |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---|
| BASE_401 | 1000 | 0.91 | 1.98 | 4.5 | 619.77 | 566.88 | FALSE | Not Filtered |
| BASE_401 | 1000 | 0.91 | 1.98 | 4.8 | 546.09 | 455.37 | FALSE | Not Filtered |
| BASE_401 | 1000 | 0.91 | 1.98 | 5.1 | 448.48 | 375.23 | FALSE | Not Filtered |
| BASE_401 | 1000 | 0.91 | 1.98 | 5.4 | 362.78 | 315.49 | FALSE | Not Filtered |
| BASE_401 | 1000 | 0.91 | 1.98 | 5.7 | 297.95 | 269.64 | FALSE | Not Filtered |
| BASE_401 | 1000 | 0.91 | 1.98 | 6 | 255.43 | 233.59 | FALSE | Not Filtered |
| BASE_405 | 1000 | 1.22 | 0.30 | 2.4 | 781.27 | 819.38 | TRUE | Source Located 1 ft. above Ground , Heskestad > 800 C |
| BASE_405 | 1000 | 1.22 | 0.30 | 2.7 | 709.22 | 626.09 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 3 | 615.79 | 496.65 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 3.3 | 498.02 | 405.28 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 3.6 | 410.4 | 338.12 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 3.9 | 327.49 | 287.15 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 4.2 | 278.55 | 247.45 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 4.5 | 237.14 | 215.85 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 4.8 | 206.01 | 190.25 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_405 | 1000 | 1.22 | 0.30 | 5.1 | 182.4 | 169.19 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 5.4 | 160.44 | 151.62 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 5.7 | 142.62 | 136.80 | TRUE | Source Located 1 ft. above Ground |
| BASE_405 | 1000 | 1.22 | 0.30 | 6 | 129.63 | 124.17 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_402 | 1000 | 1.22 | 1.14 | 2.4 | 884.72 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_402 | 1000 | 1.22 | 1.14 | 2.7 | 872.06 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_402 | 1000 | 1.22 | 1.14 | 3 | 844.23 | 764.70 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 3.3 | 780 | 590.25 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 3.6 | 703.37 | 471.76 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 3.9 | 609.22 | 387.22 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 4.2 | 536.91 | 324.55 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 4.5 | 442.2 | 276.67 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 4.8 | 371.59 | 239.17 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 5.1 | 319.12 | 209.19 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 5.4 | 270.59 | 184.79 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 5.7 | 231.36 | 164.65 | FALSE | Not Filtered |
| BASE_402 | 1000 | 1.22 | 1.14 | 6 | 203.95 | 147.81 | FALSE | Not Filtered |
| BASE_403 | 1000 | 1.22 | 1.98 | 2.4 | 832.64 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_403 | 1000 | 1.22 | 1.98 | 2.7 | 849.5 | 1000.00 | TRUE | Heskestad > 800 C |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|-------------|-----------------|---------------------|--------------------------|----------------------|---|---|----------------------|--|
| BASE_403 | 1000 | 1.22 | 1.98 | 3 | 881.01 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_403 | 1000 | 1.22 | 1.98 | 3.3 | 897.01 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_403 | 1000 | 1.22 | 1.98 | 3.6 | 882.44 | 970.90 | TRUE | Heskestad > 800 C |
| BASE_403 | 1000 | 1.22 | 1.98 | 3.9 | 843.66 | 722.52 | FALSE | Not Filtered |
| BASE_403 | 1000 | 1.22 | 1.98 | 4.2 | 798.56 | 562.20 | FALSE | Not Filtered |
| BASE_403 | 1000 | 1.22 | 1.98 | 4.5 | 714.56 | 452.07 | FALSE | Not Filtered |
| BASE_403 | 1000 | 1.22 | 1.98 | 4.8 | 619.77 | 372.81 | FALSE | Not Filtered |
| BASE_403 | 1000 | 1.22 | 1.98 | 5.1 | 524.43 | 313.65 | FALSE | Not Filtered |
| BASE_403 | 1000 | 1.22 | 1.98 | 5.4 | 430.81 | 268.21 | FALSE | Not Filtered |
| BASE_403 | 1000 | 1.22 | 1.98 | 5.7 | 350.83 | 232.45 | FALSE | Not Filtered |
| BASE_403 | 1000 | 1.22 | 1.98 | 6 | 294.37 | 203.75 | FALSE | Not Filtered |
| BASE_300 | 50 | 0.30 | 0.30 | 2.4 | 78.578 | 85.19 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_300 | 50 | 0.30 | 0.30 | 2.7 | 62.259 | 67.56 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_300 | 50 | 0.30 | 0.30 | 3 | 51.393 | 55.11 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_300 | 50 | 0.30 | 0.30 | 3.3 | 42.918 | 45.97 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_300 | 50 | 0.30 | 0.30 | 3.6 | 38.301 | 39.03 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_300 | 50 | 0.30 | 0.30 | 3.9 | 33.654 | 33.63 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_301 | 100 | 0.30 | 0.30 | 2.4 | 144.68 | 150.77 | TRUE | Source Located 1 ft. above Ground |
| BASE_301 | 100 | 0.30 | 0.30 | 2.7 | 115.38 | 117.84 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_301 | 100 | 0.30 | 0.30 | 3 | 94.51 | 95.07 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_301 | 100 | 0.30 | 0.30 | 3.3 | 78.22 | 78.61 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_301 | 100 | 0.30 | 0.30 | 3.6 | 66.281 | 66.27 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_301 | 100 | 0.30 | 0.30 | 3.9 | 54.636 | 56.77 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_301 | 100 | 0.30 | 0.30 | 4.2 | 48.663 | 49.27 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_301 | 100 | 0.30 | 0.30 | 4.5 | 44.269 | 43.24 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_301 | 100 | 0.30 | 0.30 | 4.8 | 41.438 | 38.31 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_311 | 50 | 0.30 | 1.14 | 2.4 | 191.73 | 209.49 | FALSE | Not Filtered |
| BASE_311 | 50 | 0.30 | 1.14 | 2.7 | 132.04 | 143.24 | FALSE | Not Filtered |
| BASE_311 | 50 | 0.30 | 1.14 | 3 | 103.75 | 105.13 | TRUE | Heskestad < 130 C |
| BASE_311 | 50 | 0.30 | 1.14 | 3.3 | 80.93 | 81.00 | TRUE | Heskestad < 130 C |
| BASE_311 | 50 | 0.30 | 1.14 | 3.6 | 66.604 | 64.65 | TRUE | Heskestad < 130 C |
| BASE_311 | 50 | 0.30 | 1.14 | 3.9 | 54.69 | 53.01 | TRUE | Heskestad < 130 C |
| BASE_311 | 50 | 0.30 | 1.14 | 4.2 | 47.827 | 44.39 | TRUE | Heskestad < 130 C |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_312 | 100 | 0.30 | 1.14 | 2.4 | 362.7 | 402.61 | FALSE | Not Filtered |
| BASE_312 | 100 | 0.30 | 1.14 | 2.7 | 221.13 | 264.28 | FALSE | Not Filtered |
| BASE_312 | 100 | 0.30 | 1.14 | 3 | 162.78 | 188.91 | FALSE | Not Filtered |
| BASE_312 | 100 | 0.30 | 1.14 | 3.3 | 123.92 | 142.87 | FALSE | Not Filtered |
| BASE_312 | 100 | 0.30 | 1.14 | 3.6 | 99.71 | 112.48 | TRUE | Heskestad < 130 C |
| BASE_312 | 100 | 0.30 | 1.14 | 3.9 | 82.29 | 91.25 | TRUE | Heskestad < 130 C |
| BASE_312 | 100 | 0.30 | 1.14 | 4.2 | 70.911 | 75.78 | TRUE | Heskestad < 130 C |
| BASE_312 | 100 | 0.30 | 1.14 | 4.5 | 58.39 | 64.12 | TRUE | Heskestad < 130 C |
| BASE_312 | 100 | 0.30 | 1.14 | 4.8 | 51.09 | 55.08 | TRUE | Heskestad < 130 C |
| BASE_312 | 100 | 0.30 | 1.14 | 5.1 | 44.749 | 47.92 | TRUE | Heskestad < 130 C |
| BASE_312 | 100 | 0.30 | 1.14 | 5.4 | 39.094 | 42.15 | TRUE | Heskestad < 130 C |
| BASE_322 | 50 | 0.30 | 1.98 | 2.4 | 790.05 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_322 | 50 | 0.30 | 1.98 | 2.7 | 434.88 | 584.26 | FALSE | Not Filtered |
| BASE_322 | 50 | 0.30 | 1.98 | 3 | 242.82 | 306.03 | FALSE | Not Filtered |
| BASE_322 | 50 | 0.30 | 1.98 | 3.3 | 154.53 | 192.28 | FALSE | Not Filtered |
| BASE_322 | 50 | 0.30 | 1.98 | 3.6 | 115.32 | 133.75 | FALSE | Not Filtered |
| BASE_322 | 50 | 0.30 | 1.98 | 3.9 | 89.33 | 99.29 | TRUE | Heskestad < 130 C |
| BASE_322 | 50 | 0.30 | 1.98 | 4.2 | 71.831 | 77.12 | TRUE | Heskestad < 130 C |
| BASE_322 | 50 | 0.30 | 1.98 | 4.5 | 56.449 | 61.93 | TRUE | Heskestad < 130 C |
| BASE_322 | 50 | 0.30 | 1.98 | 4.8 | 46.519 | 51.02 | TRUE | Heskestad < 130 C |
| BASE_322 | 50 | 0.30 | 1.98 | 5.1 | 40.578 | 42.89 | TRUE | Heskestad < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_323 | 100 | 0.30 | 1.98 | 2.4 | 1020.6 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_323 | 100 | 0.30 | 1.98 | 2.7 | 908.31 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_323 | 100 | 0.30 | 1.98 | 3 | 614.44 | 619.87 | FALSE | Not Filtered |
| BASE_323 | 100 | 0.30 | 1.98 | 3.3 | 348.63 | 365.81 | FALSE | Not Filtered |
| BASE_323 | 100 | 0.30 | 1.98 | 3.6 | 238.38 | 245.21 | FALSE | Not Filtered |
| BASE_323 | 100 | 0.30 | 1.98 | 3.9 | 165.26 | 177.64 | FALSE | Not Filtered |
| BASE_323 | 100 | 0.30 | 1.98 | 4.2 | 127.9 | 135.61 | FALSE | Not Filtered |
| BASE_323 | 100 | 0.30 | 1.98 | 4.5 | 99.95 | 107.50 | TRUE | Heskestad < 130 C |
| BASE_323 | 100 | 0.30 | 1.98 | 4.8 | 84.38 | 87.67 | TRUE | Heskestad < 130 C |
| BASE_323 | 100 | 0.30 | 1.98 | 5.1 | 70.453 | 73.11 | TRUE | Heskestad < 130 C |
| BASE_323 | 100 | 0.30 | 1.98 | 5.4 | 58.577 | 62.07 | TRUE | Heskestad < 130 C |
| BASE_323 | 100 | 0.30 | 1.98 | 5.7 | 50.134 | 53.47 | TRUE | Heskestad < 130 C |
| BASE_323 | 100 | 0.30 | 1.98 | 6 | 43.943 | 46.64 | TRUE | Heskestad < 130 C |
| BASE_302 | 200 | 0.61 | 0.30 | 2.4 | 213.45 | 211.71 | TRUE | Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 2.7 | 170.01 | 168.19 | TRUE | Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 3 | 142.96 | 137.40 | TRUE | Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 3.3 | 121.27 | 114.73 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 3.6 | 105.52 | 97.51 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_302 | 200 | 0.61 | 0.30 | 3.9 | 88.62 | 84.08 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 4.2 | 76.736 | 73.38 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 4.5 | 67.501 | 64.71 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 4.8 | 61.141 | 57.56 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 5.1 | 56.723 | 51.60 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 5.4 | 51.975 | 46.57 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 5.7 | 45.998 | 42.28 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_302 | 200 | 0.61 | 0.30 | 6 | 43.08 | 38.59 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 2.4 | 296.14 | 307.62 | TRUE | Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 2.7 | 220.38 | 241.06 | TRUE | Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 3 | 183.17 | 194.88 | TRUE | Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 3.3 | 148.23 | 161.39 | TRUE | Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 3.6 | 128.16 | 136.24 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_303 | 300 | 0.61 | 0.30 | 3.9 | 108.27 | 116.82 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 4.2 | 93.85 | 101.48 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 4.5 | 81.84 | 89.13 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 4.8 | 74.599 | 79.02 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 5.1 | 67.063 | 70.63 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 5.4 | 60.342 | 63.57 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 5.7 | 53.847 | 57.58 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_303 | 300 | 0.61 | 0.30 | 6 | 50.33 | 52.45 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 2.4 | 411.81 | 407.41 | TRUE | Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 2.7 | 304.43 | 315.31 | TRUE | Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 3 | 247.49 | 252.53 | TRUE | Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 3.3 | 200.37 | 207.60 | TRUE | Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 3.6 | 162.17 | 174.22 | TRUE | Source Located 1 ft. above Ground |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_304 | 400 | 0.61 | 0.30 | 3.9 | 133.24 | 148.67 | TRUE | Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 4.2 | 115.82 | 128.63 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 4.5 | 101.45 | 112.58 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 4.8 | 90.29 | 99.52 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 5.1 | 82.61 | 88.72 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 5.4 | 75.416 | 79.68 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 5.7 | 69.567 | 72.03 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_304 | 400 | 0.61 | 0.30 | 6 | 64.731 | 65.49 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 2.4 | 521.63 | 512.32 | TRUE | Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 2.7 | 399.1 | 391.90 | TRUE | Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 3 | 316.2 | 311.14 | TRUE | Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 3.3 | 246.46 | 254.06 | TRUE | Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 3.6 | 196.89 | 212.07 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-2 Unobstructed Simulation Results | | | | | | | | |
|--|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
| BASE_305 | 500 | 0.61 | 0.30 | 3.9 | 156 | 180.17 | TRUE | Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 4.2 | 135.57 | 155.31 | TRUE | Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 4.5 | 118.31 | 135.52 | TRUE | Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 4.8 | 101.09 | 119.48 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 5.1 | 90.49 | 106.27 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 5.4 | 82.81 | 95.25 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 5.7 | 77.621 | 85.96 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_305 | 500 | 0.61 | 0.30 | 6 | 72.416 | 78.03 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 2.4 | 621.32 | 623.47 | TRUE | Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 2.7 | 493.05 | 471.55 | TRUE | Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 3 | 392.91 | 371.26 | TRUE | Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 3.3 | 300.99 | 301.22 | TRUE | Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 3.6 | 239.8 | 250.16 | TRUE | Source Located 1 ft. above Ground |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_306 | 600 | 0.61 | 0.30 | 3.9 | 196.28 | 211.66 | TRUE | Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 4.2 | 168.47 | 181.84 | TRUE | Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 4.5 | 143.2 | 158.21 | TRUE | Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 4.8 | 127.89 | 139.14 | TRUE | Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 5.1 | 116.33 | 123.50 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 5.4 | 106.77 | 110.49 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 5.7 | 95.54 | 99.55 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_306 | 600 | 0.61 | 0.30 | 6 | 87.35 | 90.24 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_313 | 200 | 0.61 | 1.14 | 2.4 | 600.42 | 515.47 | FALSE | Not Filtered |
| BASE_313 | 200 | 0.61 | 1.14 | 2.7 | 414.5 | 354.17 | FALSE | Not Filtered |
| BASE_313 | 200 | 0.61 | 1.14 | 3 | 309.8 | 260.78 | FALSE | Not Filtered |
| BASE_313 | 200 | 0.61 | 1.14 | 3.3 | 229.95 | 201.37 | FALSE | Not Filtered |
| BASE_313 | 200 | 0.61 | 1.14 | 3.6 | 175.92 | 160.99 | FALSE | Not Filtered |
| BASE_313 | 200 | 0.61 | 1.14 | 3.9 | 133.61 | 132.18 | FALSE | Not Filtered |
| BASE_313 | 200 | 0.61 | 1.14 | 4.2 | 112.07 | 110.81 | TRUE | Heskestad < 130 C |
| BASE_313 | 200 | 0.61 | 1.14 | 4.5 | 97.7 | 94.47 | TRUE | Heskestad < 130 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_313 | 200 | 0.61 | 1.14 | 4.8 | 86.66 | 81.68 | TRUE | Heskestad < 130 C |
| BASE_313 | 200 | 0.61 | 1.14 | 5.1 | 76.924 | 71.45 | TRUE | Heskestad < 130 C |
| BASE_313 | 200 | 0.61 | 1.14 | 5.4 | 69.128 | 63.12 | TRUE | Heskestad < 130 C |
| BASE_313 | 200 | 0.61 | 1.14 | 5.7 | 62.155 | 56.25 | TRUE | Heskestad < 130 C |
| BASE_313 | 200 | 0.61 | 1.14 | 6 | 57.725 | 50.50 | TRUE | Heskestad < 130 C |
| BASE_314 | 300 | 0.61 | 1.14 | 2.4 | 794.04 | 808.95 | TRUE | Heskestad > 800 C |
| BASE_314 | 300 | 0.61 | 1.14 | 2.7 | 633.17 | 535.11 | FALSE | Not Filtered |
| BASE_314 | 300 | 0.61 | 1.14 | 3 | 494.2 | 384.36 | FALSE | Not Filtered |
| BASE_314 | 300 | 0.61 | 1.14 | 3.3 | 355.45 | 291.68 | FALSE | Not Filtered |
| BASE_314 | 300 | 0.61 | 1.14 | 3.6 | 273.81 | 230.20 | FALSE | Not Filtered |
| BASE_314 | 300 | 0.61 | 1.14 | 3.9 | 207.36 | 187.12 | FALSE | Not Filtered |
| BASE_314 | 300 | 0.61 | 1.14 | 4.2 | 174.38 | 155.63 | FALSE | Not Filtered |
| BASE_314 | 300 | 0.61 | 1.14 | 4.5 | 143.36 | 131.83 | FALSE | Not Filtered |
| BASE_314 | 300 | 0.61 | 1.14 | 4.8 | 125.13 | 113.37 | TRUE | Heskestad < 130 C |
| BASE_314 | 300 | 0.61 | 1.14 | 5.1 | 106.46 | 98.72 | TRUE | Heskestad < 130 C |
| BASE_314 | 300 | 0.61 | 1.14 | 5.4 | 91.29 | 86.88 | TRUE | Heskestad < 130 C |
| BASE_314 | 300 | 0.61 | 1.14 | 5.7 | 81.09 | 77.16 | TRUE | Heskestad < 130 C |
| BASE_314 | 300 | 0.61 | 1.14 | 6 | 73.481 | 69.07 | TRUE | Heskestad < 130 C |
| BASE_315 | 400 | 0.61 | 1.14 | 2.4 | 894.49 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_315 | 400 | 0.61 | 1.14 | 2.7 | 791.96 | 735.01 | FALSE | Not Filtered |
| BASE_315 | 400 | 0.61 | 1.14 | 3 | 664.52 | 515.78 | FALSE | Not Filtered |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_315 | 400 | 0.61 | 1.14 | 3.3 | 488.44 | 385.18 | FALSE | Not Filtered |
| BASE_315 | 400 | 0.61 | 1.14 | 3.6 | 370.93 | 300.47 | FALSE | Not Filtered |
| BASE_315 | 400 | 0.61 | 1.14 | 3.9 | 277.21 | 242.07 | FALSE | Not Filtered |
| BASE_315 | 400 | 0.61 | 1.14 | 4.2 | 223.36 | 199.93 | FALSE | Not Filtered |
| BASE_315 | 400 | 0.61 | 1.14 | 4.5 | 175.71 | 168.41 | FALSE | Not Filtered |
| BASE_315 | 400 | 0.61 | 1.14 | 4.8 | 149.38 | 144.15 | FALSE | Not Filtered |
| BASE_315 | 400 | 0.61 | 1.14 | 5.1 | 132.48 | 125.03 | TRUE | Heskestad < 130 C |
| BASE_315 | 400 | 0.61 | 1.14 | 5.4 | 116.77 | 109.68 | TRUE | Heskestad < 130 C |
| BASE_315 | 400 | 0.61 | 1.14 | 5.7 | 102.83 | 97.13 | TRUE | Heskestad < 130 C |
| BASE_315 | 400 | 0.61 | 1.14 | 6 | 93.62 | 86.73 | TRUE | Heskestad < 130 C |
| BASE_316 | 500 | 0.61 | 1.14 | 2.4 | 879.86 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_316 | 500 | 0.61 | 1.14 | 2.7 | 792.75 | 957.56 | TRUE | Heskestad > 800 C |
| BASE_316 | 500 | 0.61 | 1.14 | 3 | 694.1 | 656.81 | FALSE | Not Filtered |
| BASE_316 | 500 | 0.61 | 1.14 | 3.3 | 573.87 | 483.05 | FALSE | Not Filtered |
| BASE_316 | 500 | 0.61 | 1.14 | 3.6 | 456.09 | 372.71 | FALSE | Not Filtered |
| BASE_316 | 500 | 0.61 | 1.14 | 3.9 | 339.35 | 297.80 | FALSE | Not Filtered |
| BASE_316 | 500 | 0.61 | 1.14 | 4.2 | 277.73 | 244.38 | FALSE | Not Filtered |
| BASE_316 | 500 | 0.61 | 1.14 | 4.5 | 223.54 | 204.79 | FALSE | Not Filtered |
| BASE_316 | 500 | 0.61 | 1.14 | 4.8 | 182.29 | 174.55 | FALSE | Not Filtered |
| BASE_316 | 500 | 0.61 | 1.14 | 5.1 | 155.41 | 150.87 | FALSE | Not Filtered |
| BASE_316 | 500 | 0.61 | 1.14 | 5.4 | 133.98 | 131.94 | FALSE | Not Filtered |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_316 | 500 | 0.61 | 1.14 | 5.7 | 119.94 | 116.55 | TRUE | Heskestad < 130 C |
| BASE_316 | 500 | 0.61 | 1.14 | 6 | 108.39 | 103.84 | TRUE | Heskestad < 130 C |
| BASE_317 | 600 | 0.61 | 1.14 | 2.4 | 908.01 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_317 | 600 | 0.61 | 1.14 | 2.7 | 864.94 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_317 | 600 | 0.61 | 1.14 | 3 | 781.95 | 809.22 | TRUE | Heskestad > 800 C |
| BASE_317 | 600 | 0.61 | 1.14 | 3.3 | 647.71 | 586.29 | FALSE | Not Filtered |
| BASE_317 | 600 | 0.61 | 1.14 | 3.6 | 534.14 | 447.60 | FALSE | Not Filtered |
| BASE_317 | 600 | 0.61 | 1.14 | 3.9 | 416.5 | 354.83 | FALSE | Not Filtered |
| BASE_317 | 600 | 0.61 | 1.14 | 4.2 | 328.89 | 289.41 | FALSE | Not Filtered |
| BASE_317 | 600 | 0.61 | 1.14 | 4.5 | 264.69 | 241.36 | FALSE | Not Filtered |
| BASE_317 | 600 | 0.61 | 1.14 | 4.8 | 222.42 | 204.91 | FALSE | Not Filtered |
| BASE_317 | 600 | 0.61 | 1.14 | 5.1 | 186.54 | 176.53 | FALSE | Not Filtered |
| BASE_317 | 600 | 0.61 | 1.14 | 5.4 | 158.69 | 153.95 | FALSE | Not Filtered |
| BASE_317 | 600 | 0.61 | 1.14 | 5.7 | 136.29 | 135.67 | FALSE | Not Filtered |
| BASE_317 | 600 | 0.61 | 1.14 | 6 | 123.49 | 120.63 | TRUE | Heskestad < 130 C |
| BASE_324 | 200 | 0.61 | 1.98 | 2.4 | 802.19 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_324 | 200 | 0.61 | 1.98 | 2.7 | 812.66 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_324 | 200 | 0.61 | 1.98 | 3 | 680.91 | 748.51 | FALSE | Not Filtered |
| BASE_324 | 200 | 0.61 | 1.98 | 3.3 | 486.99 | 473.69 | FALSE | Not Filtered |
| BASE_324 | 200 | 0.61 | 1.98 | 3.6 | 354.53 | 330.95 | FALSE | Not Filtered |
| BASE_324 | 200 | 0.61 | 1.98 | 3.9 | 255.02 | 246.42 | FALSE | Not Filtered |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_324 | 200 | 0.61 | 1.98 | 4.2 | 205.62 | 191.81 | FALSE | Not Filtered |
| BASE_324 | 200 | 0.61 | 1.98 | 4.5 | 166.23 | 154.28 | FALSE | Not Filtered |
| BASE_324 | 200 | 0.61 | 1.98 | 4.8 | 136.56 | 127.26 | TRUE | Heskestad < 130 C |
| BASE_324 | 200 | 0.61 | 1.98 | 5.1 | 115.36 | 107.09 | TRUE | Heskestad < 130 C |
| BASE_324 | 200 | 0.61 | 1.98 | 5.4 | 98.47 | 91.59 | TRUE | Heskestad < 130 C |
| BASE_324 | 200 | 0.61 | 1.98 | 5.7 | 83.73 | 79.39 | TRUE | Heskestad < 130 C |
| BASE_324 | 200 | 0.61 | 1.98 | 6 | 73.846 | 69.59 | TRUE | Heskestad < 130 C |
| BASE_325 | 300 | 0.61 | 1.98 | 2.4 | 834.33 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_325 | 300 | 0.61 | 1.98 | 2.7 | 924.98 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_325 | 300 | 0.61 | 1.98 | 3 | 881.51 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_325 | 300 | 0.61 | 1.98 | 3.3 | 729.09 | 736.43 | FALSE | Not Filtered |
| BASE_325 | 300 | 0.61 | 1.98 | 3.6 | 570.95 | 497.07 | FALSE | Not Filtered |
| BASE_325 | 300 | 0.61 | 1.98 | 3.9 | 413.79 | 361.73 | FALSE | Not Filtered |
| BASE_325 | 300 | 0.61 | 1.98 | 4.2 | 313.04 | 277.01 | FALSE | Not Filtered |
| BASE_325 | 300 | 0.61 | 1.98 | 4.5 | 224.91 | 220.11 | FALSE | Not Filtered |
| BASE_325 | 300 | 0.61 | 1.98 | 4.8 | 177.16 | 179.84 | FALSE | Not Filtered |
| BASE_325 | 300 | 0.61 | 1.98 | 5.1 | 150.9 | 150.19 | FALSE | Not Filtered |
| BASE_325 | 300 | 0.61 | 1.98 | 5.4 | 129.86 | 127.65 | TRUE | Heskestad < 130 C |
| BASE_325 | 300 | 0.61 | 1.98 | 5.7 | 107.49 | 110.08 | TRUE | Heskestad < 130 C |
| BASE_325 | 300 | 0.61 | 1.98 | 6 | 94.42 | 96.08 | TRUE | Heskestad < 130 C |
| BASE_326 | 400 | 0.61 | 1.98 | 2.4 | 847.41 | 1000.00 | TRUE | Heskestad > 800 C |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_326 | 400 | 0.61 | 1.98 | 2.7 | 909.47 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_326 | 400 | 0.61 | 1.98 | 3 | 917.03 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_326 | 400 | 0.61 | 1.98 | 3.3 | 850.04 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_326 | 400 | 0.61 | 1.98 | 3.6 | 715.9 | 678.92 | FALSE | Not Filtered |
| BASE_326 | 400 | 0.61 | 1.98 | 3.9 | 558.26 | 483.57 | FALSE | Not Filtered |
| BASE_326 | 400 | 0.61 | 1.98 | 4.2 | 402.99 | 364.83 | FALSE | Not Filtered |
| BASE_326 | 400 | 0.61 | 1.98 | 4.5 | 294.05 | 286.71 | FALSE | Not Filtered |
| BASE_326 | 400 | 0.61 | 1.98 | 4.8 | 235.69 | 232.29 | FALSE | Not Filtered |
| BASE_326 | 400 | 0.61 | 1.98 | 5.1 | 201.69 | 192.70 | FALSE | Not Filtered |
| BASE_326 | 400 | 0.61 | 1.98 | 5.4 | 168.14 | 162.90 | FALSE | Not Filtered |
| BASE_326 | 400 | 0.61 | 1.98 | 5.7 | 139.4 | 139.84 | FALSE | Not Filtered |
| BASE_326 | 400 | 0.61 | 1.98 | 6 | 119.04 | 121.60 | TRUE | Heskestad < 130 C |
| BASE_327 | 500 | 0.61 | 1.98 | 2.4 | 869.39 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_327 | 500 | 0.61 | 1.98 | 2.7 | 904.4 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_327 | 500 | 0.61 | 1.98 | 3 | 946.1 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_327 | 500 | 0.61 | 1.98 | 3.3 | 913.68 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_327 | 500 | 0.61 | 1.98 | 3.6 | 812.4 | 879.58 | TRUE | Heskestad > 800 C |
| BASE_327 | 500 | 0.61 | 1.98 | 3.9 | 650.44 | 613.57 | FALSE | Not Filtered |
| BASE_327 | 500 | 0.61 | 1.98 | 4.2 | 526.14 | 456.37 | FALSE | Not Filtered |
| BASE_327 | 500 | 0.61 | 1.98 | 4.5 | 415.12 | 354.97 | FALSE | Not Filtered |
| BASE_327 | 500 | 0.61 | 1.98 | 4.8 | 327.36 | 285.36 | FALSE | Not Filtered |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|-----------------------------------|
| BASE_327 | 500 | 0.61 | 1.98 | 5.1 | 261.93 | 235.27 | FALSE | Not Filtered |
| BASE_327 | 500 | 0.61 | 1.98 | 5.4 | 213.41 | 197.91 | FALSE | Not Filtered |
| BASE_327 | 500 | 0.61 | 1.98 | 5.7 | 181.16 | 169.21 | FALSE | Not Filtered |
| BASE_327 | 500 | 0.61 | 1.98 | 6 | 158.89 | 146.63 | FALSE | Not Filtered |
| BASE_328 | 600 | 0.61 | 1.98 | 2.4 | 896.1 | -20.00 | TRUE | Heskestad < 130 C |
| BASE_328 | 600 | 0.61 | 1.98 | 2.7 | 892.48 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_328 | 600 | 0.61 | 1.98 | 3 | 908.94 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_328 | 600 | 0.61 | 1.98 | 3.3 | 936.98 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_328 | 600 | 0.61 | 1.98 | 3.6 | 907.68 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_328 | 600 | 0.61 | 1.98 | 3.9 | 782.46 | 753.25 | FALSE | Not Filtered |
| BASE_328 | 600 | 0.61 | 1.98 | 4.2 | 650.93 | 552.54 | FALSE | Not Filtered |
| BASE_328 | 600 | 0.61 | 1.98 | 4.5 | 501.29 | 425.53 | FALSE | Not Filtered |
| BASE_328 | 600 | 0.61 | 1.98 | 4.8 | 397.92 | 339.54 | FALSE | Not Filtered |
| BASE_328 | 600 | 0.61 | 1.98 | 5.1 | 314.02 | 278.32 | FALSE | Not Filtered |
| BASE_328 | 600 | 0.61 | 1.98 | 5.4 | 250.3 | 233.04 | FALSE | Not Filtered |
| BASE_328 | 600 | 0.61 | 1.98 | 5.7 | 213.26 | 198.49 | FALSE | Not Filtered |
| BASE_328 | 600 | 0.61 | 1.98 | 6 | 176.59 | 171.46 | FALSE | Not Filtered |
| BASE_307 | 300 | 0.91 | 0.30 | 2.4 | 294.61 | 239.11 | TRUE | Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 2.7 | 233.57 | 193.49 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-2 Unobstructed Simulation Results | | | | | | | | |
|--|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
| BASE_307 | 300 | 0.91 | 0.30 | 3 | 194.58 | 160.36 | TRUE | Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 3.3 | 158.8 | 135.45 | TRUE | Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 3.6 | 133.72 | 116.21 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 3.9 | 110.18 | 100.99 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 4.2 | 97.21 | 88.73 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 4.5 | 84.82 | 78.69 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 4.8 | 76.364 | 70.35 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 5.1 | 68.72 | 63.34 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 5.4 | 61.382 | 57.39 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 5.7 | 56.444 | 52.28 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_307 | 300 | 0.91 | 0.30 | 6 | 52.33 | 47.86 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 2.4 | 378.29 | 312.56 | TRUE | Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 2.7 | 287.23 | 250.60 | TRUE | Source Located 1 ft. above Ground |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_308 | 400 | 0.91 | 0.30 | 3 | 227.12 | 206.19 | TRUE | Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 3.3 | 180.15 | 173.15 | TRUE | Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 3.6 | 154.74 | 147.84 | TRUE | Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 3.9 | 130.12 | 127.97 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 4.2 | 112.85 | 112.05 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 4.5 | 99.44 | 99.08 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 4.8 | 89.37 | 88.36 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 5.1 | 80.38 | 79.38 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 5.4 | 72.991 | 71.77 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 5.7 | 66.197 | 65.27 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_308 | 400 | 0.91 | 0.30 | 6 | 62.1 | 59.66 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 2.4 | 530.61 | 388.34 | TRUE | Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 2.7 | 399.64 | 308.67 | TRUE | Source Located 1 ft. above Ground |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_309 | 500 | 0.91 | 0.30 | 3 | 316.36 | 252.27 | TRUE | Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 3.3 | 253.48 | 210.73 | TRUE | Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 3.6 | 211.54 | 179.14 | TRUE | Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 3.9 | 173.13 | 154.50 | TRUE | Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 4.2 | 149.53 | 134.87 | TRUE | Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 4.5 | 131.51 | 118.94 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 4.8 | 116.85 | 105.83 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 5.1 | 100.39 | 94.88 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 5.4 | 89.79 | 85.64 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 5.7 | 81.01 | 77.76 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_309 | 500 | 0.91 | 0.30 | 6 | 75.255 | 70.98 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 2.4 | 596.83 | 467.23 | TRUE | Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 2.7 | 462.19 | 368.31 | TRUE | Source Located 1 ft. above Ground |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|--|
| BASE_310 | 600 | 0.91 | 0.30 | 3 | 379.52 | 299.11 | TRUE | Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 3.3 | 298.51 | 248.59 | TRUE | Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 3.6 | 243.35 | 210.46 | TRUE | Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 3.9 | 196.5 | 180.89 | TRUE | Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 4.2 | 172.41 | 157.46 | TRUE | Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 4.5 | 150.21 | 138.53 | TRUE | Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 4.8 | 136 | 122.99 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 5.1 | 121.42 | 110.07 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 5.4 | 106.73 | 99.19 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 5.7 | 96.21 | 89.93 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_310 | 600 | 0.91 | 0.30 | 6 | 87.94 | 81.98 | TRUE | Heskestad < 130 C, Source Located 1 ft. above Ground |
| BASE_318 | 300 | 0.91 | 1.14 | 2.4 | 692.22 | 528.15 | FALSE | Not Filtered |
| BASE_318 | 300 | 0.91 | 1.14 | 2.7 | 538.13 | 380.26 | FALSE | Not Filtered |
| BASE_318 | 300 | 0.91 | 1.14 | 3 | 417.48 | 289.03 | FALSE | Not Filtered |
| BASE_318 | 300 | 0.91 | 1.14 | 3.3 | 314.68 | 228.39 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_318 | 300 | 0.91 | 1.14 | 3.6 | 259.57 | 185.82 | FALSE | Not Filtered |
| BASE_318 | 300 | 0.91 | 1.14 | 3.9 | 205.38 | 154.66 | FALSE | Not Filtered |
| BASE_318 | 300 | 0.91 | 1.14 | 4.2 | 170.6 | 131.09 | FALSE | Not Filtered |
| BASE_318 | 300 | 0.91 | 1.14 | 4.5 | 142.25 | 112.79 | TRUE | Heskestad < 130 C |
| BASE_318 | 300 | 0.91 | 1.14 | 4.8 | 125.76 | 98.25 | TRUE | Heskestad < 130 C |
| BASE_318 | 300 | 0.91 | 1.14 | 5.1 | 109.41 | 86.50 | TRUE | Heskestad < 130 C |
| BASE_318 | 300 | 0.91 | 1.14 | 5.4 | 97.66 | 76.85 | TRUE | Heskestad < 130 C |
| BASE_318 | 300 | 0.91 | 1.14 | 5.7 | 88.61 | 68.81 | TRUE | Heskestad < 130 C |
| BASE_318 | 300 | 0.91 | 1.14 | 6 | 79.48 | 62.04 | TRUE | Heskestad < 130 C |
| BASE_319 | 400 | 0.91 | 1.14 | 2.4 | 776.45 | 724.41 | FALSE | Not Filtered |
| BASE_319 | 400 | 0.91 | 1.14 | 2.7 | 661.63 | 509.75 | FALSE | Not Filtered |
| BASE_319 | 400 | 0.91 | 1.14 | 3 | 527.06 | 381.39 | FALSE | Not Filtered |
| BASE_319 | 400 | 0.91 | 1.14 | 3.3 | 401.4 | 297.92 | FALSE | Not Filtered |
| BASE_319 | 400 | 0.91 | 1.14 | 3.6 | 320.13 | 240.27 | FALSE | Not Filtered |
| BASE_319 | 400 | 0.91 | 1.14 | 3.9 | 245.06 | 198.60 | FALSE | Not Filtered |
| BASE_319 | 400 | 0.91 | 1.14 | 4.2 | 201.27 | 167.40 | FALSE | Not Filtered |
| BASE_319 | 400 | 0.91 | 1.14 | 4.5 | 164.98 | 143.36 | FALSE | Not Filtered |
| BASE_319 | 400 | 0.91 | 1.14 | 4.8 | 140.84 | 124.41 | TRUE | Heskestad < 130 C |
| BASE_319 | 400 | 0.91 | 1.14 | 5.1 | 123.14 | 109.17 | TRUE | Heskestad < 130 C |
| BASE_319 | 400 | 0.91 | 1.14 | 5.4 | 104.51 | 96.71 | TRUE | Heskestad < 130 C |
| BASE_319 | 400 | 0.91 | 1.14 | 5.7 | 91.71 | 86.38 | TRUE | Heskestad < 130 C |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_319 | 400 | 0.91 | 1.14 | 6 | 81.9 | 77.71 | TRUE | Heskestad < 130 C |
| BASE_320 | 500 | 0.91 | 1.14 | 2.4 | 840.34 | 942.74 | TRUE | Heskestad > 800 C |
| BASE_320 | 500 | 0.91 | 1.14 | 2.7 | 756.11 | 648.67 | FALSE | Not Filtered |
| BASE_320 | 500 | 0.91 | 1.14 | 3 | 644.4 | 478.07 | FALSE | Not Filtered |
| BASE_320 | 500 | 0.91 | 1.14 | 3.3 | 513.15 | 369.41 | FALSE | Not Filtered |
| BASE_320 | 500 | 0.91 | 1.14 | 3.6 | 405.57 | 295.50 | FALSE | Not Filtered |
| BASE_320 | 500 | 0.91 | 1.14 | 3.9 | 313.67 | 242.70 | FALSE | Not Filtered |
| BASE_320 | 500 | 0.91 | 1.14 | 4.2 | 259.89 | 203.52 | FALSE | Not Filtered |
| BASE_320 | 500 | 0.91 | 1.14 | 4.5 | 213.94 | 173.57 | FALSE | Not Filtered |
| BASE_320 | 500 | 0.91 | 1.14 | 4.8 | 176.05 | 150.10 | FALSE | Not Filtered |
| BASE_320 | 500 | 0.91 | 1.14 | 5.1 | 151.54 | 131.32 | FALSE | Not Filtered |
| BASE_320 | 500 | 0.91 | 1.14 | 5.4 | 128.29 | 116.03 | TRUE | Heskestad < 130 C |
| BASE_320 | 500 | 0.91 | 1.14 | 5.7 | 109.45 | 103.41 | TRUE | Heskestad < 130 C |
| BASE_320 | 500 | 0.91 | 1.14 | 6 | 96.93 | 92.85 | TRUE | Heskestad < 130 C |
| BASE_321 | 600 | 0.91 | 1.14 | 2.4 | 889.62 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_321 | 600 | 0.91 | 1.14 | 2.7 | 821.75 | 799.00 | FALSE | Not Filtered |
| BASE_321 | 600 | 0.91 | 1.14 | 3 | 702.23 | 580.18 | FALSE | Not Filtered |
| BASE_321 | 600 | 0.91 | 1.14 | 3.3 | 572.03 | 443.62 | FALSE | Not Filtered |
| BASE_321 | 600 | 0.91 | 1.14 | 3.6 | 458.85 | 352.09 | FALSE | Not Filtered |
| BASE_321 | 600 | 0.91 | 1.14 | 3.9 | 366.35 | 287.43 | FALSE | Not Filtered |
| BASE_321 | 600 | 0.91 | 1.14 | 4.2 | 299.58 | 239.87 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_321 | 600 | 0.91 | 1.14 | 4.5 | 246.77 | 203.76 | FALSE | Not Filtered |
| BASE_321 | 600 | 0.91 | 1.14 | 4.8 | 205.76 | 175.63 | FALSE | Not Filtered |
| BASE_321 | 600 | 0.91 | 1.14 | 5.1 | 181.11 | 153.23 | FALSE | Not Filtered |
| BASE_321 | 600 | 0.91 | 1.14 | 5.4 | 153.17 | 135.08 | FALSE | Not Filtered |
| BASE_321 | 600 | 0.91 | 1.14 | 5.7 | 130.5 | 120.14 | TRUE | Heskestad < 130 C |
| BASE_321 | 600 | 0.91 | 1.14 | 6 | 116.01 | 107.67 | TRUE | Heskestad < 130 C |
| BASE_329 | 300 | 0.91 | 1.98 | 2.4 | 786.08 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_329 | 300 | 0.91 | 1.98 | 2.7 | 833.93 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_329 | 300 | 0.91 | 1.98 | 3 | 779.18 | 724.86 | FALSE | Not Filtered |
| BASE_329 | 300 | 0.91 | 1.98 | 3.3 | 642.61 | 490.88 | FALSE | Not Filtered |
| BASE_329 | 300 | 0.91 | 1.98 | 3.6 | 503.08 | 358.00 | FALSE | Not Filtered |
| BASE_329 | 300 | 0.91 | 1.98 | 3.9 | 371.31 | 274.58 | FALSE | Not Filtered |
| BASE_329 | 300 | 0.91 | 1.98 | 4.2 | 288.47 | 218.42 | FALSE | Not Filtered |
| BASE_329 | 300 | 0.91 | 1.98 | 4.5 | 214 | 178.62 | FALSE | Not Filtered |
| BASE_329 | 300 | 0.91 | 1.98 | 4.8 | 173.05 | 149.28 | FALSE | Not Filtered |
| BASE_329 | 300 | 0.91 | 1.98 | 5.1 | 148.51 | 126.95 | TRUE | Heskestad < 130 C |
| BASE_329 | 300 | 0.91 | 1.98 | 5.4 | 127.52 | 109.52 | TRUE | Heskestad < 130 C |
| BASE_329 | 300 | 0.91 | 1.98 | 5.7 | 112.57 | 95.63 | TRUE | Heskestad < 130 C |
| BASE_329 | 300 | 0.91 | 1.98 | 6 | 97.15 | 84.36 | TRUE | Heskestad < 130 C |
| BASE_330 | 400 | 0.91 | 1.98 | 2.4 | 774.29 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_330 | 400 | 0.91 | 1.98 | 2.7 | 859.64 | 1000.00 | TRUE | Heskestad > 800 C |

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_330 | 400 | 0.91 | 1.98 | 3 | 856.89 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_330 | 400 | 0.91 | 1.98 | 3.3 | 771.36 | 669.58 | FALSE | Not Filtered |
| BASE_330 | 400 | 0.91 | 1.98 | 3.6 | 659.28 | 478.13 | FALSE | Not Filtered |
| BASE_330 | 400 | 0.91 | 1.98 | 3.9 | 496.43 | 361.36 | FALSE | Not Filtered |
| BASE_330 | 400 | 0.91 | 1.98 | 4.2 | 394.1 | 284.35 | FALSE | Not Filtered |
| BASE_330 | 400 | 0.91 | 1.98 | 4.5 | 308.32 | 230.60 | FALSE | Not Filtered |
| BASE_330 | 400 | 0.91 | 1.98 | 4.8 | 249.53 | 191.45 | FALSE | Not Filtered |
| BASE_330 | 400 | 0.91 | 1.98 | 5.1 | 198.13 | 161.94 | FALSE | Not Filtered |
| BASE_330 | 400 | 0.91 | 1.98 | 5.4 | 160.84 | 139.09 | FALSE | Not Filtered |
| BASE_330 | 400 | 0.91 | 1.98 | 5.7 | 138.31 | 121.00 | TRUE | Heskestad < 130 C |
| BASE_330 | 400 | 0.91 | 1.98 | 6 | 120.88 | 106.40 | TRUE | Heskestad < 130 C |
| BASE_331 | 500 | 0.91 | 1.98 | 2.4 | 788.64 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_331 | 500 | 0.91 | 1.98 | 2.7 | 857.78 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_331 | 500 | 0.91 | 1.98 | 3 | 859.73 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_331 | 500 | 0.91 | 1.98 | 3.3 | 814.29 | 866.63 | TRUE | Heskestad > 800 C |
| BASE_331 | 500 | 0.91 | 1.98 | 3.6 | 722.21 | 606.27 | FALSE | Not Filtered |
| BASE_331 | 500 | 0.91 | 1.98 | 3.9 | 590.36 | 451.82 | FALSE | Not Filtered |
| BASE_331 | 500 | 0.91 | 1.98 | 4.2 | 478.39 | 351.92 | FALSE | Not Filtered |
| BASE_331 | 500 | 0.91 | 1.98 | 4.5 | 385.71 | 283.21 | FALSE | Not Filtered |
| BASE_331 | 500 | 0.91 | 1.98 | 4.8 | 308.82 | 233.69 | FALSE | Not Filtered |
| BASE_331 | 500 | 0.91 | 1.98 | 5.1 | 257.61 | 196.71 | FALSE | Not Filtered |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-2
Unobstructed Simulation Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Heskestad Plume Temperature (Equation 4-3) | Data Filtered | Filtration Criteria |
|----------|----------|--------------|-------------------|---------------|------------------------------------|--|---------------|---------------------|
| BASE_331 | 500 | 0.91 | 1.98 | 5.4 | 203.98 | 168.27 | FALSE | Not Filtered |
| BASE_331 | 500 | 0.91 | 1.98 | 5.7 | 161.05 | 145.89 | FALSE | Not Filtered |
| BASE_331 | 500 | 0.91 | 1.98 | 6 | 135.64 | 127.92 | TRUE | Heskestad < 130 C |
| BASE_332 | 600 | 0.91 | 1.98 | 2.4 | 805.72 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_332 | 600 | 0.91 | 1.98 | 2.7 | 850.96 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_332 | 600 | 0.91 | 1.98 | 3 | 885.48 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_332 | 600 | 0.91 | 1.98 | 3.3 | 870.38 | 1000.00 | TRUE | Heskestad > 800 C |
| BASE_332 | 600 | 0.91 | 1.98 | 3.6 | 811.98 | 744.13 | FALSE | Not Filtered |
| BASE_332 | 600 | 0.91 | 1.98 | 3.9 | 691.37 | 546.97 | FALSE | Not Filtered |
| BASE_332 | 600 | 0.91 | 1.98 | 4.2 | 589.37 | 421.86 | FALSE | Not Filtered |
| BASE_332 | 600 | 0.91 | 1.98 | 4.5 | 462.96 | 336.98 | FALSE | Not Filtered |
| BASE_332 | 600 | 0.91 | 1.98 | 4.8 | 366.56 | 276.46 | FALSE | Not Filtered |
| BASE_332 | 600 | 0.91 | 1.98 | 5.1 | 290.06 | 231.64 | FALSE | Not Filtered |
| BASE_332 | 600 | 0.91 | 1.98 | 5.4 | 232.74 | 197.40 | FALSE | Not Filtered |
| BASE_332 | 600 | 0.91 | 1.98 | 5.7 | 198.21 | 170.60 | FALSE | Not Filtered |
| BASE_332 | 600 | 0.91 | 1.98 | 6 | 174.61 | 149.18 | FALSE | Not Filtered |

Determination of Bias and Uncertainty

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | $\text{Ln}(\Delta\text{FDS}/\Delta\text{Heskestad})$ |
|-----------|--------------------------------|---------------------------|--|
| ARCH_1055 | 251.35 | 772.37 | -1.12 |
| ARCH_1055 | 207.5 | 595.31 | -1.05 |
| ARCH_1055 | 181.32 | 475.29 | -0.96 |
| ARCH_1055 | 158.36 | 389.79 | -0.90 |
| ARCH_1055 | 139.08 | 326.49 | -0.85 |
| ARCH_1055 | 123.06 | 278.17 | -0.82 |
| ARCH_1056 | 384.48 | 729.52 | -0.64 |
| ARCH_1056 | 307.37 | 566.88 | -0.61 |
| ARCH_1056 | 259.4 | 455.37 | -0.56 |
| ARCH_1056 | 223.14 | 375.23 | -0.52 |
| ARCH_1056 | 197.29 | 315.49 | -0.47 |
| ARCH_1056 | 177.62 | 269.64 | -0.42 |
| ARCH_1056 | 161.65 | 233.59 | -0.37 |
| ARCH_1064 | 228.02 | 764.70 | -1.21 |
| ARCH_1064 | 180.07 | 590.25 | -1.19 |
| ARCH_1064 | 153.69 | 471.76 | -1.12 |
| ARCH_1064 | 132.29 | 387.22 | -1.07 |
| ARCH_1064 | 119.64 | 324.55 | -1.00 |
| ARCH_1065 | 322.39 | 722.52 | -0.81 |
| ARCH_1065 | 255.39 | 562.20 | -0.79 |
| ARCH_1065 | 208.68 | 452.07 | -0.77 |
| ARCH_1065 | 180.89 | 372.81 | -0.72 |
| ARCH_1065 | 159.61 | 313.65 | -0.68 |
| ARCH_1065 | 138.36 | 268.21 | -0.66 |
| ARCH_1065 | 120.7 | 232.45 | -0.66 |
| ARCH_1065 | 112.26 | 203.75 | -0.60 |
| ARCH_830 | 198.07 | 402.61 | -0.71 |
| ARCH_830 | 112.16 | 264.28 | -0.86 |
| ARCH_836 | 126.04 | 584.26 | -1.53 |
| ARCH_837 | 171.73 | 619.87 | -1.28 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-3 Determination of Bias and Uncertainty | | | |
|--|---|--------------------------------------|--|
| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(ΔFDS/ΔHeskestad) |
| ARCH_837 | 118.23 | 365.81 | -1.13 |
| ARCH_894 | 239.92 | 515.47 | -0.76 |
| ARCH_894 | 120.83 | 354.17 | -1.08 |
| ARCH_895 | 172.02 | 535.11 | -1.13 |
| ARCH_895 | 125.64 | 384.36 | -1.12 |
| ARCH_896 | 253.67 | 735.01 | -1.06 |
| ARCH_896 | 172.71 | 515.78 | -1.09 |
| ARCH_896 | 135.45 | 385.18 | -1.05 |
| ARCH_896 | 115.42 | 300.47 | -0.96 |
| ARCH_897 | 255.53 | 656.81 | -0.94 |
| ARCH_897 | 187.46 | 483.05 | -0.95 |
| ARCH_897 | 155.04 | 372.71 | -0.88 |
| ARCH_897 | 131.32 | 297.80 | -0.82 |
| ARCH_897 | 114.1 | 244.38 | -0.76 |
| ARCH_898 | 232 | 586.29 | -0.93 |
| ARCH_898 | 193.7 | 447.60 | -0.84 |
| ARCH_898 | 158.56 | 354.83 | -0.81 |
| ARCH_898 | 134.6 | 289.41 | -0.77 |
| ARCH_898 | 113.8 | 241.36 | -0.75 |
| ARCH_901 | 233.64 | 748.51 | -1.16 |
| ARCH_901 | 174.13 | 473.69 | -1.00 |
| ARCH_901 | 141.03 | 330.95 | -0.85 |
| ARCH_901 | 110.93 | 246.42 | -0.80 |
| ARCH_902 | 325.15 | 736.43 | -0.82 |
| ARCH_902 | 252.2 | 497.07 | -0.68 |
| ARCH_902 | 194.8 | 361.73 | -0.62 |
| ARCH_902 | 158.08 | 277.01 | -0.56 |
| ARCH_902 | 126.34 | 220.11 | -0.56 |
| ARCH_903 | 367.41 | 678.92 | -0.61 |
| ARCH_903 | 269.44 | 483.57 | -0.58 |
| ARCH_903 | 212.59 | 364.83 | -0.54 |
| ARCH_903 | 163.52 | 286.71 | -0.56 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(Δ FDS/ Δ Heskestad) |
|----------|--------------------------------|---------------------------|---------------------------------------|
| ARCH_903 | 137.37 | 232.29 | -0.53 |
| ARCH_903 | 118.3 | 192.70 | -0.49 |
| ARCH_904 | 414.66 | 613.57 | -0.39 |
| ARCH_904 | 314.39 | 456.37 | -0.37 |
| ARCH_904 | 236.69 | 354.97 | -0.41 |
| ARCH_904 | 193.59 | 285.36 | -0.39 |
| ARCH_904 | 162.15 | 235.27 | -0.37 |
| ARCH_904 | 138.1 | 197.91 | -0.36 |
| ARCH_904 | 115.49 | 169.21 | -0.38 |
| ARCH_905 | 513.68 | 753.25 | -0.38 |
| ARCH_905 | 398.77 | 552.54 | -0.33 |
| ARCH_905 | 299.55 | 425.53 | -0.35 |
| ARCH_905 | 243.95 | 339.54 | -0.33 |
| ARCH_905 | 198.04 | 278.32 | -0.34 |
| ARCH_905 | 162.57 | 233.04 | -0.36 |
| ARCH_905 | 134.08 | 198.49 | -0.39 |
| ARCH_905 | 116.82 | 171.46 | -0.38 |
| ARCH_958 | 201.52 | 528.15 | -0.96 |
| ARCH_958 | 115.52 | 380.26 | -1.19 |
| ARCH_959 | 254.49 | 724.41 | -1.05 |
| ARCH_959 | 150.19 | 509.75 | -1.22 |
| ARCH_959 | 115.72 | 381.39 | -1.19 |
| ARCH_960 | 186.86 | 648.67 | -1.24 |
| ARCH_960 | 146.01 | 478.07 | -1.19 |
| ARCH_960 | 117.15 | 369.41 | -1.15 |
| ARCH_961 | 164.16 | 580.18 | -1.26 |
| ARCH_961 | 132.43 | 443.62 | -1.21 |
| ARCH_961 | 113.03 | 352.09 | -1.14 |
| ARCH_965 | 212.09 | 724.86 | -1.23 |
| ARCH_965 | 157.64 | 490.88 | -1.14 |
| ARCH_965 | 126.25 | 358.00 | -1.04 |
| ARCH_966 | 255.26 | 669.58 | -0.96 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-3 Determination of Bias and Uncertainty | | | |
|--|---|--------------------------------------|--|
| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(ΔFDS/ΔHeskestad) |
| ARCH_966 | 199.12 | 478.13 | -0.88 |
| ARCH_966 | 160.14 | 361.36 | -0.81 |
| ARCH_966 | 134.08 | 284.35 | -0.75 |
| ARCH_966 | 110.46 | 230.60 | -0.74 |
| ARCH_967 | 232.72 | 606.27 | -0.96 |
| ARCH_967 | 196.54 | 451.82 | -0.83 |
| ARCH_967 | 163.63 | 351.92 | -0.77 |
| ARCH_967 | 133.81 | 283.21 | -0.75 |
| ARCH_967 | 114.52 | 233.69 | -0.71 |
| ARCH_968 | 291.81 | 744.13 | -0.94 |
| ARCH_968 | 225.14 | 546.97 | -0.89 |
| ARCH_968 | 189.01 | 421.86 | -0.80 |
| ARCH_968 | 153.48 | 336.98 | -0.79 |
| ARCH_968 | 129.83 | 276.46 | -0.76 |
| ARCH_968 | 111.62 | 231.64 | -0.73 |
| OBST_1052 | 360.12 | 772.37 | -0.76 |
| OBST_1052 | 318.6 | 595.31 | -0.63 |
| OBST_1052 | 299.22 | 475.29 | -0.46 |
| OBST_1052 | 286.21 | 389.79 | -0.31 |
| OBST_1052 | 268.02 | 326.49 | -0.20 |
| OBST_1052 | 250.8 | 278.17 | -0.10 |
| OBST_1052 | 235.33 | 240.36 | -0.02 |
| OBST_1052 | 216.32 | 210.14 | 0.03 |
| OBST_1052 | 199.16 | 185.58 | 0.07 |
| OBST_1052 | 184.84 | 165.31 | 0.11 |
| OBST_1053 | 514.31 | 729.52 | -0.35 |
| OBST_1053 | 450.83 | 566.88 | -0.23 |
| OBST_1053 | 404.86 | 455.37 | -0.12 |
| OBST_1053 | 362.82 | 375.23 | -0.03 |
| OBST_1053 | 313 | 315.49 | -0.01 |
| OBST_1053 | 273.13 | 269.64 | 0.01 |
| OBST_1053 | 238.54 | 233.59 | 0.02 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(Δ FDS/ Δ Heskestad) |
|-----------|--------------------------------|---------------------------|---------------------------------------|
| OBST_1061 | 376.9 | 764.70 | -0.71 |
| OBST_1061 | 300.69 | 590.25 | -0.67 |
| OBST_1061 | 259.7 | 471.76 | -0.60 |
| OBST_1061 | 235.99 | 387.22 | -0.50 |
| OBST_1061 | 219.89 | 324.55 | -0.39 |
| OBST_1061 | 206.26 | 276.67 | -0.29 |
| OBST_1061 | 196.94 | 239.17 | -0.19 |
| OBST_1061 | 187.38 | 209.19 | -0.11 |
| OBST_1061 | 176.74 | 184.79 | -0.04 |
| OBST_1061 | 164 | 164.65 | 0.00 |
| OBST_1061 | 152.26 | 147.81 | 0.03 |
| OBST_1062 | 474.5 | 722.52 | -0.42 |
| OBST_1062 | 426.72 | 562.20 | -0.28 |
| OBST_1062 | 385.71 | 452.07 | -0.16 |
| OBST_1062 | 347.67 | 372.81 | -0.07 |
| OBST_1062 | 313.88 | 313.65 | 0.00 |
| OBST_1062 | 275.56 | 268.21 | 0.03 |
| OBST_1062 | 239.91 | 232.45 | 0.03 |
| OBST_1062 | 213 | 203.75 | 0.04 |
| OBST_808 | 118.47 | 209.49 | -0.57 |
| OBST_809 | 215.87 | 402.61 | -0.62 |
| OBST_809 | 135.85 | 264.28 | -0.67 |
| OBST_815 | 122.51 | 584.26 | -1.56 |
| OBST_816 | 150.7 | 619.87 | -1.41 |
| OBST_816 | 125.87 | 365.81 | -1.07 |
| OBST_816 | 110.11 | 245.21 | -0.80 |
| OBST_873 | 232.79 | 515.47 | -0.79 |
| OBST_873 | 158.78 | 354.17 | -0.80 |
| OBST_873 | 119.76 | 260.78 | -0.78 |
| OBST_874 | 225.86 | 535.11 | -0.86 |
| OBST_874 | 164.52 | 384.36 | -0.85 |
| OBST_874 | 136.76 | 291.68 | -0.76 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(Δ FDS/ Δ Heskestad) |
|----------|--------------------------------|---------------------------|---------------------------------------|
| OBST_874 | 126.93 | 230.20 | -0.60 |
| OBST_874 | 121.51 | 187.12 | -0.43 |
| OBST_874 | 116.21 | 155.63 | -0.29 |
| OBST_875 | 331.26 | 735.01 | -0.80 |
| OBST_875 | 234.18 | 515.78 | -0.79 |
| OBST_875 | 181.11 | 385.18 | -0.75 |
| OBST_875 | 168.81 | 300.47 | -0.58 |
| OBST_875 | 157.84 | 242.07 | -0.43 |
| OBST_875 | 149.98 | 199.93 | -0.29 |
| OBST_875 | 142.77 | 168.41 | -0.17 |
| OBST_875 | 134.43 | 144.15 | -0.07 |
| OBST_875 | 126.06 | 125.03 | 0.01 |
| OBST_876 | 305.36 | 656.81 | -0.77 |
| OBST_876 | 226.23 | 483.05 | -0.76 |
| OBST_876 | 210.64 | 372.71 | -0.57 |
| OBST_876 | 200.37 | 297.80 | -0.40 |
| OBST_876 | 189.08 | 244.38 | -0.26 |
| OBST_876 | 176.49 | 204.79 | -0.15 |
| OBST_876 | 165.18 | 174.55 | -0.06 |
| OBST_876 | 154.3 | 150.87 | 0.02 |
| OBST_876 | 142.71 | 131.94 | 0.08 |
| OBST_876 | 130.55 | 116.55 | 0.11 |
| OBST_877 | 279.89 | 586.29 | -0.74 |
| OBST_877 | 247.2 | 447.60 | -0.59 |
| OBST_877 | 232.02 | 354.83 | -0.42 |
| OBST_877 | 218.02 | 289.41 | -0.28 |
| OBST_877 | 200.1 | 241.36 | -0.19 |
| OBST_877 | 186.1 | 204.91 | -0.10 |
| OBST_877 | 174.77 | 176.53 | -0.01 |
| OBST_877 | 163.24 | 153.95 | 0.06 |
| OBST_877 | 150.25 | 135.67 | 0.10 |
| OBST_877 | 137.23 | 120.63 | 0.13 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(Δ FDS/ Δ Heskestad) |
|----------|--------------------------------|---------------------------|---------------------------------------|
| OBST_880 | 261.92 | 748.51 | -1.05 |
| OBST_880 | 186.03 | 473.69 | -0.93 |
| OBST_880 | 143.97 | 330.95 | -0.83 |
| OBST_880 | 115.19 | 246.42 | -0.76 |
| OBST_881 | 253.32 | 736.43 | -1.07 |
| OBST_881 | 214.24 | 497.07 | -0.84 |
| OBST_881 | 193.54 | 361.73 | -0.63 |
| OBST_881 | 179.06 | 277.01 | -0.44 |
| OBST_881 | 159.94 | 220.11 | -0.32 |
| OBST_881 | 145.89 | 179.84 | -0.21 |
| OBST_881 | 133.19 | 150.19 | -0.12 |
| OBST_881 | 118.07 | 127.65 | -0.08 |
| OBST_882 | 336 | 678.92 | -0.70 |
| OBST_882 | 295.04 | 483.57 | -0.49 |
| OBST_882 | 265.76 | 364.83 | -0.32 |
| OBST_882 | 233.9 | 286.71 | -0.20 |
| OBST_882 | 203.38 | 232.29 | -0.13 |
| OBST_882 | 180.05 | 192.70 | -0.07 |
| OBST_882 | 155.4 | 162.90 | -0.05 |
| OBST_882 | 134.3 | 139.84 | -0.04 |
| OBST_882 | 119.3 | 121.60 | -0.02 |
| OBST_883 | 376.41 | 613.57 | -0.49 |
| OBST_883 | 329.43 | 456.37 | -0.33 |
| OBST_883 | 285.67 | 354.97 | -0.22 |
| OBST_883 | 252.27 | 285.36 | -0.12 |
| OBST_883 | 227.61 | 235.27 | -0.03 |
| OBST_883 | 200 | 197.91 | 0.01 |
| OBST_883 | 174.5 | 169.21 | 0.03 |
| OBST_883 | 155.45 | 146.63 | 0.06 |
| OBST_884 | 480.69 | 753.25 | -0.45 |
| OBST_884 | 428.14 | 552.54 | -0.26 |
| OBST_884 | 374.23 | 425.53 | -0.13 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-3 Determination of Bias and Uncertainty | | | |
|--|---|--------------------------------------|--|
| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(ΔFDS/ΔHeskestad) |
| OBST_884 | 327.72 | 339.54 | -0.04 |
| OBST_884 | 284.84 | 278.32 | 0.02 |
| OBST_884 | 242.25 | 233.04 | 0.04 |
| OBST_884 | 210.22 | 198.49 | 0.06 |
| OBST_884 | 186.23 | 171.46 | 0.08 |
| OBST_937 | 236.44 | 528.15 | -0.80 |
| OBST_937 | 170.78 | 380.26 | -0.80 |
| OBST_937 | 126.6 | 289.03 | -0.83 |
| OBST_938 | 325.72 | 724.41 | -0.80 |
| OBST_938 | 212.8 | 509.75 | -0.87 |
| OBST_938 | 162.85 | 381.39 | -0.85 |
| OBST_938 | 136.65 | 297.92 | -0.78 |
| OBST_938 | 127.22 | 240.27 | -0.64 |
| OBST_938 | 121.22 | 198.60 | -0.49 |
| OBST_938 | 116.82 | 167.40 | -0.36 |
| OBST_938 | 110.48 | 143.36 | -0.26 |
| OBST_939 | 285.96 | 648.67 | -0.82 |
| OBST_939 | 204.42 | 478.07 | -0.85 |
| OBST_939 | 166.46 | 369.41 | -0.80 |
| OBST_939 | 156.39 | 295.50 | -0.64 |
| OBST_939 | 149.66 | 242.70 | -0.48 |
| OBST_939 | 144.02 | 203.52 | -0.35 |
| OBST_939 | 136.28 | 173.57 | -0.24 |
| OBST_939 | 129.36 | 150.10 | -0.15 |
| OBST_939 | 121.6 | 131.32 | -0.08 |
| OBST_939 | 112.1 | 116.03 | -0.03 |
| OBST_940 | 272.81 | 580.18 | -0.75 |
| OBST_940 | 220.08 | 443.62 | -0.70 |
| OBST_940 | 194.75 | 352.09 | -0.59 |
| OBST_940 | 176.25 | 287.43 | -0.49 |
| OBST_940 | 167.07 | 239.87 | -0.36 |
| OBST_940 | 159.33 | 203.76 | -0.25 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(Δ FDS/ Δ Heskestad) |
|----------|--------------------------------|---------------------------|---------------------------------------|
| OBST_940 | 152.41 | 175.63 | -0.14 |
| OBST_940 | 145.68 | 153.23 | -0.05 |
| OBST_940 | 136.24 | 135.08 | 0.01 |
| OBST_940 | 125.56 | 120.14 | 0.04 |
| OBST_944 | 210.14 | 724.86 | -1.24 |
| OBST_944 | 178.17 | 490.88 | -1.01 |
| OBST_944 | 170.23 | 358.00 | -0.74 |
| OBST_944 | 162.18 | 274.58 | -0.53 |
| OBST_944 | 152.71 | 218.42 | -0.36 |
| OBST_944 | 141.02 | 178.62 | -0.24 |
| OBST_944 | 130.26 | 149.28 | -0.14 |
| OBST_944 | 119.52 | 126.95 | -0.06 |
| OBST_945 | 251.01 | 669.58 | -0.98 |
| OBST_945 | 236.39 | 478.13 | -0.70 |
| OBST_945 | 222.45 | 361.36 | -0.49 |
| OBST_945 | 204.26 | 284.35 | -0.33 |
| OBST_945 | 182.73 | 230.60 | -0.23 |
| OBST_945 | 165.73 | 191.45 | -0.14 |
| OBST_945 | 149.17 | 161.94 | -0.08 |
| OBST_945 | 131.88 | 139.09 | -0.05 |
| OBST_945 | 115.11 | 121.00 | -0.05 |
| OBST_946 | 303.72 | 606.27 | -0.69 |
| OBST_946 | 282.66 | 451.82 | -0.47 |
| OBST_946 | 260.58 | 351.92 | -0.30 |
| OBST_946 | 235.83 | 283.21 | -0.18 |
| OBST_946 | 213.31 | 233.69 | -0.09 |
| OBST_946 | 190.86 | 196.71 | -0.03 |
| OBST_946 | 168.4 | 168.27 | 0.00 |
| OBST_946 | 145.77 | 145.89 | 0.00 |
| OBST_946 | 130.43 | 127.92 | 0.02 |
| OBST_947 | 390.02 | 744.13 | -0.65 |
| OBST_947 | 351.04 | 546.97 | -0.44 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-3 Determination of Bias and Uncertainty | | | |
|--|---|--------------------------------------|--|
| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(ΔFDS/ΔHeskestad) |
| OBST_947 | 318.75 | 421.86 | -0.28 |
| OBST_947 | 279.61 | 336.98 | -0.19 |
| OBST_947 | 246.02 | 276.46 | -0.12 |
| OBST_947 | 217.54 | 231.64 | -0.06 |
| OBST_947 | 189.53 | 197.40 | -0.04 |
| OBST_947 | 164.54 | 170.60 | -0.04 |
| OBST_947 | 147.13 | 149.18 | -0.01 |
| THREEWALL_1058 | 381.71 | 772.37 | -0.70 |
| THREEWALL_1058 | 319.8 | 595.31 | -0.62 |
| THREEWALL_1058 | 264.72 | 475.29 | -0.59 |
| THREEWALL_1058 | 230.82 | 389.79 | -0.52 |
| THREEWALL_1058 | 195.58 | 326.49 | -0.51 |
| THREEWALL_1058 | 168.42 | 278.17 | -0.50 |
| THREEWALL_1058 | 146.49 | 240.36 | -0.50 |
| THREEWALL_1058 | 126.15 | 210.14 | -0.51 |
| THREEWALL_1058 | 115.05 | 185.58 | -0.48 |
| THREEWALL_1059 | 527.72 | 729.52 | -0.32 |
| THREEWALL_1059 | 411.6 | 566.88 | -0.32 |
| THREEWALL_1059 | 334.89 | 455.37 | -0.31 |
| THREEWALL_1059 | 286.67 | 375.23 | -0.27 |
| THREEWALL_1059 | 244.2 | 315.49 | -0.26 |
| THREEWALL_1059 | 207.16 | 269.64 | -0.26 |
| THREEWALL_1059 | 186.73 | 233.59 | -0.22 |
| THREEWALL_1067 | 343.31 | 764.70 | -0.80 |
| THREEWALL_1067 | 279.81 | 590.25 | -0.75 |
| THREEWALL_1067 | 235.01 | 471.76 | -0.70 |
| THREEWALL_1067 | 190.95 | 387.22 | -0.71 |
| THREEWALL_1067 | 167.89 | 324.55 | -0.66 |
| THREEWALL_1067 | 141.24 | 276.67 | -0.67 |
| THREEWALL_1067 | 125.62 | 239.17 | -0.64 |
| THREEWALL_1067 | 112.94 | 209.19 | -0.62 |
| THREEWALL_1068 | 496.14 | 722.52 | -0.38 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(Δ FDS/ Δ Heskestad) |
|----------------|--------------------------------|---------------------------|---------------------------------------|
| THREEWALL_1068 | 397.07 | 562.20 | -0.35 |
| THREEWALL_1068 | 318.85 | 452.07 | -0.35 |
| THREEWALL_1068 | 272.29 | 372.81 | -0.31 |
| THREEWALL_1068 | 234.15 | 313.65 | -0.29 |
| THREEWALL_1068 | 204.04 | 268.21 | -0.27 |
| THREEWALL_1068 | 179.74 | 232.45 | -0.26 |
| THREEWALL_1068 | 161.86 | 203.75 | -0.23 |
| THREEWALL_850 | 155.3 | 209.49 | -0.30 |
| THREEWALL_851 | 255.53 | 402.61 | -0.45 |
| THREEWALL_851 | 139.25 | 264.28 | -0.64 |
| THREEWALL_857 | 235.48 | 584.26 | -0.91 |
| THREEWALL_857 | 157.34 | 306.03 | -0.67 |
| THREEWALL_857 | 111.29 | 192.28 | -0.55 |
| THREEWALL_858 | 327.37 | 619.87 | -0.64 |
| THREEWALL_858 | 218.83 | 365.81 | -0.51 |
| THREEWALL_858 | 169.87 | 245.21 | -0.37 |
| THREEWALL_858 | 135.33 | 177.64 | -0.27 |
| THREEWALL_915 | 300.06 | 515.47 | -0.54 |
| THREEWALL_915 | 159.86 | 354.17 | -0.80 |
| THREEWALL_915 | 134.36 | 260.78 | -0.66 |
| THREEWALL_916 | 250.02 | 535.11 | -0.76 |
| THREEWALL_916 | 174.28 | 384.36 | -0.79 |
| THREEWALL_916 | 141.38 | 291.68 | -0.72 |
| THREEWALL_916 | 123.99 | 230.20 | -0.62 |
| THREEWALL_916 | 110.29 | 187.12 | -0.53 |
| THREEWALL_917 | 370.31 | 735.01 | -0.69 |
| THREEWALL_917 | 250.68 | 515.78 | -0.72 |
| THREEWALL_917 | 183.21 | 385.18 | -0.74 |
| THREEWALL_917 | 152.33 | 300.47 | -0.68 |
| THREEWALL_917 | 132.92 | 242.07 | -0.60 |
| THREEWALL_917 | 118.8 | 199.93 | -0.52 |
| THREEWALL_918 | 313.59 | 656.81 | -0.74 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(Δ FDS/ Δ Heskestad) |
|---------------|--------------------------------|---------------------------|---------------------------------------|
| THREEWALL_918 | 222.06 | 483.05 | -0.78 |
| THREEWALL_918 | 184.52 | 372.71 | -0.70 |
| THREEWALL_918 | 155.58 | 297.80 | -0.65 |
| THREEWALL_918 | 134.38 | 244.38 | -0.60 |
| THREEWALL_918 | 110.96 | 204.79 | -0.61 |
| THREEWALL_919 | 305.81 | 586.29 | -0.65 |
| THREEWALL_919 | 248 | 447.60 | -0.59 |
| THREEWALL_919 | 203.92 | 354.83 | -0.55 |
| THREEWALL_919 | 176.1 | 289.41 | -0.50 |
| THREEWALL_919 | 152.14 | 241.36 | -0.46 |
| THREEWALL_919 | 138.53 | 204.91 | -0.39 |
| THREEWALL_919 | 123.64 | 176.53 | -0.36 |
| THREEWALL_922 | 418.25 | 748.51 | -0.58 |
| THREEWALL_922 | 309.14 | 473.69 | -0.43 |
| THREEWALL_922 | 236.87 | 330.95 | -0.33 |
| THREEWALL_922 | 183.85 | 246.42 | -0.29 |
| THREEWALL_922 | 148.83 | 191.81 | -0.25 |
| THREEWALL_922 | 125.65 | 154.28 | -0.21 |
| THREEWALL_923 | 490.62 | 736.43 | -0.41 |
| THREEWALL_923 | 368.3 | 497.07 | -0.30 |
| THREEWALL_923 | 270.83 | 361.73 | -0.29 |
| THREEWALL_923 | 210.29 | 277.01 | -0.28 |
| THREEWALL_923 | 162.55 | 220.11 | -0.30 |
| THREEWALL_923 | 137.83 | 179.84 | -0.27 |
| THREEWALL_923 | 120.83 | 150.19 | -0.22 |
| THREEWALL_924 | 499.42 | 678.92 | -0.31 |
| THREEWALL_924 | 368.24 | 483.57 | -0.27 |
| THREEWALL_924 | 286.26 | 364.83 | -0.24 |
| THREEWALL_924 | 226.33 | 286.71 | -0.24 |
| THREEWALL_924 | 193.8 | 232.29 | -0.18 |
| THREEWALL_924 | 163.16 | 192.70 | -0.17 |
| THREEWALL_924 | 137.27 | 162.90 | -0.17 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | $\ln(\Delta FDS/\Delta Heskestad)$ |
|---------------|-----------------------------------|------------------------------|------------------------------------|
| THREEWALL_924 | 117.47 | 139.84 | -0.17 |
| THREEWALL_925 | 498.6 | 613.57 | -0.21 |
| THREEWALL_925 | 385.1 | 456.37 | -0.17 |
| THREEWALL_925 | 290.44 | 354.97 | -0.20 |
| THREEWALL_925 | 242.34 | 285.36 | -0.16 |
| THREEWALL_925 | 201.57 | 235.27 | -0.15 |
| THREEWALL_925 | 172.52 | 197.91 | -0.14 |
| THREEWALL_925 | 146.57 | 169.21 | -0.14 |
| THREEWALL_925 | 126.18 | 146.63 | -0.15 |
| THREEWALL_926 | 541.53 | 753.25 | -0.33 |
| THREEWALL_926 | 420.71 | 552.54 | -0.27 |
| THREEWALL_926 | 320.56 | 425.53 | -0.28 |
| THREEWALL_926 | 264.69 | 339.54 | -0.25 |
| THREEWALL_926 | 224.92 | 278.32 | -0.21 |
| THREEWALL_926 | 188.27 | 233.04 | -0.21 |
| THREEWALL_926 | 163.19 | 198.49 | -0.20 |
| THREEWALL_926 | 146.48 | 171.46 | -0.16 |
| THREEWALL_979 | 290.52 | 528.15 | -0.60 |
| THREEWALL_979 | 164.64 | 380.26 | -0.84 |
| THREEWALL_979 | 126.48 | 289.03 | -0.83 |
| THREEWALL_980 | 360.97 | 724.41 | -0.70 |
| THREEWALL_980 | 211.62 | 509.75 | -0.88 |
| THREEWALL_980 | 164.42 | 381.39 | -0.84 |
| THREEWALL_980 | 131.59 | 297.92 | -0.82 |
| THREEWALL_980 | 114.53 | 240.27 | -0.74 |
| THREEWALL_981 | 263.14 | 648.67 | -0.90 |
| THREEWALL_981 | 203.96 | 478.07 | -0.85 |
| THREEWALL_981 | 167.48 | 369.41 | -0.79 |
| THREEWALL_981 | 143.06 | 295.50 | -0.73 |
| THREEWALL_981 | 126.31 | 242.70 | -0.65 |
| THREEWALL_981 | 113.8 | 203.52 | -0.58 |
| THREEWALL_982 | 248.81 | 580.18 | -0.85 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-3 Determination of Bias and Uncertainty | | | |
|--|---|--------------------------------------|--|
| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(ΔFDS/ΔHeskestad) |
| THREEWALL_982 | 201.1 | 443.62 | -0.79 |
| THREEWALL_982 | 173.38 | 352.09 | -0.71 |
| THREEWALL_982 | 151.54 | 287.43 | -0.64 |
| THREEWALL_982 | 133.52 | 239.87 | -0.59 |
| THREEWALL_982 | 118.27 | 203.76 | -0.54 |
| THREEWALL_986 | 470.11 | 724.86 | -0.43 |
| THREEWALL_986 | 333.3 | 490.88 | -0.39 |
| THREEWALL_986 | 258.73 | 358.00 | -0.32 |
| THREEWALL_986 | 207.21 | 274.58 | -0.28 |
| THREEWALL_986 | 162.1 | 218.42 | -0.30 |
| THREEWALL_986 | 128.46 | 178.62 | -0.33 |
| THREEWALL_987 | 421.27 | 669.58 | -0.46 |
| THREEWALL_987 | 319.87 | 478.13 | -0.40 |
| THREEWALL_987 | 246.42 | 361.36 | -0.38 |
| THREEWALL_987 | 200.39 | 284.35 | -0.35 |
| THREEWALL_987 | 162.32 | 230.60 | -0.35 |
| THREEWALL_987 | 144.19 | 191.45 | -0.28 |
| THREEWALL_987 | 128.53 | 161.94 | -0.23 |
| THREEWALL_987 | 115.35 | 139.09 | -0.19 |
| THREEWALL_988 | 434.55 | 606.27 | -0.33 |
| THREEWALL_988 | 323.91 | 451.82 | -0.33 |
| THREEWALL_988 | 262.91 | 351.92 | -0.29 |
| THREEWALL_988 | 209.44 | 283.21 | -0.30 |
| THREEWALL_988 | 178.62 | 233.69 | -0.27 |
| THREEWALL_988 | 157.02 | 196.71 | -0.23 |
| THREEWALL_988 | 137.24 | 168.27 | -0.20 |
| THREEWALL_988 | 117.4 | 145.89 | -0.22 |
| THREEWALL_989 | 562.49 | 744.13 | -0.28 |
| THREEWALL_989 | 411.65 | 546.97 | -0.28 |
| THREEWALL_989 | 329.02 | 421.86 | -0.25 |
| THREEWALL_989 | 250.92 | 336.98 | -0.29 |
| THREEWALL_989 | 213.27 | 276.46 | -0.26 |

Table E-3
Determination of Bias and Uncertainty

| Test | Obstructed FDS Temperature (C) | Heskestad Temperature (C) | Ln(Δ FDS/ Δ Heskestad) |
|---------------|-----------------------------------|------------------------------|---------------------------------------|
| THREEWALL_989 | 182.93 | 231.64 | -0.24 |
| THREEWALL_989 | 156.71 | 197.40 | -0.23 |
| THREEWALL_989 | 131.1 | 170.60 | -0.26 |
| THREEWALL_989 | 117.61 | 149.18 | -0.24 |

USING EQUATIONS FROM SECTION 5.2.4.5

$$\overline{\ln\left(\frac{M}{E}\right)} = \frac{1}{n} \sum_{i=1}^n \ln\left(\frac{M_i}{E_i}\right) = -0.50 \quad (5-11)$$

$$\tilde{\sigma}_M^2 + \tilde{\sigma}_E^2 = \frac{1}{1-n} \sum_{i=1}^n \left[\ln\left(\frac{M_i}{E_i}\right) - \overline{\ln\left(\frac{M}{E}\right)} \right]^2 = 0.11 \quad (5-12)$$

$$\tilde{\sigma}_E = 0.20$$

$$\tilde{\sigma}_M = 0.28$$

$$\delta = \exp\left(\overline{\ln\left(\frac{M}{E}\right)} + \frac{\tilde{\sigma}_M^2}{2} - \frac{\tilde{\sigma}_E^2}{2}\right) = 0.62 \quad (5-13)$$

Opening Sensitivity Cases

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|-----------|----------|--------------|-------------------|---------------|------------------------------------|--------------------|
| ARCH_1101 | 200 | 0.61 | 1.98 | 2.4 | 937.56 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 2.7 | 804.3 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 3 | 530.41 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 3.3 | 327 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 3.6 | 228.87 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 3.9 | 164.39 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 4.2 | 128.92 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 4.5 | 103.83 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 4.8 | 89.37 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 5.1 | 79.014 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 5.4 | 70.186 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 5.7 | 63.806 | 6 |
| ARCH_1101 | 200 | 0.61 | 1.98 | 6 | 57.845 | 6 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 2.4 | 938.78 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 2.7 | 797.27 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 3 | 538.71 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 3.3 | 306.25 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 3.6 | 219.26 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 3.9 | 172.2 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 4.2 | 143.44 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 4.5 | 117.38 | 10 |

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|-------------|-----------------|---------------------|--------------------------|----------------------|---|---------------------------|
| ARCH_1104 | 200 | 0.61 | 1.98 | 4.8 | 103.22 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 5.1 | 91.39 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 5.4 | 78.053 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 5.7 | 69.999 | 10 |
| ARCH_1104 | 200 | 0.61 | 1.98 | 6 | 66.112 | 10 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 2.4 | 936.64 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 2.7 | 809.41 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 3 | 558.92 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 3.3 | 338.16 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 3.6 | 250.38 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 3.9 | 186.33 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 4.2 | 148.42 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 4.5 | 124.24 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 4.8 | 107.65 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 5.1 | 93.37 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 5.4 | 80.35 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 5.7 | 69.691 | 14 |
| ARCH_1107 | 200 | 0.61 | 1.98 | 6 | 60.263 | 14 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 2.4 | 864.32 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 2.7 | 811.89 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 3 | 712.42 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 3.3 | 619.63 | 7 |

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|-------------|-----------------|---------------------|--------------------------|----------------------|---|---------------------------|
| ARCH_1110 | 600 | 0.91 | 1.98 | 3.6 | 537.1 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 3.9 | 410.59 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 4.2 | 313.78 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 4.5 | 239.77 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 4.8 | 192.91 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 5.1 | 170.72 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 5.4 | 149.15 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 5.7 | 135.01 | 7 |
| ARCH_1110 | 600 | 0.91 | 1.98 | 6 | 121.85 | 7 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 2.4 | 935.11 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 2.7 | 879.75 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 3 | 808.18 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 3.3 | 684.08 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 3.6 | 597.73 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 3.9 | 456.27 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 4.2 | 367.47 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 4.5 | 297.95 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 4.8 | 245.22 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 5.1 | 199.07 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 5.4 | 168.48 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 5.7 | 146.04 | 10 |
| ARCH_1113 | 600 | 0.91 | 1.98 | 6 | 128.03 | 10 |

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|-------------|-----------------|---------------------|--------------------------|----------------------|---|---------------------------|
| ARCH_1116 | 600 | 0.91 | 1.98 | 2.4 | 938.2 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 2.7 | 893.53 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 3 | 792.6 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 3.3 | 662.2 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 3.6 | 551 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 3.9 | 440.94 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 4.2 | 332.47 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 4.5 | 261.76 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 4.8 | 232.45 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 5.1 | 190.96 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 5.4 | 158.47 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 5.7 | 141.04 | 12 |
| ARCH_1116 | 600 | 0.91 | 1.98 | 6 | 123.93 | 12 |
| OBST_1100 | 200 | 0.61 | 1.98 | 2.4 | 901.43 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 2.7 | 602.1 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 3 | 389.92 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 3.3 | 270.13 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 3.6 | 216.79 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 3.9 | 177.04 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 4.2 | 151.64 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 4.5 | 127.06 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 4.8 | 109.56 | 6 |

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|-----------|----------|--------------|-------------------|---------------|------------------------------------|--------------------|
| OBST_1100 | 200 | 0.61 | 1.98 | 5.1 | 96.42 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 5.4 | 85.68 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 5.7 | 76.722 | 6 |
| OBST_1100 | 200 | 0.61 | 1.98 | 6 | 69.612 | 6 |
| OBST_1103 | 200 | 0.61 | 1.98 | 2.4 | 965.45 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 2.7 | 768.83 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 3 | 559.68 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 3.3 | 391 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 3.6 | 297.69 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 3.9 | 228.19 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 4.2 | 187.49 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 4.5 | 152.8 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 4.8 | 133.98 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 5.1 | 115.76 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 5.4 | 98.46 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 5.7 | 85.02 | 10 |
| OBST_1103 | 200 | 0.61 | 1.98 | 6 | 75.158 | 10 |
| OBST_1106 | 200 | 0.61 | 1.98 | 2.4 | 918.35 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 2.7 | 728.72 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 3 | 533.61 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 3.3 | 370.73 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 3.6 | 286.68 | 14 |

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|-------------|-----------------|---------------------|--------------------------|----------------------|---|---------------------------|
| OBST_1106 | 200 | 0.61 | 1.98 | 3.9 | 217.32 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 4.2 | 172.61 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 4.5 | 136.16 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 4.8 | 111.35 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 5.1 | 95.45 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 5.4 | 82.94 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 5.7 | 73.083 | 14 |
| OBST_1106 | 200 | 0.61 | 1.98 | 6 | 67.295 | 14 |
| OBST_1109 | 600 | 0.91 | 1.98 | 2.4 | 854.62 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 2.7 | 849.81 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 3 | 785.25 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 3.3 | 695.57 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 3.6 | 592.45 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 3.9 | 473.33 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 4.2 | 390.05 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 4.5 | 318.33 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 4.8 | 274 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 5.1 | 239.74 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 5.4 | 204.37 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 5.7 | 175.5 | 7 |
| OBST_1109 | 600 | 0.91 | 1.98 | 6 | 151.72 | 7 |
| OBST_1112 | 600 | 0.91 | 1.98 | 2.4 | 923.28 | 10 |

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|-------------|-----------------|---------------------|--------------------------|----------------------|---|---------------------------|
| OBST_1112 | 600 | 0.91 | 1.98 | 2.7 | 915.92 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 3 | 864.74 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 3.3 | 774.66 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 3.6 | 662.67 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 3.9 | 565.45 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 4.2 | 481.41 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 4.5 | 382.74 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 4.8 | 316 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 5.1 | 262.73 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 5.4 | 216.83 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 5.7 | 183.67 | 10 |
| OBST_1112 | 600 | 0.91 | 1.98 | 6 | 160.17 | 10 |
| OBST_1115 | 600 | 0.91 | 1.98 | 2.4 | 951.08 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 2.7 | 897.98 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 3 | 892.86 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 3.3 | 794.16 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 3.6 | 690.03 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 3.9 | 577.49 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 4.2 | 458.86 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 4.5 | 368.8 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 4.8 | 307.16 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 5.1 | 253.02 | 12 |

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|----------------|-----------------|---------------------|--------------------------|----------------------|---|---------------------------|
| OBST_1115 | 600 | 0.91 | 1.98 | 5.4 | 212.6 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 5.7 | 177.64 | 12 |
| OBST_1115 | 600 | 0.91 | 1.98 | 6 | 157.52 | 12 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 2.4 | 948.99 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 2.7 | 824.5 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 3 | 625.36 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 3.3 | 381.42 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 3.6 | 255.08 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 3.9 | 178.07 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 4.2 | 135.23 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 4.5 | 106.91 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 4.8 | 90.78 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 5.1 | 78.946 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 5.4 | 70.587 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 5.7 | 60.087 | 6 |
| THREEWALL_1102 | 200 | 0.61 | 1.98 | 6 | 53.403 | 6 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 2.4 | 955.95 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 2.7 | 780.37 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 3 | 569.42 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 3.3 | 358.73 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 3.6 | 252.27 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 3.9 | 177.91 | 10 |

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|----------------|-----------------|---------------------|--------------------------|----------------------|---|---------------------------|
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 4.2 | 136.88 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 4.5 | 113.62 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 4.8 | 94.94 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 5.1 | 81.84 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 5.4 | 71.209 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 5.7 | 63.762 | 10 |
| THREEWALL_1105 | 200 | 0.61 | 1.98 | 6 | 57.409 | 10 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 2.4 | 928.8 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 2.7 | 751.6 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 3 | 583.09 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 3.3 | 395.52 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 3.6 | 280.94 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 3.9 | 203.94 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 4.2 | 160.04 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 4.5 | 128.85 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 4.8 | 112.91 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 5.1 | 97.66 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 5.4 | 85.96 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 5.7 | 71.963 | 14 |
| THREEWALL_1108 | 200 | 0.61 | 1.98 | 6 | 64.651 | 14 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 2.4 | 792.68 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 2.7 | 782.33 | 7 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|----------------|----------|--------------|-------------------|---------------|------------------------------------|--------------------|
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 3 | 806.99 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 3.3 | 686.87 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 3.6 | 597.97 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 3.9 | 461.87 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 4.2 | 344.28 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 4.5 | 260.38 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 4.8 | 221.84 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 5.1 | 188.45 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 5.4 | 164.6 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 5.7 | 144.27 | 7 |
| THREEWALL_1111 | 600 | 0.91 | 1.98 | 6 | 129.47 | 7 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 2.4 | 911.41 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 2.7 | 869.36 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 3 | 834.75 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 3.3 | 702.84 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 3.6 | 591.34 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 3.9 | 464.06 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 4.2 | 370.37 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 4.5 | 300.22 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 4.8 | 243.72 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 5.1 | 206.52 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 5.4 | 172.52 | 10 |

Table E-4
Opening Sensitivity Results

| Test | HRR (kW) | Diameter (m) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Opening Percentage |
|----------------|-----------------|---------------------|--------------------------|----------------------|---|---------------------------|
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 5.7 | 151.32 | 10 |
| THREEWALL_1114 | 600 | 0.91 | 1.98 | 6 | 136.66 | 10 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 2.4 | 905 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 2.7 | 892.38 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 3 | 865.65 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 3.3 | 722.89 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 3.6 | 603.73 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 3.9 | 511.39 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 4.2 | 406.63 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 4.5 | 321.86 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 4.8 | 259.92 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 5.1 | 212.13 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 5.4 | 179.44 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 5.7 | 154.98 | 12 |
| THREEWALL_1117 | 600 | 0.91 | 1.98 | 6 | 139.12 | 12 |

Vertical Source Sensitivity Results

Table E-5
Vertical Fire Source Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|-----------|----------|-------------------|---------------|------------------------------------|
| ARCH_1201 | 200 | 1.96 | 2.4 | 268.98 |
| ARCH_1201 | 200 | 1.96 | 2.7 | 144.1 |
| ARCH_1201 | 200 | 1.96 | 3 | 113.12 |
| ARCH_1201 | 200 | 1.96 | 3.3 | 96.37 |
| ARCH_1201 | 200 | 1.96 | 3.6 | 78.483 |
| ARCH_1201 | 200 | 1.96 | 3.9 | 71.331 |
| ARCH_1201 | 200 | 1.96 | 4.2 | 65.5 |
| ARCH_1201 | 200 | 1.96 | 4.5 | 53.038 |
| ARCH_1201 | 200 | 1.96 | 4.8 | 46.024 |
| ARCH_1201 | 200 | 1.96 | 5.1 | 42.5 |
| ARCH_1201 | 200 | 1.96 | 5.4 | 37.767 |
| ARCH_1201 | 200 | 1.96 | 5.7 | 33.437 |
| ARCH_1201 | 200 | 1.96 | 6 | 31.546 |
| ARCH_1204 | 600 | 1.96 | 2.4 | 373.37 |
| ARCH_1204 | 600 | 1.96 | 2.7 | 208.88 |
| ARCH_1204 | 600 | 1.96 | 3 | 159.73 |
| ARCH_1204 | 600 | 1.96 | 3.3 | 127.46 |
| ARCH_1204 | 600 | 1.96 | 3.6 | 111.86 |
| ARCH_1204 | 600 | 1.96 | 3.9 | 93.95 |
| ARCH_1204 | 600 | 1.96 | 4.2 | 81.8 |
| ARCH_1204 | 600 | 1.96 | 4.5 | 70.262 |
| ARCH_1204 | 600 | 1.96 | 4.8 | 61.122 |
| ARCH_1204 | 600 | 1.96 | 5.1 | 55.523 |
| ARCH_1204 | 600 | 1.96 | 5.4 | 49.187 |
| ARCH_1204 | 600 | 1.96 | 5.7 | 45.015 |
| ARCH_1204 | 600 | 1.96 | 6 | 41.931 |
| ARCH_1207 | 1000 | 1.96 | 2.4 | 548.76 |
| ARCH_1207 | 1000 | 1.96 | 2.7 | 333.12 |
| ARCH_1207 | 1000 | 1.96 | 3 | 244.24 |
| ARCH_1207 | 1000 | 1.96 | 3.3 | 193.98 |
| ARCH_1207 | 1000 | 1.96 | 3.6 | 165.92 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-5
Vertical Fire Source Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|-----------|----------|-------------------|---------------|------------------------------------|
| ARCH_1207 | 1000 | 1.96 | 3.9 | 134.32 |
| ARCH_1207 | 1000 | 1.96 | 4.2 | 116.62 |
| ARCH_1207 | 1000 | 1.96 | 4.5 | 102.34 |
| ARCH_1207 | 1000 | 1.96 | 4.8 | 93.31 |
| ARCH_1207 | 1000 | 1.96 | 5.1 | 84.96 |
| ARCH_1207 | 1000 | 1.96 | 5.4 | 76.94 |
| ARCH_1207 | 1000 | 1.96 | 5.7 | 71.158 |
| ARCH_1207 | 1000 | 1.96 | 6 | 67.532 |
| OBST_1200 | 200 | 1.96 | 2.4 | 278.25 |
| OBST_1200 | 200 | 1.96 | 2.7 | 191.68 |
| OBST_1200 | 200 | 1.96 | 3 | 137.65 |
| OBST_1200 | 200 | 1.96 | 3.3 | 116.8 |
| OBST_1200 | 200 | 1.96 | 3.6 | 106.52 |
| OBST_1200 | 200 | 1.96 | 3.9 | 103.48 |
| OBST_1200 | 200 | 1.96 | 4.2 | 96.76 |
| OBST_1200 | 200 | 1.96 | 4.5 | 93.14 |
| OBST_1200 | 200 | 1.96 | 4.8 | 85.47 |
| OBST_1200 | 200 | 1.96 | 5.1 | 82.24 |
| OBST_1200 | 200 | 1.96 | 5.4 | 77.125 |
| OBST_1200 | 200 | 1.96 | 5.7 | 68.407 |
| OBST_1200 | 200 | 1.96 | 6 | 67.908 |
| OBST_1203 | 600 | 1.96 | 2.4 | 395.28 |
| OBST_1203 | 600 | 1.96 | 2.7 | 269.3 |
| OBST_1203 | 600 | 1.96 | 3 | 200.42 |
| OBST_1203 | 600 | 1.96 | 3.3 | 168.84 |
| OBST_1203 | 600 | 1.96 | 3.6 | 162.48 |
| OBST_1203 | 600 | 1.96 | 3.9 | 152.5 |
| OBST_1203 | 600 | 1.96 | 4.2 | 142.48 |
| OBST_1203 | 600 | 1.96 | 4.5 | 132.94 |
| OBST_1203 | 600 | 1.96 | 4.8 | 124.94 |
| OBST_1203 | 600 | 1.96 | 5.1 | 118.76 |
| OBST_1203 | 600 | 1.96 | 5.4 | 112.77 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-5
Vertical Fire Source Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|----------------|----------|-------------------|---------------|------------------------------------|
| OBST_1203 | 600 | 1.96 | 5.7 | 105.93 |
| OBST_1203 | 600 | 1.96 | 6 | 99.98 |
| OBST_1206 | 1000 | 1.96 | 2.4 | 571.45 |
| OBST_1206 | 1000 | 1.96 | 2.7 | 426.7 |
| OBST_1206 | 1000 | 1.96 | 3 | 324.5 |
| OBST_1206 | 1000 | 1.96 | 3.3 | 250.95 |
| OBST_1206 | 1000 | 1.96 | 3.6 | 218.76 |
| OBST_1206 | 1000 | 1.96 | 3.9 | 203.03 |
| OBST_1206 | 1000 | 1.96 | 4.2 | 194.93 |
| OBST_1206 | 1000 | 1.96 | 4.5 | 184.31 |
| OBST_1206 | 1000 | 1.96 | 4.8 | 176.19 |
| OBST_1206 | 1000 | 1.96 | 5.1 | 167.67 |
| OBST_1206 | 1000 | 1.96 | 5.4 | 157.48 |
| OBST_1206 | 1000 | 1.96 | 5.7 | 147.61 |
| OBST_1206 | 1000 | 1.96 | 6 | 138.06 |
| THREEWALL_1202 | 200 | 1.96 | 2.4 | 389.57 |
| THREEWALL_1202 | 200 | 1.96 | 2.7 | 196.97 |
| THREEWALL_1202 | 200 | 1.96 | 3 | 166.17 |
| THREEWALL_1202 | 200 | 1.96 | 3.3 | 127.37 |
| THREEWALL_1202 | 200 | 1.96 | 3.6 | 108.9 |
| THREEWALL_1202 | 200 | 1.96 | 3.9 | 100.05 |
| THREEWALL_1202 | 200 | 1.96 | 4.2 | 87.32 |
| THREEWALL_1202 | 200 | 1.96 | 4.5 | 75.058 |
| THREEWALL_1202 | 200 | 1.96 | 4.8 | 66.517 |
| THREEWALL_1202 | 200 | 1.96 | 5.1 | 61.544 |
| THREEWALL_1202 | 200 | 1.96 | 5.4 | 61.094 |
| THREEWALL_1202 | 200 | 1.96 | 5.7 | 53.701 |
| THREEWALL_1202 | 200 | 1.96 | 6 | 49.642 |
| THREEWALL_1205 | 600 | 1.96 | 2.4 | 656.67 |
| THREEWALL_1205 | 600 | 1.96 | 2.7 | 324.79 |
| THREEWALL_1205 | 600 | 1.96 | 3 | 246.83 |
| THREEWALL_1205 | 600 | 1.96 | 3.3 | 193.16 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-5
Vertical Fire Source Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|----------------|----------|-------------------|---------------|------------------------------------|
| THREEWALL_1205 | 600 | 1.96 | 3.6 | 166.46 |
| THREEWALL_1205 | 600 | 1.96 | 3.9 | 144.38 |
| THREEWALL_1205 | 600 | 1.96 | 4.2 | 127.18 |
| THREEWALL_1205 | 600 | 1.96 | 4.5 | 114.05 |
| THREEWALL_1205 | 600 | 1.96 | 4.8 | 104.54 |
| THREEWALL_1205 | 600 | 1.96 | 5.1 | 95.21 |
| THREEWALL_1205 | 600 | 1.96 | 5.4 | 84.74 |
| THREEWALL_1205 | 600 | 1.96 | 5.7 | 78.468 |
| THREEWALL_1205 | 600 | 1.96 | 6 | 74.278 |
| THREEWALL_1208 | 1000 | 1.96 | 2.4 | 851.7 |
| THREEWALL_1208 | 1000 | 1.96 | 2.7 | 522.48 |
| THREEWALL_1208 | 1000 | 1.96 | 3 | 381.06 |
| THREEWALL_1208 | 1000 | 1.96 | 3.3 | 293.78 |
| THREEWALL_1208 | 1000 | 1.96 | 3.6 | 241 |
| THREEWALL_1208 | 1000 | 1.96 | 3.9 | 203.84 |
| THREEWALL_1208 | 1000 | 1.96 | 4.2 | 176.73 |
| THREEWALL_1208 | 1000 | 1.96 | 4.5 | 151.32 |
| THREEWALL_1208 | 1000 | 1.96 | 4.8 | 136.85 |
| THREEWALL_1208 | 1000 | 1.96 | 5.1 | 123.86 |
| THREEWALL_1208 | 1000 | 1.96 | 5.4 | 113.06 |
| THREEWALL_1208 | 1000 | 1.96 | 5.7 | 106.48 |
| THREEWALL_1208 | 1000 | 1.96 | 6 | 102.17 |

Wall Surface Source Sensitivity Results

Table E-6
Wall Surface Fire Source Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|-----------|----------|-------------------|---------------|------------------------------------|
| ARCH_1300 | 200 | N/A | 2.4 | 217.1 |
| ARCH_1300 | 200 | N/A | 2.7 | 138.23 |
| ARCH_1300 | 200 | N/A | 3 | 112.58 |
| ARCH_1300 | 200 | N/A | 3.3 | 86.48 |
| ARCH_1300 | 200 | N/A | 3.6 | 70.548 |
| ARCH_1300 | 200 | N/A | 3.9 | 59.215 |
| ARCH_1300 | 200 | N/A | 4.2 | 50.1 |
| ARCH_1300 | 200 | N/A | 4.5 | 40.591 |
| ARCH_1300 | 200 | N/A | 4.8 | 38.02 |
| ARCH_1300 | 200 | N/A | 5.1 | 32.326 |
| ARCH_1300 | 200 | N/A | 5.4 | 30.396 |
| ARCH_1300 | 200 | N/A | 5.7 | 26.979 |
| ARCH_1300 | 200 | N/A | 6 | 25.194 |
| ARCH_1301 | 600 | N/A | 2.4 | 393.79 |
| ARCH_1301 | 600 | N/A | 2.7 | 209.47 |
| ARCH_1301 | 600 | N/A | 3 | 151.92 |
| ARCH_1301 | 600 | N/A | 3.3 | 116.88 |
| ARCH_1301 | 600 | N/A | 3.6 | 103.04 |
| ARCH_1301 | 600 | N/A | 3.9 | 94.12 |
| ARCH_1301 | 600 | N/A | 4.2 | 86.7 |
| ARCH_1301 | 600 | N/A | 4.5 | 77.009 |
| ARCH_1301 | 600 | N/A | 4.8 | 69.681 |
| ARCH_1301 | 600 | N/A | 5.1 | 63.48 |
| ARCH_1301 | 600 | N/A | 5.4 | 57.863 |
| ARCH_1301 | 600 | N/A | 5.7 | 53.021 |
| ARCH_1301 | 600 | N/A | 6 | 48.236 |
| ARCH_1302 | 1000 | N/A | 2.4 | 536.82 |
| ARCH_1302 | 1000 | N/A | 2.7 | 273.11 |
| ARCH_1302 | 1000 | N/A | 3 | 195.72 |
| ARCH_1302 | 1000 | N/A | 3.3 | 151.17 |
| ARCH_1302 | 1000 | N/A | 3.6 | 130.34 |
| ARCH_1302 | 1000 | N/A | 3.9 | 119.55 |
| ARCH_1302 | 1000 | N/A | 4.2 | 109.61 |
| ARCH_1302 | 1000 | N/A | 4.5 | 99.71 |
| ARCH_1302 | 1000 | N/A | 4.8 | 92.99 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-6
Wall Surface Fire Source Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|----------------|----------|-------------------|---------------|------------------------------------|
| ARCH_1302 | 1000 | N/A | 5.1 | 86.59 |
| ARCH_1302 | 1000 | N/A | 5.4 | 79.901 |
| ARCH_1302 | 1000 | N/A | 5.7 | 74.873 |
| ARCH_1302 | 1000 | N/A | 6 | 69.845 |
| THREEWALL_1303 | 200 | N/A | 2.4 | 194.03 |
| THREEWALL_1303 | 200 | N/A | 2.7 | 111.49 |
| THREEWALL_1303 | 200 | N/A | 3 | 86.47 |
| THREEWALL_1303 | 200 | N/A | 3.3 | 72.89 |
| THREEWALL_1303 | 200 | N/A | 3.6 | 58.965 |
| THREEWALL_1303 | 200 | N/A | 3.9 | 53.597 |
| THREEWALL_1303 | 200 | N/A | 4.2 | 48.005 |
| THREEWALL_1303 | 200 | N/A | 4.5 | 41.282 |
| THREEWALL_1303 | 200 | N/A | 4.8 | 37.605 |
| THREEWALL_1303 | 200 | N/A | 5.1 | 34.67 |
| THREEWALL_1303 | 200 | N/A | 5.4 | 34.316 |
| THREEWALL_1303 | 200 | N/A | 5.7 | 29.146 |
| THREEWALL_1303 | 200 | N/A | 6 | 28.554 |
| THREEWALL_1304 | 600 | N/A | 2.4 | 351.26 |
| THREEWALL_1304 | 600 | N/A | 2.7 | 202.93 |
| THREEWALL_1304 | 600 | N/A | 3 | 160.17 |
| THREEWALL_1304 | 600 | N/A | 3.3 | 124.65 |
| THREEWALL_1304 | 600 | N/A | 3.6 | 108.96 |
| THREEWALL_1304 | 600 | N/A | 3.9 | 94.17 |
| THREEWALL_1304 | 600 | N/A | 4.2 | 86.77 |
| THREEWALL_1304 | 600 | N/A | 4.5 | 79.251 |
| THREEWALL_1304 | 600 | N/A | 4.8 | 70.232 |
| THREEWALL_1304 | 600 | N/A | 5.1 | 63.272 |
| THREEWALL_1304 | 600 | N/A | 5.4 | 56.567 |
| THREEWALL_1304 | 600 | N/A | 5.7 | 50.222 |
| THREEWALL_1304 | 600 | N/A | 6 | 48.415 |
| THREEWALL_1306 | 1000 | N/A | 2.4 | 462.11 |
| THREEWALL_1306 | 1000 | N/A | 2.7 | 283.33 |
| THREEWALL_1306 | 1000 | N/A | 3 | 229.63 |
| THREEWALL_1306 | 1000 | N/A | 3.3 | 185.73 |
| THREEWALL_1306 | 1000 | N/A | 3.6 | 159.07 |
| THREEWALL_1306 | 1000 | N/A | 3.9 | 133.87 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-6
Wall Surface Fire Source Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|----------------|----------|-------------------|---------------|------------------------------------|
| THREEWALL_1306 | 1000 | N/A | 4.2 | 119.87 |
| THREEWALL_1306 | 1000 | N/A | 4.5 | 103.54 |
| THREEWALL_1306 | 1000 | N/A | 4.8 | 94.86 |
| THREEWALL_1306 | 1000 | N/A | 5.1 | 86.99 |
| THREEWALL_1306 | 1000 | N/A | 5.4 | 80.12 |
| THREEWALL_1306 | 1000 | N/A | 5.7 | 73.768 |
| THREEWALL_1306 | 1000 | N/A | 6 | 68.647 |

Soffit Sensitivity Results

Table E-7
Soffit Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|-----------|----------|-------------------|---------------|------------------------------------|
| ARCH_1401 | 200 | 1.14 | 2.4 | 171.43 |
| ARCH_1401 | 200 | 1.14 | 2.7 | 107.11 |
| ARCH_1401 | 200 | 1.14 | 3 | 92.4 |
| ARCH_1401 | 200 | 1.14 | 3.3 | 74.129 |
| ARCH_1401 | 200 | 1.14 | 3.6 | 68.538 |
| ARCH_1401 | 200 | 1.14 | 3.9 | 53.736 |
| ARCH_1401 | 200 | 1.14 | 4.2 | 49.268 |
| ARCH_1401 | 200 | 1.14 | 4.5 | 43.278 |
| ARCH_1401 | 200 | 1.14 | 4.8 | 38.74 |
| ARCH_1401 | 200 | 1.14 | 5.1 | 35.033 |
| ARCH_1401 | 200 | 1.14 | 5.4 | 30.479 |
| ARCH_1401 | 200 | 1.14 | 5.7 | 29.695 |
| ARCH_1401 | 200 | 1.14 | 6 | 26.62 |
| ARCH_1404 | 600 | 1.14 | 2.4 | 271.05 |
| ARCH_1404 | 600 | 1.14 | 2.7 | 177.17 |
| ARCH_1404 | 600 | 1.14 | 3 | 143.77 |
| ARCH_1404 | 600 | 1.14 | 3.3 | 115.75 |
| ARCH_1404 | 600 | 1.14 | 3.6 | 102.35 |
| ARCH_1404 | 600 | 1.14 | 3.9 | 90.26 |
| ARCH_1404 | 600 | 1.14 | 4.2 | 79.924 |
| ARCH_1404 | 600 | 1.14 | 4.5 | 71.303 |
| ARCH_1404 | 600 | 1.14 | 4.8 | 66.625 |
| ARCH_1404 | 600 | 1.14 | 5.1 | 60.925 |
| ARCH_1404 | 600 | 1.14 | 5.4 | 53.258 |
| ARCH_1404 | 600 | 1.14 | 5.7 | 46.84 |
| ARCH_1404 | 600 | 1.14 | 6 | 44.228 |
| ARCH_1407 | 1000 | 1.14 | 2.4 | 411.81 |
| ARCH_1407 | 1000 | 1.14 | 2.7 | 257.94 |
| ARCH_1407 | 1000 | 1.14 | 3 | 204.41 |
| ARCH_1407 | 1000 | 1.14 | 3.3 | 171.02 |
| ARCH_1407 | 1000 | 1.14 | 3.6 | 146.92 |
| ARCH_1407 | 1000 | 1.14 | 3.9 | 124.11 |
| ARCH_1407 | 1000 | 1.14 | 4.2 | 110.35 |
| ARCH_1407 | 1000 | 1.14 | 4.5 | 95.13 |
| ARCH_1407 | 1000 | 1.14 | 4.8 | 85.1 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-7
Soffit Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|-----------|----------|-------------------|---------------|------------------------------------|
| ARCH_1407 | 1000 | 1.14 | 5.1 | 78.778 |
| ARCH_1407 | 1000 | 1.14 | 5.4 | 70.232 |
| ARCH_1407 | 1000 | 1.14 | 5.7 | 65.497 |
| ARCH_1410 | 200 | 1.98 | 2.4 | 738.18 |
| ARCH_1410 | 200 | 1.98 | 2.7 | 531.25 |
| ARCH_1410 | 200 | 1.98 | 3 | 321.95 |
| ARCH_1410 | 200 | 1.98 | 3.3 | 231.67 |
| ARCH_1410 | 200 | 1.98 | 3.6 | 200.36 |
| ARCH_1410 | 200 | 1.98 | 3.9 | 165.42 |
| ARCH_1410 | 200 | 1.98 | 4.2 | 132.76 |
| ARCH_1410 | 200 | 1.98 | 4.5 | 96.17 |
| ARCH_1410 | 200 | 1.98 | 4.8 | 86.44 |
| ARCH_1410 | 200 | 1.98 | 5.1 | 85.38 |
| ARCH_1410 | 200 | 1.98 | 5.4 | 70.331 |
| ARCH_1410 | 200 | 1.98 | 5.7 | 57.028 |
| ARCH_1410 | 200 | 1.98 | 6 | 53.461 |
| ARCH_1413 | 600 | 1.98 | 2.4 | 954.42 |
| ARCH_1413 | 600 | 1.98 | 2.7 | 789.76 |
| ARCH_1413 | 600 | 1.98 | 3 | 604.22 |
| ARCH_1413 | 600 | 1.98 | 3.3 | 423.99 |
| ARCH_1413 | 600 | 1.98 | 3.6 | 326.94 |
| ARCH_1413 | 600 | 1.98 | 3.9 | 257.85 |
| ARCH_1413 | 600 | 1.98 | 4.2 | 212.79 |
| ARCH_1413 | 600 | 1.98 | 4.5 | 172.49 |
| ARCH_1413 | 600 | 1.98 | 4.8 | 146.63 |
| ARCH_1413 | 600 | 1.98 | 5.1 | 127.04 |
| ARCH_1413 | 600 | 1.98 | 5.4 | 111.77 |
| ARCH_1413 | 600 | 1.98 | 5.7 | 99.91 |
| ARCH_1413 | 600 | 1.98 | 6 | 91.55 |
| ARCH_1416 | 1000 | 1.98 | 2.4 | 994.8 |
| ARCH_1416 | 1000 | 1.98 | 2.7 | 962.81 |
| ARCH_1416 | 1000 | 1.98 | 3 | 785.87 |
| ARCH_1416 | 1000 | 1.98 | 3.3 | 592.31 |
| ARCH_1416 | 1000 | 1.98 | 3.6 | 444.35 |
| ARCH_1416 | 1000 | 1.98 | 3.9 | 331.3 |
| ARCH_1416 | 1000 | 1.98 | 4.2 | 266.22 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-7
Soffit Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|-----------|----------|-------------------|---------------|------------------------------------|
| ARCH_1416 | 1000 | 1.98 | 4.5 | 223.96 |
| ARCH_1416 | 1000 | 1.98 | 4.8 | 197.1 |
| ARCH_1416 | 1000 | 1.98 | 5.1 | 175.42 |
| ARCH_1416 | 1000 | 1.98 | 5.4 | 151.29 |
| ARCH_1416 | 1000 | 1.98 | 5.7 | 130.44 |
| ARCH_1416 | 1000 | 1.98 | 6 | 121.45 |
| OBST_1400 | 200 | 1.14 | 2.4 | 184.04 |
| OBST_1400 | 200 | 1.14 | 2.7 | 118.62 |
| OBST_1400 | 200 | 1.14 | 3 | 91.06 |
| OBST_1400 | 200 | 1.14 | 3.3 | 85.89 |
| OBST_1400 | 200 | 1.14 | 3.6 | 79.421 |
| OBST_1400 | 200 | 1.14 | 3.9 | 72.139 |
| OBST_1400 | 200 | 1.14 | 4.2 | 71.684 |
| OBST_1400 | 200 | 1.14 | 4.5 | 62.392 |
| OBST_1400 | 200 | 1.14 | 4.8 | 58.739 |
| OBST_1400 | 200 | 1.14 | 5.1 | 60.088 |
| OBST_1400 | 200 | 1.14 | 5.4 | 50.108 |
| OBST_1400 | 200 | 1.14 | 5.7 | 47.747 |
| OBST_1400 | 200 | 1.14 | 6 | 41.442 |
| OBST_1403 | 600 | 1.14 | 2.4 | 158.1 |
| OBST_1403 | 600 | 1.14 | 2.7 | 95.82 |
| OBST_1403 | 600 | 1.14 | 3 | 80.94 |
| OBST_1403 | 600 | 1.14 | 3.3 | 75.894 |
| OBST_1403 | 600 | 1.14 | 3.6 | 72.973 |
| OBST_1403 | 600 | 1.14 | 3.9 | 68.895 |
| OBST_1403 | 600 | 1.14 | 4.2 | 65.861 |
| OBST_1403 | 600 | 1.14 | 4.5 | 60.361 |
| OBST_1403 | 600 | 1.14 | 4.8 | 55.75 |
| OBST_1403 | 600 | 1.14 | 5.1 | 52.542 |
| OBST_1403 | 600 | 1.14 | 5.4 | 49.347 |
| OBST_1403 | 600 | 1.14 | 5.7 | 46.011 |
| OBST_1403 | 600 | 1.14 | 6 | 43.146 |
| OBST_1406 | 1000 | 1.14 | 2.4 | 556.48 |
| OBST_1406 | 1000 | 1.14 | 2.7 | 305.76 |
| OBST_1406 | 1000 | 1.14 | 3 | 234.27 |
| OBST_1406 | 1000 | 1.14 | 3.3 | 209.24 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-7
Soffit Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|-----------|----------|-------------------|---------------|------------------------------------|
| OBST_1406 | 1000 | 1.14 | 3.6 | 194.4 |
| OBST_1406 | 1000 | 1.14 | 3.9 | 182.5 |
| OBST_1406 | 1000 | 1.14 | 4.2 | 173.52 |
| OBST_1406 | 1000 | 1.14 | 4.5 | 164.84 |
| OBST_1406 | 1000 | 1.14 | 4.8 | 156.91 |
| OBST_1406 | 1000 | 1.14 | 5.1 | 148.39 |
| OBST_1406 | 1000 | 1.14 | 5.4 | 138.98 |
| OBST_1406 | 1000 | 1.14 | 5.7 | 128.8 |
| OBST_1409 | 200 | 1.98 | 2.4 | 402.02 |
| OBST_1409 | 200 | 1.98 | 2.7 | 256.32 |
| OBST_1409 | 200 | 1.98 | 3 | 190.56 |
| OBST_1409 | 200 | 1.98 | 3.3 | 147.92 |
| OBST_1409 | 200 | 1.98 | 3.6 | 132.96 |
| OBST_1409 | 200 | 1.98 | 3.9 | 126.64 |
| OBST_1409 | 200 | 1.98 | 4.2 | 114.66 |
| OBST_1409 | 200 | 1.98 | 4.5 | 109.51 |
| OBST_1409 | 200 | 1.98 | 4.8 | 96.45 |
| OBST_1409 | 200 | 1.98 | 5.1 | 86.48 |
| OBST_1409 | 200 | 1.98 | 5.4 | 80.21 |
| OBST_1409 | 200 | 1.98 | 5.7 | 76.865 |
| OBST_1409 | 200 | 1.98 | 6 | 58.705 |
| OBST_1412 | 600 | 1.98 | 2.4 | 370.99 |
| OBST_1412 | 600 | 1.98 | 2.7 | 223.24 |
| OBST_1412 | 600 | 1.98 | 3 | 176.23 |
| OBST_1412 | 600 | 1.98 | 3.3 | 147.97 |
| OBST_1412 | 600 | 1.98 | 3.6 | 143.57 |
| OBST_1412 | 600 | 1.98 | 3.9 | 135.99 |
| OBST_1412 | 600 | 1.98 | 4.2 | 125.67 |
| OBST_1412 | 600 | 1.98 | 4.5 | 113.93 |
| OBST_1412 | 600 | 1.98 | 4.8 | 104.76 |
| OBST_1412 | 600 | 1.98 | 5.1 | 97.8 |
| OBST_1412 | 600 | 1.98 | 5.4 | 88.74 |
| OBST_1412 | 600 | 1.98 | 5.7 | 77.893 |
| OBST_1412 | 600 | 1.98 | 6 | 69.543 |
| OBST_1415 | 1000 | 1.98 | 2.4 | 905.23 |
| OBST_1415 | 1000 | 1.98 | 2.7 | 642.45 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-7
Soffit Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|----------------|----------|-------------------|---------------|------------------------------------|
| OBST_1415 | 1000 | 1.98 | 3 | 470.26 |
| OBST_1415 | 1000 | 1.98 | 3.3 | 424.23 |
| OBST_1415 | 1000 | 1.98 | 3.6 | 397.15 |
| OBST_1415 | 1000 | 1.98 | 3.9 | 357.09 |
| OBST_1415 | 1000 | 1.98 | 4.2 | 327.61 |
| OBST_1415 | 1000 | 1.98 | 4.5 | 301.04 |
| OBST_1415 | 1000 | 1.98 | 4.8 | 275.26 |
| OBST_1415 | 1000 | 1.98 | 5.1 | 249.89 |
| OBST_1415 | 1000 | 1.98 | 5.4 | 222.05 |
| OBST_1415 | 1000 | 1.98 | 5.7 | 192.79 |
| OBST_1415 | 1000 | 1.98 | 6 | 169.22 |
| THREEWALL_1402 | 200 | 1.14 | 2.4 | 193.98 |
| THREEWALL_1402 | 200 | 1.14 | 2.7 | 145.26 |
| THREEWALL_1402 | 200 | 1.14 | 3 | 125.38 |
| THREEWALL_1402 | 200 | 1.14 | 3.3 | 101.96 |
| THREEWALL_1402 | 200 | 1.14 | 3.6 | 84.66 |
| THREEWALL_1402 | 200 | 1.14 | 3.9 | 72.809 |
| THREEWALL_1402 | 200 | 1.14 | 4.2 | 60.607 |
| THREEWALL_1402 | 200 | 1.14 | 4.5 | 54.012 |
| THREEWALL_1402 | 200 | 1.14 | 4.8 | 51.346 |
| THREEWALL_1402 | 200 | 1.14 | 5.1 | 41.729 |
| THREEWALL_1402 | 200 | 1.14 | 5.4 | 36.629 |
| THREEWALL_1402 | 200 | 1.14 | 5.7 | 35.579 |
| THREEWALL_1402 | 200 | 1.14 | 6 | 32.219 |
| THREEWALL_1405 | 600 | 1.14 | 2.4 | 476.72 |
| THREEWALL_1405 | 600 | 1.14 | 2.7 | 316.14 |
| THREEWALL_1405 | 600 | 1.14 | 3 | 233.69 |
| THREEWALL_1405 | 600 | 1.14 | 3.3 | 189.15 |
| THREEWALL_1405 | 600 | 1.14 | 3.6 | 163.93 |
| THREEWALL_1405 | 600 | 1.14 | 3.9 | 138.63 |
| THREEWALL_1405 | 600 | 1.14 | 4.2 | 121.14 |
| THREEWALL_1405 | 600 | 1.14 | 4.5 | 105.84 |
| THREEWALL_1405 | 600 | 1.14 | 4.8 | 94.26 |
| THREEWALL_1405 | 600 | 1.14 | 5.1 | 87.32 |
| THREEWALL_1405 | 600 | 1.14 | 5.4 | 80.06 |
| THREEWALL_1405 | 600 | 1.14 | 5.7 | 72.691 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-7
Soffit Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|----------------|----------|-------------------|---------------|------------------------------------|
| THREEWALL_1405 | 600 | 1.14 | 6 | 67.461 |
| THREEWALL_1408 | 1000 | 1.14 | 2.4 | 625.88 |
| THREEWALL_1408 | 1000 | 1.14 | 3 | 379.77 |
| THREEWALL_1408 | 1000 | 1.14 | 3.3 | 307.8 |
| THREEWALL_1408 | 1000 | 1.14 | 3.6 | 254.14 |
| THREEWALL_1408 | 1000 | 1.14 | 3.9 | 206.26 |
| THREEWALL_1408 | 1000 | 1.14 | 4.2 | 177.04 |
| THREEWALL_1408 | 1000 | 1.14 | 4.5 | 147.71 |
| THREEWALL_1408 | 1000 | 1.14 | 4.8 | 132.24 |
| THREEWALL_1408 | 1000 | 1.14 | 5.1 | 115.84 |
| THREEWALL_1408 | 1000 | 1.14 | 5.4 | 102.15 |
| THREEWALL_1408 | 1000 | 1.14 | 5.7 | 95.34 |
| THREEWALL_1408 | 1000 | 1.14 | 6 | 91.38 |
| THREEWALL_1411 | 200 | 1.98 | 2.4 | 878.98 |
| THREEWALL_1411 | 200 | 1.98 | 2.7 | 769.44 |
| THREEWALL_1411 | 200 | 1.98 | 3 | 459.87 |
| THREEWALL_1411 | 200 | 1.98 | 3.3 | 320.98 |
| THREEWALL_1411 | 200 | 1.98 | 3.6 | 277.11 |
| THREEWALL_1411 | 200 | 1.98 | 3.9 | 225.03 |
| THREEWALL_1411 | 200 | 1.98 | 4.2 | 158.3 |
| THREEWALL_1411 | 200 | 1.98 | 4.5 | 136.72 |
| THREEWALL_1411 | 200 | 1.98 | 4.8 | 105.45 |
| THREEWALL_1411 | 200 | 1.98 | 5.1 | 91.15 |
| THREEWALL_1411 | 200 | 1.98 | 5.4 | 89.57 |
| THREEWALL_1411 | 200 | 1.98 | 5.7 | 67.042 |
| THREEWALL_1411 | 200 | 1.98 | 6 | 65.321 |
| THREEWALL_1414 | 600 | 1.98 | 2.4 | 1004.1 |
| THREEWALL_1414 | 600 | 1.98 | 2.7 | 1018.4 |
| THREEWALL_1414 | 600 | 1.98 | 3 | 889.06 |
| THREEWALL_1414 | 600 | 1.98 | 3.3 | 677.2 |
| THREEWALL_1414 | 600 | 1.98 | 3.6 | 549.32 |
| THREEWALL_1414 | 600 | 1.98 | 3.9 | 393.67 |
| THREEWALL_1414 | 600 | 1.98 | 4.2 | 311.25 |
| THREEWALL_1414 | 600 | 1.98 | 4.5 | 250.77 |
| THREEWALL_1414 | 600 | 1.98 | 4.8 | 208.71 |
| THREEWALL_1414 | 600 | 1.98 | 5.1 | 176.82 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-7
Soffit Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) |
|----------------|----------|-------------------|---------------|------------------------------------|
| THREEWALL_1414 | 600 | 1.98 | 5.4 | 151.71 |
| THREEWALL_1414 | 600 | 1.98 | 5.7 | 129 |
| THREEWALL_1414 | 600 | 1.98 | 6 | 117.24 |
| THREEWALL_1417 | 1000 | 1.98 | 2.4 | 985.6 |
| THREEWALL_1417 | 1000 | 1.98 | 3 | 1016.6 |
| THREEWALL_1417 | 1000 | 1.98 | 3.3 | 878.92 |
| THREEWALL_1417 | 1000 | 1.98 | 3.6 | 749.52 |
| THREEWALL_1417 | 1000 | 1.98 | 3.9 | 564.62 |
| THREEWALL_1417 | 1000 | 1.98 | 4.2 | 441.37 |
| THREEWALL_1417 | 1000 | 1.98 | 4.5 | 331.07 |
| THREEWALL_1417 | 1000 | 1.98 | 4.8 | 264.23 |
| THREEWALL_1417 | 1000 | 1.98 | 5.1 | 231.36 |
| THREEWALL_1417 | 1000 | 1.98 | 5.4 | 198.27 |
| THREEWALL_1417 | 1000 | 1.98 | 5.7 | 175.81 |
| THREEWALL_1417 | 1000 | 1.98 | 6 | 160.01 |

Thickness of Steel Enclosure Sensitivity Results

| Table E-8 Thickness of Steel Enclosure Sensitivity Results | | | | | |
|---|-------------|--|-------------------------------|---------------------------------------|------------------|
| Test | HRR (kW) | Thickness of Steel Source Height (m) | Enclosure Elevation (m) | Maximum Plume Temperature Rise (C) | Thickness (m) |
| ARCH_1501 | 200 | 1.14 | 2.4 | 250.82 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 2.7 | 122.91 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 3 | 91.45 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 3.3 | 73.979 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 3.6 | 65.335 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 3.9 | 57.142 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 4.2 | 51.134 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 4.5 | 44.485 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 4.8 | 40.524 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 5.1 | 35.815 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 5.4 | 30.292 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 5.7 | 26.372 | 0.001 |
| ARCH_1501 | 200 | 1.14 | 6 | 23.782 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 2.4 | 435.35 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 2.7 | 224.49 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 3 | 170.42 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 3.3 | 138.38 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 3.6 | 118.28 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 3.9 | 101.34 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 4.2 | 88.47 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 4.5 | 77.319 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 4.8 | 70.064 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 5.1 | 63.279 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 5.4 | 55.88 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 5.7 | 49.069 | 0.001 |
| ARCH_1504 | 600 | 1.14 | 6 | 46.318 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 2.4 | 492.48 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 2.7 | 277.71 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 3 | 204.56 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 3.3 | 167.04 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 3.6 | 141.3 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 3.9 | 122.79 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 4.2 | 108.05 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 4.5 | 96.97 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 4.8 | 87.07 | 0.001 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-8 Thickness of Steel Enclosure Sensitivity Results | | | | | |
|---|-------------|----------------------|------------------|---------------------------------------|------------------|
| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Thickness (m) |
| ARCH_1507 | 1000 | 1.14 | 5.1 | 80.05 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 5.4 | 72.417 | 0.001 |
| ARCH_1507 | 1000 | 1.14 | 5.7 | 66.252 | 0.001 |
| OBST_1500 | 200 | 1.14 | 2.4 | 221.43 | 0.001 |
| OBST_1500 | 200 | 1.14 | 2.7 | 142.99 | 0.001 |
| OBST_1500 | 200 | 1.14 | 3 | 111.06 | 0.001 |
| OBST_1500 | 200 | 1.14 | 3.3 | 96.39 | 0.001 |
| OBST_1500 | 200 | 1.14 | 3.6 | 91.29 | 0.001 |
| OBST_1500 | 200 | 1.14 | 3.9 | 86.53 | 0.001 |
| OBST_1500 | 200 | 1.14 | 4.2 | 82.34 | 0.001 |
| OBST_1500 | 200 | 1.14 | 4.5 | 76.998 | 0.001 |
| OBST_1500 | 200 | 1.14 | 4.8 | 72.526 | 0.001 |
| OBST_1500 | 200 | 1.14 | 5.1 | 68.481 | 0.001 |
| OBST_1500 | 200 | 1.14 | 5.4 | 63.629 | 0.001 |
| OBST_1500 | 200 | 1.14 | 5.7 | 59.183 | 0.001 |
| OBST_1500 | 200 | 1.14 | 6 | 55.542 | 0.001 |
| OBST_1503 | 600 | 1.14 | 2.4 | 527.39 | 0.001 |
| OBST_1503 | 600 | 1.14 | 2.7 | 357.75 | 0.001 |
| OBST_1503 | 600 | 1.14 | 3 | 259.18 | 0.001 |
| OBST_1503 | 600 | 1.14 | 3.3 | 207.71 | 0.001 |
| OBST_1503 | 600 | 1.14 | 3.6 | 192.77 | 0.001 |
| OBST_1503 | 600 | 1.14 | 3.9 | 185.88 | 0.001 |
| OBST_1503 | 600 | 1.14 | 4.2 | 178.84 | 0.001 |
| OBST_1503 | 600 | 1.14 | 4.5 | 167.41 | 0.001 |
| OBST_1503 | 600 | 1.14 | 4.8 | 156.9 | 0.001 |
| OBST_1503 | 600 | 1.14 | 5.1 | 147.64 | 0.001 |
| OBST_1503 | 600 | 1.14 | 5.4 | 136.39 | 0.001 |
| OBST_1503 | 600 | 1.14 | 5.7 | 127.67 | 0.001 |
| OBST_1503 | 600 | 1.14 | 6 | 119.2 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 2.4 | 644.94 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 2.7 | 476.7 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 3 | 361.87 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 3.3 | 282.67 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 3.6 | 247.17 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 3.9 | 232.76 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 4.2 | 222.02 | 0.001 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-8 Thickness of Steel Enclosure Sensitivity Results | | | | | |
|---|-------------|----------------------|------------------|---------------------------------------|------------------|
| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Thickness (m) |
| OBST_1506 | 1000 | 1.14 | 4.5 | 209.18 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 4.8 | 200.17 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 5.1 | 189.85 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 5.4 | 178.66 | 0.001 |
| OBST_1506 | 1000 | 1.14 | 5.7 | 168.58 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 2.4 | 303.37 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 2.7 | 165.48 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 3 | 121.14 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 3.3 | 98 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 3.6 | 88.09 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 3.9 | 79.77 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 4.2 | 72.972 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 4.5 | 64.726 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 4.8 | 59.19 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 5.1 | 54.454 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 5.4 | 47.665 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 5.7 | 42.54 | 0.001 |
| THREEWALL_1502 | 200 | 1.14 | 6 | 39.323 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 2.4 | 623.89 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 2.7 | 350.4 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 3 | 267.62 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 3.3 | 212.45 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 3.6 | 185.57 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 3.9 | 155.18 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 4.2 | 131.07 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 4.5 | 113.77 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 4.8 | 100.05 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 5.1 | 86.74 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 5.4 | 75.044 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 5.7 | 67.165 | 0.001 |
| THREEWALL_1505 | 600 | 1.14 | 6 | 63.244 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 2.4 | 715.92 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 2.7 | 476.43 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 3 | 360.41 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 3.3 | 278.18 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 3.6 | 231.1 | 0.001 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-8 Thickness of Steel Enclosure Sensitivity Results | | | | | |
|---|-------------|----------------------|------------------|---------------------------------------|------------------|
| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Thickness (m) |
| THREEWALL_1508 | 1000 | 1.14 | 3.9 | 195.64 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 4.2 | 166.35 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 4.5 | 147.25 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 4.8 | 134.56 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 5.1 | 123.22 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 5.4 | 110.95 | 0.001 |
| THREEWALL_1508 | 1000 | 1.14 | 5.7 | 104.12 | 0.001 |
| THREEWALL_1511 | 200 | 1.14 | 2.4 | 304.79 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 2.7 | 160.73 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 3 | 119.09 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 3.3 | 97.25 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 3.6 | 85.38 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 3.9 | 74.484 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 4.2 | 66.641 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 4.5 | 60.376 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 4.8 | 52.668 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 5.1 | 47.908 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 5.4 | 43.55 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 5.7 | 39.752 | 0.01 |
| THREEWALL_1511 | 200 | 1.14 | 6 | 35.703 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 2.4 | 595.67 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 2.7 | 324.91 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 3 | 240.21 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 3.3 | 187.97 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 3.6 | 163.55 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 3.9 | 139.83 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 4.2 | 120.71 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 4.5 | 104.05 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 4.8 | 92.7 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 5.1 | 85.08 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 5.4 | 76.946 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 5.7 | 70.893 | 0.01 |
| THREEWALL_1514 | 600 | 1.14 | 6 | 67.715 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 2.4 | 701.19 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 2.7 | 470.49 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 3 | 346.27 | 0.01 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-8 Thickness of Steel Enclosure Sensitivity Results | | | | | |
|---|-------------|----------------------|------------------|---------------------------------------|------------------|
| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Thickness (m) |
| THREEWALL_1517 | 1000 | 1.14 | 3.3 | 262.03 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 3.6 | 220.57 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 3.9 | 185.24 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 4.2 | 163.31 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 4.5 | 140.66 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 4.8 | 125.6 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 5.1 | 116.23 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 5.4 | 104.95 | 0.01 |
| THREEWALL_1517 | 1000 | 1.14 | 5.7 | 93.75 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 2.4 | 228.86 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 2.7 | 116.86 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 3 | 86.34 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 3.3 | 69.641 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 3.6 | 61.122 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 3.9 | 52.889 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 4.2 | 46.881 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 4.5 | 41.449 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 4.8 | 37.267 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 5.1 | 33.707 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 5.4 | 30.218 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 5.7 | 26.702 | 0.01 |
| ARCH_1510 | 200 | 1.14 | 6 | 24.662 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 2.4 | 377.92 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 2.7 | 209.24 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 3 | 155.21 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 3.3 | 124.19 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 3.6 | 107.66 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 3.9 | 95.51 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 4.2 | 85.55 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 4.5 | 74.663 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 4.8 | 67.36 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 5.1 | 60.475 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 5.4 | 53.375 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 5.7 | 48.259 | 0.01 |
| ARCH_1513 | 600 | 1.14 | 6 | 43.989 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 2.4 | 474.54 | 0.01 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-8 Thickness of Steel Enclosure Sensitivity Results | | | | | |
|---|-------------|----------------------|------------------|---------------------------------------|------------------|
| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Thickness (m) |
| ARCH_1516 | 1000 | 1.14 | 2.7 | 274.81 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 3 | 198.87 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 3.3 | 153.78 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 3.6 | 132.35 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 3.9 | 112.46 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 4.2 | 100.01 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 4.5 | 89.47 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 4.8 | 78.582 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 5.1 | 73.207 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 5.4 | 65.564 | 0.01 |
| ARCH_1516 | 1000 | 1.14 | 5.7 | 61.595 | 0.01 |
| OBST_1509 | 200 | 1.14 | 2.4 | 220.64 | 0.01 |
| OBST_1509 | 200 | 1.14 | 2.7 | 143.53 | 0.01 |
| OBST_1509 | 200 | 1.14 | 3 | 108.73 | 0.01 |
| OBST_1509 | 200 | 1.14 | 3.3 | 93.59 | 0.01 |
| OBST_1509 | 200 | 1.14 | 3.6 | 87.24 | 0.01 |
| OBST_1509 | 200 | 1.14 | 3.9 | 81.81 | 0.01 |
| OBST_1509 | 200 | 1.14 | 4.2 | 77.448 | 0.01 |
| OBST_1509 | 200 | 1.14 | 4.5 | 71.911 | 0.01 |
| OBST_1509 | 200 | 1.14 | 4.8 | 66.742 | 0.01 |
| OBST_1509 | 200 | 1.14 | 5.1 | 61.984 | 0.01 |
| OBST_1509 | 200 | 1.14 | 5.4 | 56.47 | 0.01 |
| OBST_1509 | 200 | 1.14 | 5.7 | 52.427 | 0.01 |
| OBST_1509 | 200 | 1.14 | 6 | 48.606 | 0.01 |
| OBST_1512 | 600 | 1.14 | 2.4 | 500.81 | 0.01 |
| OBST_1512 | 600 | 1.14 | 2.7 | 344.7 | 0.01 |
| OBST_1512 | 600 | 1.14 | 3 | 248.73 | 0.01 |
| OBST_1512 | 600 | 1.14 | 3.3 | 212.99 | 0.01 |
| OBST_1512 | 600 | 1.14 | 3.6 | 191.17 | 0.01 |
| OBST_1512 | 600 | 1.14 | 3.9 | 177.62 | 0.01 |
| OBST_1512 | 600 | 1.14 | 4.2 | 171.53 | 0.01 |
| OBST_1512 | 600 | 1.14 | 4.5 | 162.67 | 0.01 |
| OBST_1512 | 600 | 1.14 | 4.8 | 155.08 | 0.01 |
| OBST_1512 | 600 | 1.14 | 5.1 | 147.56 | 0.01 |
| OBST_1512 | 600 | 1.14 | 5.4 | 136.28 | 0.01 |
| OBST_1512 | 600 | 1.14 | 5.7 | 124.2 | 0.01 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

| Table E-8 | | | | | |
|-------------------------------|----------|--------------------------------------|---------------|------------------------------------|---------------|
| Enclosure Sensitivity Results | | | | | |
| Test | HRR (kW) | Thickness of Steel Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Thickness (m) |
| OBST_1512 | 600 | 1.14 | 6 | 114.51 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 2.4 | 639.31 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 2.7 | 488.85 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 3 | 345.77 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 3.3 | 278.41 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 3.6 | 247.68 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 3.9 | 238.16 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 4.2 | 226.04 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 4.5 | 211.45 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 4.8 | 201.03 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 5.1 | 190.12 | 0.01 |
| OBST_1515 | 1000 | 1.14 | 5.4 | 178.62 | 0.01 |

Horizontal Plume Shift and Angle Sensitivity Results

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|-----------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| ARCH_1055 | 1000 | 1.14 | 2.4 | 686.62 | 0.91 | 0.7 | 2.40 | 1.88 | 13 |
| ARCH_1055 | 1000 | 1.14 | 2.7 | 439.45 | 0.91 | 0.9 | 2.40 | 1.88 | 18 |
| ARCH_1055 | 1000 | 1.14 | 3 | 317.19 | 0.91 | 1.02 | 2.40 | 1.88 | 18 |
| ARCH_1055 | 1000 | 1.14 | 3.3 | 251.35 | 0.91 | 1.1 | 2.40 | 1.88 | 18 |
| ARCH_1055 | 1000 | 1.14 | 3.6 | 207.5 | 0.91 | 1.22 | 2.40 | 1.88 | 18 |
| ARCH_1055 | 1000 | 1.14 | 3.9 | 181.32 | 0.91 | 1.26 | 2.40 | 1.88 | 17 |
| ARCH_1055 | 1000 | 1.14 | 4.2 | 158.36 | 0.91 | 1.3 | 2.40 | 1.88 | 16 |
| ARCH_1055 | 1000 | 1.14 | 4.5 | 139.08 | 0.91 | 1.34 | 2.40 | 1.88 | 16 |
| ARCH_1055 | 1000 | 1.14 | 4.8 | 123.06 | 0.91 | 1.38 | 2.40 | 1.88 | 15 |
| ARCH_1056 | 1000 | 1.98 | 3.3 | 724.08 | 0.91 | 0.42 | 2.40 | 1.88 | 1 |
| ARCH_1056 | 1000 | 1.98 | 3.6 | 603.99 | 0.91 | 0.42 | 2.40 | 1.88 | 1 |
| ARCH_1064 | 1000 | 1.14 | 2.4 | 498.48 | 1.22 | 0.9 | 2.53 | 2.01 | 16 |
| ARCH_1064 | 1000 | 1.14 | 2.7 | 290.87 | 1.22 | 1.1 | 2.53 | 2.01 | 20 |
| ARCH_1064 | 1000 | 1.14 | 3 | 228.02 | 1.22 | 1.22 | 2.53 | 2.01 | 20 |
| ARCH_1064 | 1000 | 1.14 | 3.3 | 180.07 | 1.22 | 1.38 | 2.53 | 2.01 | 21 |
| ARCH_1064 | 1000 | 1.14 | 3.6 | 153.69 | 1.22 | 1.46 | 2.53 | 2.01 | 21 |
| ARCH_1064 | 1000 | 1.14 | 3.9 | 132.29 | 1.22 | 1.54 | 2.53 | 2.01 | 20 |
| ARCH_1064 | 1000 | 1.14 | 4.2 | 119.64 | 1.22 | 1.62 | 2.53 | 2.01 | 19 |
| ARCH_1065 | 1000 | 1.98 | 3 | 697.19 | 1.22 | 0.62 | 2.53 | 2.01 | 4 |
| ARCH_1065 | 1000 | 1.98 | 3.3 | 539.48 | 1.22 | 0.62 | 2.53 | 2.01 | 3 |
| ARCH_1065 | 1000 | 1.98 | 3.6 | 429.2 | 1.22 | 0.58 | 2.53 | 2.01 | 1 |
| ARCH_1065 | 1000 | 1.98 | 3.9 | 322.39 | 1.22 | 0.58 | 2.53 | 2.01 | 1 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{Po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|----------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| ARCH_830 | 100 | 1.14 | 2.4 | 198.07 | 0.30 | 0.34 | 0.77 | 0.60 | 9 |
| ARCH_830 | 100 | 1.14 | 2.7 | 112.16 | 0.30 | 0.5 | 0.77 | 0.60 | 13 |
| ARCH_836 | 50 | 1.98 | 2.4 | 246.03 | 0.30 | 0.3 | 0.58 | 0.46 | 22 |
| ARCH_836 | 50 | 1.98 | 2.7 | 126.04 | 0.30 | 0.38 | 0.58 | 0.46 | 19 |
| ARCH_837 | 100 | 1.98 | 2.4 | 511.44 | 0.30 | 0.22 | 0.77 | 0.60 | 11 |
| ARCH_837 | 100 | 1.98 | 2.7 | 255.75 | 0.30 | 0.38 | 0.77 | 0.60 | 19 |
| ARCH_837 | 100 | 1.98 | 3 | 171.73 | 0.30 | 0.42 | 0.77 | 0.60 | 16 |
| ARCH_837 | 100 | 1.98 | 3.3 | 118.23 | 0.30 | 0.46 | 0.77 | 0.60 | 14 |
| ARCH_894 | 200 | 1.14 | 2.4 | 239.92 | 0.61 | 0.54 | 1.16 | 0.93 | 12 |
| ARCH_894 | 200 | 1.14 | 2.7 | 120.83 | 0.61 | 0.82 | 1.16 | 0.93 | 19 |
| ARCH_895 | 300 | 1.14 | 2.4 | 330.38 | 0.61 | 0.5 | 1.36 | 1.08 | 10 |
| ARCH_895 | 300 | 1.14 | 2.7 | 172.02 | 0.61 | 0.78 | 1.36 | 1.08 | 18 |
| ARCH_895 | 300 | 1.14 | 3 | 125.64 | 0.61 | 0.9 | 1.36 | 1.08 | 19 |
| ARCH_896 | 400 | 1.14 | 2.4 | 555.97 | 0.61 | 0.5 | 1.53 | 1.20 | 10 |
| ARCH_896 | 400 | 1.14 | 2.7 | 253.67 | 0.61 | 0.7 | 1.53 | 1.20 | 15 |
| ARCH_896 | 400 | 1.14 | 3 | 172.71 | 0.61 | 0.86 | 1.53 | 1.20 | 18 |
| ARCH_896 | 400 | 1.14 | 3.3 | 135.45 | 0.61 | 0.94 | 1.53 | 1.20 | 17 |
| ARCH_896 | 400 | 1.14 | 3.6 | 115.42 | 0.61 | 1.1 | 1.53 | 1.20 | 19 |
| ARCH_897 | 500 | 1.14 | 2.4 | 685.87 | 0.61 | 0.46 | 1.68 | 1.31 | 9 |
| ARCH_897 | 500 | 1.14 | 2.7 | 385.73 | 0.61 | 0.62 | 1.68 | 1.31 | 13 |
| ARCH_897 | 500 | 1.14 | 3 | 255.53 | 0.61 | 0.7 | 1.68 | 1.31 | 13 |
| ARCH_897 | 500 | 1.14 | 3.3 | 187.46 | 0.61 | 0.82 | 1.68 | 1.31 | 14 |
| ARCH_897 | 500 | 1.14 | 3.6 | 155.04 | 0.61 | 0.98 | 1.68 | 1.31 | 16 |
| ARCH_897 | 500 | 1.14 | 3.9 | 131.32 | 0.61 | 1.02 | 1.68 | 1.31 | 15 |
| ARCH_897 | 500 | 1.14 | 4.2 | 114.1 | 0.61 | 1.06 | 1.68 | 1.31 | 14 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{PO} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|----------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| ARCH_898 | 600 | 1.14 | 2.4 | 757.31 | 0.61 | 0.5 | 1.82 | 1.41 | 10 |
| ARCH_898 | 600 | 1.14 | 2.7 | 435.11 | 0.61 | 0.66 | 1.82 | 1.41 | 14 |
| ARCH_898 | 600 | 1.14 | 3 | 317.58 | 0.61 | 0.74 | 1.82 | 1.41 | 14 |
| ARCH_898 | 600 | 1.14 | 3.3 | 232 | 0.61 | 0.86 | 1.82 | 1.41 | 15 |
| ARCH_898 | 600 | 1.14 | 3.6 | 193.7 | 0.61 | 0.9 | 1.82 | 1.41 | 14 |
| ARCH_898 | 600 | 1.14 | 3.9 | 158.56 | 0.61 | 0.94 | 1.82 | 1.41 | 14 |
| ARCH_898 | 600 | 1.14 | 4.2 | 134.6 | 0.61 | 0.98 | 1.82 | 1.41 | 13 |
| ARCH_898 | 600 | 1.14 | 4.5 | 113.8 | 0.61 | 1.02 | 1.82 | 1.41 | 13 |
| ARCH_901 | 200 | 1.98 | 2.4 | 673.58 | 0.61 | 0.38 | 1.16 | 0.93 | 15 |
| ARCH_901 | 200 | 1.98 | 2.7 | 349.88 | 0.61 | 0.46 | 1.16 | 0.93 | 15 |
| ARCH_901 | 200 | 1.98 | 3 | 233.64 | 0.61 | 0.5 | 1.16 | 0.93 | 13 |
| ARCH_901 | 200 | 1.98 | 3.3 | 174.13 | 0.61 | 0.5 | 1.16 | 0.93 | 10 |
| ARCH_901 | 200 | 1.98 | 3.6 | 141.03 | 0.61 | 0.54 | 1.16 | 0.93 | 9 |
| ARCH_901 | 200 | 1.98 | 3.9 | 110.93 | 0.61 | 0.54 | 1.16 | 0.93 | 8 |
| ARCH_902 | 300 | 1.98 | 2.7 | 637.24 | 0.61 | 0.42 | 1.36 | 1.08 | 12 |
| ARCH_902 | 300 | 1.98 | 3 | 430.61 | 0.61 | 0.42 | 1.36 | 1.08 | 8 |
| ARCH_902 | 300 | 1.98 | 3.3 | 325.15 | 0.61 | 0.42 | 1.36 | 1.08 | 6 |
| ARCH_902 | 300 | 1.98 | 3.6 | 252.2 | 0.61 | 0.42 | 1.36 | 1.08 | 5 |
| ARCH_902 | 300 | 1.98 | 3.9 | 194.8 | 0.61 | 0.42 | 1.36 | 1.08 | 4 |
| ARCH_902 | 300 | 1.98 | 4.2 | 158.08 | 0.61 | 0.42 | 1.36 | 1.08 | 4 |
| ARCH_902 | 300 | 1.98 | 4.5 | 126.34 | 0.61 | 0.42 | 1.36 | 1.08 | 3 |
| ARCH_903 | 400 | 1.98 | 3 | 692.12 | 0.61 | 0.42 | 1.53 | 1.20 | 8 |
| ARCH_903 | 400 | 1.98 | 3.3 | 495.23 | 0.61 | 0.42 | 1.53 | 1.20 | 6 |
| ARCH_903 | 400 | 1.98 | 3.6 | 367.41 | 0.61 | 0.42 | 1.53 | 1.20 | 5 |
| ARCH_903 | 400 | 1.98 | 3.9 | 269.44 | 0.61 | 0.42 | 1.53 | 1.20 | 4 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|----------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| ARCH_903 | 400 | 1.98 | 4.2 | 212.59 | 0.61 | 0.38 | 1.53 | 1.20 | 3 |
| ARCH_903 | 400 | 1.98 | 4.5 | 163.52 | 0.61 | 0.38 | 1.53 | 1.20 | 3 |
| ARCH_903 | 400 | 1.98 | 4.8 | 137.37 | 0.61 | 0.38 | 1.53 | 1.20 | 2 |
| ARCH_903 | 400 | 1.98 | 5.1 | 118.3 | 0.61 | 0.38 | 1.53 | 1.20 | 2 |
| ARCH_904 | 500 | 1.98 | 3.3 | 733.53 | 0.61 | 0.38 | 1.68 | 1.31 | 5 |
| ARCH_904 | 500 | 1.98 | 3.6 | 574.4 | 0.61 | 0.42 | 1.68 | 1.31 | 5 |
| ARCH_904 | 500 | 1.98 | 3.9 | 414.66 | 0.61 | 0.42 | 1.68 | 1.31 | 4 |
| ARCH_904 | 500 | 1.98 | 4.2 | 314.39 | 0.61 | 0.38 | 1.68 | 1.31 | 3 |
| ARCH_904 | 500 | 1.98 | 4.5 | 236.69 | 0.61 | 0.38 | 1.68 | 1.31 | 3 |
| ARCH_904 | 500 | 1.98 | 4.8 | 193.59 | 0.61 | 0.34 | 1.68 | 1.31 | 1 |
| ARCH_904 | 500 | 1.98 | 5.1 | 162.15 | 0.61 | 0.34 | 1.68 | 1.31 | 1 |
| ARCH_904 | 500 | 1.98 | 5.4 | 138.1 | 0.61 | 0.3 | 1.68 | 1.31 | 1 |
| ARCH_904 | 500 | 1.98 | 5.7 | 115.49 | 0.61 | 0.3 | 1.68 | 1.31 | 0 |
| ARCH_905 | 600 | 1.98 | 3.6 | 714.06 | 0.61 | 0.42 | 1.82 | 1.41 | 5 |
| ARCH_905 | 600 | 1.98 | 3.9 | 513.68 | 0.61 | 0.42 | 1.82 | 1.41 | 4 |
| ARCH_905 | 600 | 1.98 | 4.2 | 398.77 | 0.61 | 0.42 | 1.82 | 1.41 | 4 |
| ARCH_905 | 600 | 1.98 | 4.5 | 299.55 | 0.61 | 0.42 | 1.82 | 1.41 | 3 |
| ARCH_905 | 600 | 1.98 | 4.8 | 243.95 | 0.61 | 0.38 | 1.82 | 1.41 | 2 |
| ARCH_905 | 600 | 1.98 | 5.1 | 198.04 | 0.61 | 0.38 | 1.82 | 1.41 | 2 |
| ARCH_905 | 600 | 1.98 | 5.4 | 162.57 | 0.61 | 0.34 | 1.82 | 1.41 | 1 |
| ARCH_905 | 600 | 1.98 | 5.7 | 134.08 | 0.61 | 0.34 | 1.82 | 1.41 | 1 |
| ARCH_905 | 600 | 1.98 | 6 | 116.82 | 0.61 | 0.34 | 1.82 | 1.41 | 1 |
| ARCH_958 | 300 | 1.14 | 2.4 | 201.52 | 0.91 | 0.78 | 1.50 | 1.21 | 17 |
| ARCH_958 | 300 | 1.14 | 2.7 | 115.52 | 0.91 | 1.1 | 1.50 | 1.21 | 24 |
| ARCH_959 | 400 | 1.14 | 2.4 | 254.49 | 0.91 | 0.74 | 1.67 | 1.34 | 15 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{Po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|----------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| ARCH_959 | 400 | 1.14 | 2.7 | 150.19 | 0.91 | 1.06 | 1.67 | 1.34 | 23 |
| ARCH_959 | 400 | 1.14 | 3 | 115.72 | 0.91 | 1.22 | 1.67 | 1.34 | 24 |
| ARCH_960 | 500 | 1.14 | 2.4 | 351.76 | 0.91 | 0.7 | 1.82 | 1.45 | 13 |
| ARCH_960 | 500 | 1.14 | 2.7 | 186.86 | 0.91 | 0.98 | 1.82 | 1.45 | 20 |
| ARCH_960 | 500 | 1.14 | 3 | 146.01 | 0.91 | 1.18 | 1.82 | 1.45 | 23 |
| ARCH_960 | 500 | 1.14 | 3.3 | 117.15 | 0.91 | 1.3 | 1.82 | 1.45 | 23 |
| ARCH_961 | 600 | 1.14 | 2.4 | 412.98 | 0.91 | 0.7 | 1.95 | 1.55 | 13 |
| ARCH_961 | 600 | 1.14 | 2.7 | 217.42 | 0.91 | 0.98 | 1.95 | 1.55 | 20 |
| ARCH_961 | 600 | 1.14 | 3 | 164.16 | 0.91 | 1.14 | 1.95 | 1.55 | 22 |
| ARCH_961 | 600 | 1.14 | 3.3 | 132.43 | 0.91 | 1.26 | 1.95 | 1.55 | 22 |
| ARCH_961 | 600 | 1.14 | 3.6 | 113.03 | 0.91 | 1.38 | 1.95 | 1.55 | 22 |
| ARCH_965 | 300 | 1.98 | 2.4 | 587.47 | 0.91 | 0.54 | 1.50 | 1.21 | 18 |
| ARCH_965 | 300 | 1.98 | 2.7 | 311.53 | 0.91 | 0.58 | 1.50 | 1.21 | 14 |
| ARCH_965 | 300 | 1.98 | 3 | 212.09 | 0.91 | 0.58 | 1.50 | 1.21 | 10 |
| ARCH_965 | 300 | 1.98 | 3.3 | 157.64 | 0.91 | 0.62 | 1.50 | 1.21 | 9 |
| ARCH_965 | 300 | 1.98 | 3.6 | 126.25 | 0.91 | 0.66 | 1.50 | 1.21 | 9 |
| ARCH_966 | 400 | 1.98 | 2.7 | 532.14 | 0.91 | 0.62 | 1.67 | 1.34 | 17 |
| ARCH_966 | 400 | 1.98 | 3 | 348 | 0.91 | 0.58 | 1.67 | 1.34 | 10 |
| ARCH_966 | 400 | 1.98 | 3.3 | 255.26 | 0.91 | 0.58 | 1.67 | 1.34 | 8 |
| ARCH_966 | 400 | 1.98 | 3.6 | 199.12 | 0.91 | 0.62 | 1.67 | 1.34 | 8 |
| ARCH_966 | 400 | 1.98 | 3.9 | 160.14 | 0.91 | 0.62 | 1.67 | 1.34 | 6 |
| ARCH_966 | 400 | 1.98 | 4.2 | 134.08 | 0.91 | 0.62 | 1.67 | 1.34 | 6 |
| ARCH_966 | 400 | 1.98 | 4.5 | 110.46 | 0.91 | 0.62 | 1.67 | 1.34 | 5 |
| ARCH_967 | 500 | 1.98 | 2.7 | 622.57 | 0.91 | 0.62 | 1.82 | 1.45 | 17 |
| ARCH_967 | 500 | 1.98 | 3 | 429.19 | 0.91 | 0.54 | 1.82 | 1.45 | 8 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|----------------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| ARCH_967 | 500 | 1.98 | 3.3 | 304.39 | 0.91 | 0.54 | 1.82 | 1.45 | 6 |
| ARCH_967 | 500 | 1.98 | 3.6 | 232.72 | 0.91 | 0.58 | 1.82 | 1.45 | 6 |
| ARCH_967 | 500 | 1.98 | 3.9 | 196.54 | 0.91 | 0.58 | 1.82 | 1.45 | 5 |
| ARCH_967 | 500 | 1.98 | 4.2 | 163.63 | 0.91 | 0.58 | 1.82 | 1.45 | 5 |
| ARCH_967 | 500 | 1.98 | 4.5 | 133.81 | 0.91 | 0.58 | 1.82 | 1.45 | 4 |
| ARCH_967 | 500 | 1.98 | 4.5 | 133.81 | 0.91 | 0.58 | 1.82 | 1.45 | 4 |
| ARCH_967 | 500 | 1.98 | 4.8 | 114.52 | 0.91 | 0.58 | 1.82 | 1.45 | 4 |
| ARCH_968 | 600 | 1.98 | 2.7 | 697.36 | 0.91 | 0.5 | 1.95 | 1.55 | 8 |
| ARCH_968 | 600 | 1.98 | 3 | 529.99 | 0.91 | 0.54 | 1.95 | 1.55 | 8 |
| ARCH_968 | 600 | 1.98 | 3.3 | 392.15 | 0.91 | 0.54 | 1.95 | 1.55 | 6 |
| ARCH_968 | 600 | 1.98 | 3.6 | 291.81 | 0.91 | 0.54 | 1.95 | 1.55 | 5 |
| ARCH_968 | 600 | 1.98 | 3.9 | 225.14 | 0.91 | 0.5 | 1.95 | 1.55 | 3 |
| ARCH_968 | 600 | 1.98 | 4.2 | 189.01 | 0.91 | 0.5 | 1.95 | 1.55 | 2 |
| ARCH_968 | 600 | 1.98 | 4.5 | 153.48 | 0.91 | 0.46 | 1.95 | 1.55 | 1 |
| ARCH_968 | 600 | 1.98 | 4.8 | 129.83 | 0.91 | 0.42 | 1.95 | 1.55 | 0 |
| ARCH_968 | 600 | 1.98 | 5.1 | 111.62 | 0.91 | 0.42 | 1.95 | 1.55 | 0 |
| THREEWALL_1058 | 1000 | 1.14 | 2.7 | 620.76 | 0.91 | 1.06 | 2.40 | 1.88 | 23 |
| THREEWALL_1058 | 1000 | 1.14 | 3 | 484.86 | 0.91 | 1.22 | 2.40 | 1.88 | 24 |
| THREEWALL_1058 | 1000 | 1.14 | 3.3 | 381.71 | 0.91 | 1.34 | 2.40 | 1.88 | 23 |
| THREEWALL_1058 | 1000 | 1.14 | 3.6 | 319.8 | 0.91 | 1.42 | 2.40 | 1.88 | 22 |
| THREEWALL_1058 | 1000 | 1.14 | 3.9 | 264.72 | 0.91 | 1.46 | 2.40 | 1.88 | 21 |
| THREEWALL_1058 | 1000 | 1.14 | 4.2 | 230.82 | 0.91 | 1.54 | 2.40 | 1.88 | 20 |
| THREEWALL_1058 | 1000 | 1.14 | 4.5 | 195.58 | 0.91 | 1.58 | 2.40 | 1.88 | 19 |
| THREEWALL_1058 | 1000 | 1.14 | 4.8 | 168.42 | 0.91 | 1.62 | 2.40 | 1.88 | 18 |
| THREEWALL_1058 | 1000 | 1.14 | 5.1 | 146.49 | 0.91 | 1.66 | 2.40 | 1.88 | 18 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|----------------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| THREEWALL_1058 | 1000 | 1.14 | 5.4 | 126.15 | 0.91 | 1.7 | 2.40 | 1.88 | 17 |
| THREEWALL_1058 | 1000 | 1.14 | 5.7 | 115.05 | 0.91 | 1.58 | 2.40 | 1.88 | 14 |
| THREEWALL_1059 | 1000 | 1.98 | 3.9 | 646.54 | 0.91 | 0.58 | 2.40 | 1.88 | 5 |
| THREEWALL_1059 | 1000 | 1.98 | 4.2 | 527.72 | 0.91 | 0.58 | 2.40 | 1.88 | 5 |
| THREEWALL_1059 | 1000 | 1.98 | 4.5 | 411.6 | 0.91 | 0.58 | 2.40 | 1.88 | 4 |
| THREEWALL_1059 | 1000 | 1.98 | 4.8 | 334.89 | 0.91 | 0.58 | 2.40 | 1.88 | 4 |
| THREEWALL_1059 | 1000 | 1.98 | 5.1 | 286.67 | 0.91 | 0.58 | 2.40 | 1.88 | 3 |
| THREEWALL_1059 | 1000 | 1.98 | 5.4 | 244.2 | 0.91 | 0.58 | 2.40 | 1.88 | 3 |
| THREEWALL_1059 | 1000 | 1.98 | 5.7 | 207.16 | 0.91 | 0.58 | 2.40 | 1.88 | 3 |
| THREEWALL_1059 | 1000 | 1.98 | 6 | 186.73 | 0.91 | 0.58 | 2.40 | 1.88 | 2 |
| THREEWALL_1067 | 1000 | 1.14 | 2.4 | 663.06 | 1.22 | 0.94 | 2.53 | 2.01 | 18 |
| THREEWALL_1067 | 1000 | 1.14 | 2.7 | 440.84 | 1.22 | 1.22 | 2.53 | 2.01 | 24 |
| THREEWALL_1067 | 1000 | 1.14 | 3 | 343.31 | 1.22 | 1.38 | 2.53 | 2.01 | 24 |
| THREEWALL_1067 | 1000 | 1.14 | 3.3 | 279.81 | 1.22 | 1.5 | 2.53 | 2.01 | 24 |
| THREEWALL_1067 | 1000 | 1.14 | 3.6 | 235.01 | 1.22 | 1.66 | 2.53 | 2.01 | 25 |
| THREEWALL_1067 | 1000 | 1.14 | 3.9 | 190.95 | 1.22 | 1.74 | 2.53 | 2.01 | 24 |
| THREEWALL_1067 | 1000 | 1.14 | 4.2 | 167.89 | 1.22 | 1.82 | 2.53 | 2.01 | 23 |
| THREEWALL_1067 | 1000 | 1.14 | 4.5 | 141.24 | 1.22 | 1.82 | 2.53 | 2.01 | 21 |
| THREEWALL_1067 | 1000 | 1.14 | 4.8 | 125.62 | 1.22 | 1.98 | 2.53 | 2.01 | 21 |
| THREEWALL_1067 | 1000 | 1.14 | 5.1 | 112.94 | 1.22 | 1.86 | 2.53 | 2.01 | 18 |
| THREEWALL_1068 | 1000 | 1.98 | 3.6 | 659.45 | 1.22 | 0.7 | 2.53 | 2.01 | 6 |
| THREEWALL_1068 | 1000 | 1.98 | 3.9 | 496.14 | 1.22 | 0.78 | 2.53 | 2.01 | 7 |
| THREEWALL_1068 | 1000 | 1.98 | 4.2 | 397.07 | 1.22 | 0.82 | 2.53 | 2.01 | 7 |
| THREEWALL_1068 | 1000 | 1.98 | 4.5 | 318.85 | 1.22 | 0.78 | 2.53 | 2.01 | 5 |
| THREEWALL_1068 | 1000 | 1.98 | 4.8 | 272.29 | 1.22 | 0.74 | 2.53 | 2.01 | 4 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|----------------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| THREEWALL_1068 | 1000 | 1.98 | 5.1 | 234.15 | 1.22 | 0.78 | 2.53 | 2.01 | 4 |
| THREEWALL_1068 | 1000 | 1.98 | 5.4 | 204.04 | 1.22 | 0.7 | 2.53 | 2.01 | 3 |
| THREEWALL_1068 | 1000 | 1.98 | 5.7 | 179.74 | 1.22 | 0.7 | 2.53 | 2.01 | 2 |
| THREEWALL_1068 | 1000 | 1.98 | 6 | 161.86 | 1.22 | 0.7 | 2.53 | 2.01 | 2 |
| THREEWALL_850 | 50 | 1.14 | 2.4 | 155.3 | 0.30 | 0.46 | 0.58 | 0.46 | 14 |
| THREEWALL_851 | 100 | 1.14 | 2.4 | 255.53 | 0.30 | 0.46 | 0.77 | 0.60 | 14 |
| THREEWALL_851 | 100 | 1.14 | 2.7 | 139.25 | 0.30 | 0.7 | 0.77 | 0.60 | 20 |
| THREEWALL_857 | 50 | 1.98 | 2.4 | 415.6 | 0.30 | 0.26 | 0.58 | 0.46 | 17 |
| THREEWALL_857 | 50 | 1.98 | 2.7 | 235.48 | 0.30 | 0.34 | 0.58 | 0.46 | 16 |
| THREEWALL_857 | 50 | 1.98 | 3 | 157.34 | 0.30 | 0.38 | 0.58 | 0.46 | 14 |
| THREEWALL_857 | 50 | 1.98 | 3.3 | 111.29 | 0.30 | 0.46 | 0.58 | 0.46 | 14 |
| THREEWALL_858 | 100 | 1.98 | 2.7 | 510.25 | 0.30 | 0.34 | 0.77 | 0.60 | 16 |
| THREEWALL_858 | 100 | 1.98 | 3 | 327.37 | 0.30 | 0.38 | 0.77 | 0.60 | 14 |
| THREEWALL_858 | 100 | 1.98 | 3.3 | 218.83 | 0.30 | 0.38 | 0.77 | 0.60 | 11 |
| THREEWALL_858 | 100 | 1.98 | 3.6 | 169.87 | 0.30 | 0.42 | 0.77 | 0.60 | 10 |
| THREEWALL_858 | 100 | 1.98 | 3.9 | 135.33 | 0.30 | 0.42 | 0.77 | 0.60 | 8 |
| THREEWALL_915 | 200 | 1.14 | 2.4 | 300.06 | 0.61 | 0.7 | 1.16 | 0.93 | 19 |
| THREEWALL_915 | 200 | 1.14 | 2.7 | 159.86 | 0.61 | 0.94 | 1.16 | 0.93 | 23 |
| THREEWALL_915 | 200 | 1.14 | 3 | 134.36 | 0.61 | 1.1 | 1.16 | 0.93 | 24 |
| THREEWALL_916 | 300 | 1.14 | 2.4 | 488.54 | 0.61 | 0.66 | 1.36 | 1.08 | 17 |
| THREEWALL_916 | 300 | 1.14 | 2.7 | 250.02 | 0.61 | 0.9 | 1.36 | 1.08 | 22 |
| THREEWALL_916 | 300 | 1.14 | 3 | 174.28 | 0.61 | 1.02 | 1.36 | 1.08 | 22 |
| THREEWALL_916 | 300 | 1.14 | 3.3 | 141.38 | 0.61 | 1.14 | 1.36 | 1.08 | 22 |
| THREEWALL_916 | 300 | 1.14 | 3.6 | 123.99 | 0.61 | 1.26 | 1.36 | 1.08 | 22 |
| THREEWALL_916 | 300 | 1.14 | 3.9 | 110.29 | 0.61 | 1.34 | 1.36 | 1.08 | 21 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{Po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|---------------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| THREEWALL_917 | 400 | 1.14 | 2.4 | 663.59 | 0.61 | 0.62 | 1.53 | 1.20 | 16 |
| THREEWALL_917 | 400 | 1.14 | 2.7 | 370.31 | 0.61 | 0.86 | 1.53 | 1.20 | 21 |
| THREEWALL_917 | 400 | 1.14 | 3 | 250.68 | 0.61 | 0.98 | 1.53 | 1.20 | 21 |
| THREEWALL_917 | 400 | 1.14 | 3.3 | 183.21 | 0.61 | 1.1 | 1.53 | 1.20 | 21 |
| THREEWALL_917 | 400 | 1.14 | 3.6 | 152.33 | 0.61 | 1.18 | 1.53 | 1.20 | 20 |
| THREEWALL_917 | 400 | 1.14 | 3.9 | 132.92 | 0.61 | 1.3 | 1.53 | 1.20 | 20 |
| THREEWALL_917 | 400 | 1.14 | 4.2 | 118.8 | 0.61 | 1.34 | 1.53 | 1.20 | 19 |
| THREEWALL_918 | 500 | 1.14 | 2.7 | 466.61 | 0.61 | 0.78 | 1.68 | 1.31 | 18 |
| THREEWALL_918 | 500 | 1.14 | 3 | 313.59 | 0.61 | 0.86 | 1.68 | 1.31 | 18 |
| THREEWALL_918 | 500 | 1.14 | 3.3 | 222.06 | 0.61 | 1.02 | 1.68 | 1.31 | 19 |
| THREEWALL_918 | 500 | 1.14 | 3.6 | 184.52 | 0.61 | 1.14 | 1.68 | 1.31 | 19 |
| THREEWALL_918 | 500 | 1.14 | 3.9 | 155.58 | 0.61 | 1.22 | 1.68 | 1.31 | 19 |
| THREEWALL_918 | 500 | 1.14 | 4.2 | 134.38 | 0.61 | 1.3 | 1.68 | 1.31 | 19 |
| THREEWALL_918 | 500 | 1.14 | 4.5 | 110.96 | 0.61 | 1.34 | 1.68 | 1.31 | 18 |
| THREEWALL_919 | 600 | 1.14 | 2.7 | 562.28 | 0.61 | 0.78 | 1.82 | 1.41 | 18 |
| THREEWALL_919 | 600 | 1.14 | 3 | 416.03 | 0.61 | 0.9 | 1.82 | 1.41 | 19 |
| THREEWALL_919 | 600 | 1.14 | 3.3 | 305.81 | 0.61 | 1.02 | 1.82 | 1.41 | 19 |
| THREEWALL_919 | 600 | 1.14 | 3.6 | 248 | 0.61 | 1.14 | 1.82 | 1.41 | 19 |
| THREEWALL_919 | 600 | 1.14 | 3.9 | 203.92 | 0.61 | 1.18 | 1.82 | 1.41 | 18 |
| THREEWALL_919 | 600 | 1.14 | 4.2 | 176.1 | 0.61 | 1.22 | 1.82 | 1.41 | 17 |
| THREEWALL_919 | 600 | 1.14 | 4.5 | 152.14 | 0.61 | 1.26 | 1.82 | 1.41 | 16 |
| THREEWALL_919 | 600 | 1.14 | 4.8 | 138.53 | 0.61 | 1.26 | 1.82 | 1.41 | 15 |
| THREEWALL_919 | 600 | 1.14 | 5.1 | 123.64 | 0.61 | 1.3 | 1.82 | 1.41 | 15 |
| THREEWALL_922 | 200 | 1.98 | 2.7 | 587.45 | 0.61 | 0.5 | 1.16 | 0.93 | 18 |
| THREEWALL_922 | 200 | 1.98 | 3 | 418.25 | 0.61 | 0.54 | 1.16 | 0.93 | 15 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|---------------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| THREEWALL_922 | 200 | 1.98 | 3.3 | 309.14 | 0.61 | 0.58 | 1.16 | 0.93 | 13 |
| THREEWALL_922 | 200 | 1.98 | 3.6 | 236.87 | 0.61 | 0.62 | 1.16 | 0.93 | 12 |
| THREEWALL_922 | 200 | 1.98 | 3.9 | 183.85 | 0.61 | 0.62 | 1.16 | 0.93 | 10 |
| THREEWALL_922 | 200 | 1.98 | 4.2 | 148.83 | 0.61 | 0.62 | 1.16 | 0.93 | 9 |
| THREEWALL_922 | 200 | 1.98 | 4.5 | 125.65 | 0.61 | 0.62 | 1.16 | 0.93 | 8 |
| THREEWALL_923 | 300 | 1.98 | 3 | 706.09 | 0.61 | 0.54 | 1.36 | 1.08 | 15 |
| THREEWALL_923 | 300 | 1.98 | 3.3 | 490.62 | 0.61 | 0.58 | 1.36 | 1.08 | 13 |
| THREEWALL_923 | 300 | 1.98 | 3.6 | 368.3 | 0.61 | 0.58 | 1.36 | 1.08 | 11 |
| THREEWALL_923 | 300 | 1.98 | 3.9 | 270.83 | 0.61 | 0.62 | 1.36 | 1.08 | 10 |
| THREEWALL_923 | 300 | 1.98 | 4.2 | 210.29 | 0.61 | 0.62 | 1.36 | 1.08 | 9 |
| THREEWALL_923 | 300 | 1.98 | 4.5 | 162.55 | 0.61 | 0.62 | 1.36 | 1.08 | 8 |
| THREEWALL_923 | 300 | 1.98 | 4.8 | 137.83 | 0.61 | 0.62 | 1.36 | 1.08 | 7 |
| THREEWALL_923 | 300 | 1.98 | 5.1 | 120.83 | 0.61 | 0.62 | 1.36 | 1.08 | 6 |
| THREEWALL_924 | 400 | 1.98 | 3.3 | 661.79 | 0.61 | 0.58 | 1.53 | 1.20 | 13 |
| THREEWALL_924 | 400 | 1.98 | 3.6 | 499.42 | 0.61 | 0.58 | 1.53 | 1.20 | 11 |
| THREEWALL_924 | 400 | 1.98 | 3.9 | 368.24 | 0.61 | 0.58 | 1.53 | 1.20 | 9 |
| THREEWALL_924 | 400 | 1.98 | 4.2 | 286.26 | 0.61 | 0.58 | 1.53 | 1.20 | 8 |
| THREEWALL_924 | 400 | 1.98 | 4.5 | 226.33 | 0.61 | 0.58 | 1.53 | 1.20 | 7 |
| THREEWALL_924 | 400 | 1.98 | 4.8 | 193.8 | 0.61 | 0.58 | 1.53 | 1.20 | 6 |
| THREEWALL_924 | 400 | 1.98 | 5.1 | 163.16 | 0.61 | 0.58 | 1.53 | 1.20 | 6 |
| THREEWALL_924 | 400 | 1.98 | 5.4 | 137.27 | 0.61 | 0.58 | 1.53 | 1.20 | 5 |
| THREEWALL_924 | 400 | 1.98 | 5.7 | 117.47 | 0.61 | 0.62 | 1.53 | 1.20 | 5 |
| THREEWALL_925 | 500 | 1.98 | 3.3 | 779.73 | 0.61 | 0.54 | 1.68 | 1.31 | 12 |
| THREEWALL_925 | 500 | 1.98 | 3.6 | 644.76 | 0.61 | 0.54 | 1.68 | 1.31 | 9 |
| THREEWALL_925 | 500 | 1.98 | 3.9 | 498.6 | 0.61 | 0.54 | 1.68 | 1.31 | 8 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|---------------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| THREEWALL_925 | 500 | 1.98 | 4.2 | 385.1 | 0.61 | 0.58 | 1.68 | 1.31 | 8 |
| THREEWALL_925 | 500 | 1.98 | 4.5 | 290.44 | 0.61 | 0.54 | 1.68 | 1.31 | 6 |
| THREEWALL_925 | 500 | 1.98 | 4.8 | 242.34 | 0.61 | 0.54 | 1.68 | 1.31 | 5 |
| THREEWALL_925 | 500 | 1.98 | 5.1 | 201.57 | 0.61 | 0.54 | 1.68 | 1.31 | 5 |
| THREEWALL_925 | 500 | 1.98 | 5.4 | 172.52 | 0.61 | 0.58 | 1.68 | 1.31 | 5 |
| THREEWALL_925 | 500 | 1.98 | 5.7 | 146.57 | 0.61 | 0.58 | 1.68 | 1.31 | 5 |
| THREEWALL_925 | 500 | 1.98 | 6 | 126.18 | 0.61 | 0.58 | 1.68 | 1.31 | 4 |
| THREEWALL_926 | 600 | 1.98 | 3.6 | 686.97 | 0.61 | 0.54 | 1.82 | 1.41 | 9 |
| THREEWALL_926 | 600 | 1.98 | 3.9 | 541.53 | 0.61 | 0.54 | 1.82 | 1.41 | 8 |
| THREEWALL_926 | 600 | 1.98 | 4.2 | 420.71 | 0.61 | 0.54 | 1.82 | 1.41 | 7 |
| THREEWALL_926 | 600 | 1.98 | 4.5 | 320.56 | 0.61 | 0.54 | 1.82 | 1.41 | 6 |
| THREEWALL_926 | 600 | 1.98 | 4.8 | 264.69 | 0.61 | 0.54 | 1.82 | 1.41 | 5 |
| THREEWALL_926 | 600 | 1.98 | 5.1 | 224.92 | 0.61 | 0.54 | 1.82 | 1.41 | 5 |
| THREEWALL_926 | 600 | 1.98 | 5.4 | 188.27 | 0.61 | 0.54 | 1.82 | 1.41 | 5 |
| THREEWALL_926 | 600 | 1.98 | 5.7 | 163.19 | 0.61 | 0.5 | 1.82 | 1.41 | 4 |
| THREEWALL_926 | 600 | 1.98 | 6 | 146.48 | 0.61 | 0.5 | 1.82 | 1.41 | 3 |
| THREEWALL_979 | 300 | 1.14 | 2.4 | 290.52 | 0.91 | 0.9 | 1.50 | 1.21 | 21 |
| THREEWALL_979 | 300 | 1.14 | 2.7 | 164.64 | 0.91 | 1.18 | 1.50 | 1.21 | 26 |
| THREEWALL_979 | 300 | 1.14 | 3 | 126.48 | 0.91 | 1.34 | 1.50 | 1.21 | 27 |
| THREEWALL_980 | 400 | 1.14 | 2.4 | 360.97 | 0.91 | 0.86 | 1.67 | 1.34 | 20 |
| THREEWALL_980 | 400 | 1.14 | 2.7 | 211.62 | 0.91 | 1.18 | 1.67 | 1.34 | 26 |
| THREEWALL_980 | 400 | 1.14 | 3 | 164.42 | 0.91 | 1.34 | 1.67 | 1.34 | 27 |
| THREEWALL_980 | 400 | 1.14 | 3.3 | 131.59 | 0.91 | 1.5 | 1.67 | 1.34 | 27 |
| THREEWALL_980 | 400 | 1.14 | 3.6 | 114.53 | 0.91 | 1.62 | 1.67 | 1.34 | 26 |
| THREEWALL_981 | 500 | 1.14 | 2.4 | 502.3 | 0.91 | 0.86 | 1.82 | 1.45 | 20 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R_{Po} (m) | R_{rad}Thermoplastic (m) | R_{rad}Thermoset (m) | Angle |
|---------------|---------------------|------------------------------|--------------------------|---|-------------------------|-------------------------------|---|---|--------------|
| THREEWALL_981 | 500 | 1.14 | 2.7 | 263.14 | 0.91 | 1.14 | 1.82 | 1.45 | 25 |
| THREEWALL_981 | 500 | 1.14 | 3 | 203.96 | 0.91 | 1.34 | 1.82 | 1.45 | 27 |
| THREEWALL_981 | 500 | 1.14 | 3.3 | 167.48 | 0.91 | 1.46 | 1.82 | 1.45 | 26 |
| THREEWALL_981 | 500 | 1.14 | 3.6 | 143.06 | 0.91 | 1.54 | 1.82 | 1.45 | 25 |
| THREEWALL_981 | 500 | 1.14 | 3.9 | 126.31 | 0.91 | 1.62 | 1.82 | 1.45 | 24 |
| THREEWALL_981 | 500 | 1.14 | 4.2 | 113.8 | 0.91 | 1.66 | 1.82 | 1.45 | 22 |
| THREEWALL_982 | 600 | 1.14 | 2.4 | 584.51 | 0.91 | 0.86 | 1.95 | 1.55 | 20 |
| THREEWALL_982 | 600 | 1.14 | 2.7 | 330.93 | 0.91 | 1.14 | 1.95 | 1.55 | 25 |
| THREEWALL_982 | 600 | 1.14 | 3 | 248.81 | 0.91 | 1.3 | 1.95 | 1.55 | 26 |
| THREEWALL_982 | 600 | 1.14 | 3.3 | 201.1 | 0.91 | 1.42 | 1.95 | 1.55 | 25 |
| THREEWALL_982 | 600 | 1.14 | 3.6 | 173.38 | 0.91 | 1.54 | 1.95 | 1.55 | 25 |
| THREEWALL_982 | 600 | 1.14 | 3.9 | 151.54 | 0.91 | 1.62 | 1.95 | 1.55 | 24 |
| THREEWALL_982 | 600 | 1.14 | 4.2 | 133.52 | 0.91 | 1.7 | 1.95 | 1.55 | 23 |
| THREEWALL_982 | 600 | 1.14 | 4.5 | 118.27 | 0.91 | 1.78 | 1.95 | 1.55 | 22 |
| THREEWALL_986 | 300 | 1.98 | 2.7 | 661.25 | 0.91 | 0.66 | 1.50 | 1.21 | 20 |
| THREEWALL_986 | 300 | 1.98 | 3 | 470.11 | 0.91 | 0.66 | 1.50 | 1.21 | 14 |
| THREEWALL_986 | 300 | 1.98 | 3.3 | 333.3 | 0.91 | 0.7 | 1.50 | 1.21 | 13 |
| THREEWALL_986 | 300 | 1.98 | 3.6 | 258.73 | 0.91 | 0.7 | 1.50 | 1.21 | 10 |
| THREEWALL_986 | 300 | 1.98 | 3.9 | 207.21 | 0.91 | 0.74 | 1.50 | 1.21 | 10 |
| THREEWALL_986 | 300 | 1.98 | 4.2 | 162.1 | 0.91 | 0.74 | 1.50 | 1.21 | 9 |
| THREEWALL_986 | 300 | 1.98 | 4.5 | 128.46 | 0.91 | 0.74 | 1.50 | 1.21 | 8 |
| THREEWALL_987 | 400 | 1.98 | 3 | 656.43 | 0.91 | 0.7 | 1.67 | 1.34 | 16 |
| THREEWALL_987 | 400 | 1.98 | 3.3 | 421.27 | 0.91 | 0.7 | 1.67 | 1.34 | 13 |
| THREEWALL_987 | 400 | 1.98 | 3.6 | 319.87 | 0.91 | 0.74 | 1.67 | 1.34 | 12 |
| THREEWALL_987 | 400 | 1.98 | 3.9 | 246.42 | 0.91 | 0.7 | 1.67 | 1.34 | 9 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|---------------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| THREEWALL_987 | 400 | 1.98 | 4.2 | 200.39 | 0.91 | 0.74 | 1.67 | 1.34 | 9 |
| THREEWALL_987 | 400 | 1.98 | 4.5 | 162.32 | 0.91 | 0.66 | 1.67 | 1.34 | 6 |
| THREEWALL_987 | 400 | 1.98 | 4.8 | 144.19 | 0.91 | 0.7 | 1.67 | 1.34 | 6 |
| THREEWALL_987 | 400 | 1.98 | 5.1 | 128.53 | 0.91 | 0.7 | 1.67 | 1.34 | 5 |
| THREEWALL_987 | 400 | 1.98 | 5.4 | 115.35 | 0.91 | 0.7 | 1.67 | 1.34 | 5 |
| THREEWALL_988 | 500 | 1.98 | 3 | 779.43 | 0.91 | 0.7 | 1.82 | 1.45 | 16 |
| THREEWALL_988 | 500 | 1.98 | 3.3 | 586.92 | 0.91 | 0.7 | 1.82 | 1.45 | 13 |
| THREEWALL_988 | 500 | 1.98 | 3.6 | 434.55 | 0.91 | 0.7 | 1.82 | 1.45 | 10 |
| THREEWALL_988 | 500 | 1.98 | 3.9 | 323.91 | 0.91 | 0.7 | 1.82 | 1.45 | 9 |
| THREEWALL_988 | 500 | 1.98 | 4.2 | 262.91 | 0.91 | 0.7 | 1.82 | 1.45 | 8 |
| THREEWALL_988 | 500 | 1.98 | 4.5 | 209.44 | 0.91 | 0.66 | 1.82 | 1.45 | 6 |
| THREEWALL_988 | 500 | 1.98 | 4.8 | 178.62 | 0.91 | 0.7 | 1.82 | 1.45 | 6 |
| THREEWALL_988 | 500 | 1.98 | 5.1 | 157.02 | 0.91 | 0.7 | 1.82 | 1.45 | 5 |
| THREEWALL_988 | 500 | 1.98 | 5.4 | 137.24 | 0.91 | 0.66 | 1.82 | 1.45 | 4 |
| THREEWALL_988 | 500 | 1.98 | 5.7 | 117.4 | 0.91 | 0.7 | 1.82 | 1.45 | 5 |
| THREEWALL_989 | 600 | 1.98 | 3.3 | 732.38 | 0.91 | 0.7 | 1.95 | 1.55 | 13 |
| THREEWALL_989 | 600 | 1.98 | 3.6 | 562.49 | 0.91 | 0.74 | 1.95 | 1.55 | 12 |
| THREEWALL_989 | 600 | 1.98 | 3.9 | 411.65 | 0.91 | 0.7 | 1.95 | 1.55 | 9 |
| THREEWALL_989 | 600 | 1.98 | 4.2 | 329.02 | 0.91 | 0.7 | 1.95 | 1.55 | 8 |
| THREEWALL_989 | 600 | 1.98 | 4.5 | 250.92 | 0.91 | 0.7 | 1.95 | 1.55 | 7 |
| THREEWALL_989 | 600 | 1.98 | 4.8 | 213.27 | 0.91 | 0.7 | 1.95 | 1.55 | 6 |
| THREEWALL_989 | 600 | 1.98 | 5.1 | 182.93 | 0.91 | 0.7 | 1.95 | 1.55 | 5 |
| THREEWALL_989 | 600 | 1.98 | 5.4 | 156.71 | 0.91 | 0.7 | 1.95 | 1.55 | 5 |
| THREEWALL_989 | 600 | 1.98 | 5.7 | 131.1 | 0.91 | 0.7 | 1.95 | 1.55 | 5 |
| THREEWALL_989 | 600 | 1.98 | 6 | 117.61 | 0.91 | 0.62 | 1.95 | 1.55 | 3 |

Table E-9
Horizontal Plume Shift and Angle Sensitivity Results

| Test | HRR (kW) | Source Height (m) | Elevation (m) | Maximum Plume Temperature Rise (C) | Diameter (m) | R _{po} (m) | R _{rad} Thermoplastic (m) | R _{rad} Thermoset (m) | Angle |
|-----------|-------------|----------------------|------------------|--|-----------------|------------------------|---------------------------------------|-----------------------------------|-------|
| OBST_1052 | 1000 | 1.14 | 2.7 | 619.49 | 0.91 | 0.46 | 2.40 | 1.88 | 2 |
| OBST_1061 | 1000 | 1.14 | 2.4 | 668.56 | 1.22 | 0.66 | 2.53 | 2.01 | 5 |
| OBST_1061 | 1000 | 1.14 | 2.7 | 493.44 | 1.22 | 0.58 | 2.53 | 2.01 | 1 |
| OBST_808 | 50 | 1.14 | 2.4 | 118.47 | 0.30 | 0.22 | 0.58 | 0.46 | 4 |
| OBST_815 | 50 | 1.98 | 2.4 | 218.53 | 0.30 | 0.22 | 0.58 | 0.46 | 11 |
| OBST_816 | 100 | 1.98 | 2.4 | 414.45 | 0.30 | 0.22 | 0.77 | 0.60 | 11 |
| OBST_874 | 300 | 1.14 | 2.4 | 348.65 | 0.61 | 0.42 | 1.36 | 1.08 | 7 |
| OBST_874 | 300 | 1.14 | 2.7 | 225.86 | 0.61 | 0.38 | 1.36 | 1.08 | 4 |
| OBST_876 | 500 | 1.14 | 2.4 | 650.82 | 0.61 | 0.38 | 1.68 | 1.31 | 5 |
| OBST_876 | 500 | 1.14 | 3 | 305.36 | 0.61 | 0.3 | 1.68 | 1.31 | 1 |
| OBST_938 | 400 | 1.14 | 2.4 | 325.72 | 0.91 | 0.58 | 1.67 | 1.34 | 8 |
| OBST_938 | 400 | 1.14 | 2.7 | 212.8 | 0.91 | 0.46 | 1.67 | 1.34 | 2 |
| OBST_940 | 600 | 1.14 | 3 | 272.81 | 0.91 | 0.42 | 1.95 | 1.55 | 0 |
| OBST_944 | 300 | 1.98 | 2.4 | 428.28 | 0.91 | 0.46 | 1.50 | 1.21 | 7 |
| OBST_945 | 400 | 1.98 | 2.4 | 614.19 | 0.91 | 0.46 | 1.67 | 1.34 | 7 |

Index to Obstructed and Unobstructed Simulation Numbers

Table E-10
Index to Obstructed and Unobstructed Simulation Numbers

| HRR (kW) | Source Height (m) | Source Diameter (m) | BASE_# (Unobstructed Plume) | OBST_# (Top Plate Only) | ARCH_# (Top Plate + 2 Walls) | THREEWALL_# (Top Plate + 3 Walls) |
|----------|-------------------|---------------------|-----------------------------|-------------------------|------------------------------|-----------------------------------|
| 50 | 0.3048 | 0.3048 | 300 | 801 | 822 | 843 |
| 50 | 1.1430 | 0.3048 | 311 | 808 | 829 | 850 |
| 50 | 1.9812 | 0.3048 | 322 | 815 | 836 | 857 |
| 100 | 0.3048 | 0.3048 | 301 | 802 | 823 | 844 |
| 100 | 1.1430 | 0.3048 | 312 | 809 | 830 | 851 |
| 100 | 1.9812 | 0.3048 | 323 | 816 | 837 | 858 |
| 200 | 0.3048 | 0.6096 | 302 | 866 | 887 | 908 |
| 200 | 1.1430 | 0.6096 | 313 | 873 | 894 | 915 |
| 200 | 1.9812 | 0.6096 | 324 | 880 | 901 | 922 |
| 300 | 0.3048 | 0.6096 | 303 | 867 | 888 | 909 |
| 300 | 1.1430 | 0.6096 | 314 | 874 | 895 | 916 |
| 300 | 1.9812 | 0.6096 | 325 | 881 | 902 | 923 |
| 300 | 0.3048 | 0.9144 | 307 | 930 | 951 | 972 |
| 300 | 1.1430 | 0.9144 | 318 | 937 | 958 | 979 |
| 300 | 1.9812 | 0.9144 | 329 | 944 | 965 | 986 |
| 400 | 0.3048 | 0.6096 | 304 | 868 | 889 | 910 |
| 400 | 1.1430 | 0.6096 | 315 | 875 | 896 | 917 |
| 400 | 1.9812 | 0.6096 | 326 | 882 | 903 | 924 |
| 400 | 0.3048 | 0.9144 | 308 | 931 | 952 | 973 |
| 400 | 1.1430 | 0.9144 | 319 | 938 | 959 | 980 |
| 400 | 1.9812 | 0.9144 | 330 | 945 | 966 | 987 |
| 500 | 0.3048 | 0.6096 | 305 | 869 | 890 | 911 |
| 500 | 1.1430 | 0.6096 | 316 | 876 | 897 | 918 |
| 500 | 1.9812 | 0.6096 | 327 | 883 | 904 | 925 |
| 500 | 0.3048 | 0.9144 | 309 | 932 | 953 | 974 |
| 500 | 1.1430 | 0.9144 | 320 | 939 | 960 | 981 |
| 500 | 1.9812 | 0.9144 | 331 | 946 | 967 | 988 |
| 600 | 0.3048 | 0.6096 | 306 | 870 | 891 | 912 |
| 600 | 1.1430 | 0.6096 | 317 | 877 | 898 | 919 |
| 600 | 1.9812 | 0.6096 | 328 | 884 | 905 | 926 |
| 600 | 0.3048 | 0.9144 | 310 | 933 | 954 | 975 |
| 600 | 1.1430 | 0.9144 | 321 | 940 | 961 | 982 |
| 600 | 1.9812 | 0.9144 | 332 | 947 | 968 | 989 |
| 1000 | 0.3048 | 0.9144 | 404 | 1051 | 1054 | 1057 |
| 1000 | 1.1430 | 0.9144 | 400 | 1052 | 1055 | 1058 |

OBSTRUCTED PLUME FIRE MODELING RESULTS

Table E-10
Index to Obstructed and Unobstructed Simulation Numbers

| HRR (kW) | Source Height (m) | Source Diameter (m) | BASE_# (Unobstructed Plume) | OBST_# (Top Plate Only) | ARCH_# (Top Plate + 2 Walls) | THREEWALL_# (Top Plate + 3 Walls) |
|---------------------|----------------------------------|------------------------------------|--|--|---|--|
| 1000 | 1.9812 | 0.9144 | 401 | 1053 | 1056 | 1059 |
| 1000 | 0.3048 | 1.2192 | 405 | 1060 | 1063 | 1066 |
| 1000 | 1.1430 | 1.2192 | 402 | 1061 | 1064 | 1067 |
| 1000 | 1.9812 | 1.2192 | 403 | 1062 | 1065 | 1068 |

Index to Opening Sensitivity Simulation Numbers

Table E-11
Index to Opening Sensitivity Simulation Numbers

| HRR (KW) | OPENING (%) | OBST_# | ARCH_# | THREEWALL_# |
|----------|-------------|--------|--------|-------------|
| 200 | 14 | 1106 | 1107 | 1108 |
| 600 | 12 | 1115 | 1116 | 1117 |
| 200 | 10 | 1103 | 1104 | 1105 |
| 600 | 10 | 1112 | 1113 | 1114 |
| 200 | 6.5 | 1100 | 1101 | 1102 |
| 600 | 7 | 1109 | 1110 | 1111 |