Table C-32. Emergency Fire Pump Operating Parameters

Parameter	Value	Units
Fuel	Diesel	
Maximum Power Output[1]	224	kW
Maximum Power Output[1]	300	hp
Potential Operation	500	hr/yr
Power Conversion[2]	7,000	Btu/hp-hr
Maximum Heat Input[3]	2.10	MMBtu/hr

1. Maximum power output based on regulatory requirements.
2. Conversion factor for diesel fuel as noted in AP-42, Section 3.3, Table 3.3-1 footnote.
3. Calculated as Power Conversion (Btu/hp-hr) * Power Output (hp) / 10^6 (Btu/MMBtu)

Table C-33. Emergency Fire Pump Potential Emissions

Pollutant	Emission Factor[1] (lb/hp-hr)	Emission Factor[1] (lb/MMBtu)	Potential Emissions[5,6] (lb/hr)	Potential Emissions[5,6] (tpy)
NO_X	3.10E-02	4.43	9.30	2.33
VOC	2.47E-03	0.35	0.74	0.19
CO	6.68E-03	0.95	2.00	0.50
Filterable PM	2.20E-03	0.31	0.66	0.17
Total PM[2]	2.20E-03	0.31	0.66	0.17
Total PM_{10}[2]	2.20E-03	0.31	0.66	0.17
Total $PM_{2.5}$[2]	2.20E-03	0.31	0.66	0.17
SO_2	2.05E-03	0.29	0.62	0.15
CO_2	1.15	164.3	345.00	86.25
CH_4[3]	4.63E-05	6.61E-03	1.39E-02	3.47E-03
N_2O[3]	9.26E-06	1.32E-03	2.78E-03	6.94E-04
CO_2e[4]	1.15	164.8	346.18	86.54
Acetaldehyde	5.37E-06	7.67E-04	1.61E-03	4.03E-04
Acrolein	6.48E-07	9.25E-05	1.94E-04	4.86E-05
Benzene	6.53E-06	9.33E-04	1.96E-03	4.90E-04
Formaldehyde	8.26E-06	1.18E-03	2.48E-03	6.20E-04
Toluene	2.86E-06	4.09E-04	8.59E-04	2.15E-04
Xylene (o)	2.00E-06	2.85E-04	5.99E-04	1.50E-04
Propylene	1.81E-05	2.58E-03	5.42E-03	1.35E-03
1,3-Butadiene	2.74E-07	3.91E-05	8.21E-05	2.05E-05
Naphthalene	5.94E-07	8.48E-05	1.78E-04	4.45E-05
Acenaphthylene	3.54E-08	5.06E-06	1.06E-05	2.66E-06
Acenaphthene	9.94E-09	1.42E-06	2.98E-06	7.46E-07
Fluorene	2.04E-07	2.92E-05	6.13E-05	1.53E-05
Phenanthrene	2.06E-07	2.94E-05	6.17E-05	1.54E-05
Anthracene	1.31E-08	1.87E-06	3.93E-06	9.82E-07
Fluoranthene	5.33E-08	7.61E-06	1.60E-05	4.00E-06
Pyrene	3.35E-08	4.78E-06	1.00E-05	2.51E-06
Benzo(a)anthracene	1.18E-08	1.68E-06	3.53E-06	8.82E-07
Chrysene	2.47E-09	3.53E-07	7.41E-07	1.85E-07
Benzo(b)fluoranthene	6.94E-10	9.91E-08	2.08E-07	5.20E-08
Benzo(k)fluoranthene	1.09E-09	1.55E-07	3.26E-07	8.14E-08
Benzo(a)pyrene	1.32E-09	1.88E-07	3.95E-07	9.87E-08
Indeno(1,2,3-cd)pyrene	2.63E-09	3.75E-07	7.88E-07	1.97E-07
Dibenzo(a,h)anthracene	4.08E-09	5.83E-07	1.22E-06	3.06E-07
Benzo(g,h,i)perylene	3.42E-09	4.89E-07	1.03E-06	2.57E-07
			Total HAP:	3.39E-03

1. Emission factors from AP-42 Section 3.3 (Gasoline and Diesel Industrial Engines),
Table 3.3-1 and 3.3-2 (10/96).
2. All PM is assumed to have a diameter of less than one micron. Additionally, there is no
CPM factor available; thus, PM = PM_{10} = $PM_{2.5}$.
3. CH_4 and N_2O factors are from 40 CFR Part 98, Table C-2 for petroleum fuels.
4 CO_2e is calculated using Global Warming Potentials (GWPs) from 40 CFR Part 98,
Subpart A, Table A-1 effective January 1, 2014. GWPs used for CO_2, CH_4, and N_2O are

CO_2	1
CH_4	25
N_2O	298

5. Short-term emissions are calculated as follows:
Emissions (lb/hr) = Emission Factor (lb/hp-hr) * Engine Capacity (hp).
6. Annual emissions are calculated as follows:
Annual Emissions (tpy) = Hourly Emissions (lb/hr) * Annual Operation (hr/yr) / 2,000
(lb/ton).