Enclosure 20 to
LTR-RAC-20-94
Date: December 18, 2020

Enclosure 20

Response to Request for Additional Information

May 2019 air permit renewal application Table 4 – Emission Calculations for Scrubber

Table 4 – Emission Calculations for Scrubbers

Table 4 - Emission Calculations for Scrubbers
Westinghouse Electric Company LLC
Hopkins, South Carolina
prepared by GEL Engineering, LLC, May 30, 2019

Source	Pollutant	A Emission Rate from February 2019 Engineering Testing (lbs/hr)[1]	B Conservatism Factor[2]	C Hourly Emissions Including Conservatism Factor (lbs/hr)	D Maximum Annual Emissions Including Conservatism Factor (tons/yr)
S-4025 Scrubber	Antimony	3.15E-06	5	1.58E-05	6.90E-05
	Arsenic	3.29E-06	5	1.65E-05	7.21E-05
	Beryllium	< 7.23E-07	5	3.62E-06	1.58E-05
	Cadmium	9.33E-05	5	4.67E-04	2.04E-03
	Chromium	1.09E-05	5	5.45E-05	2.39E-04
	Cobalt	2.98E-06	5	1.49E-05	6.53E-05
	Manganese	1.90E-05	5	9.50E-05	4.16E-04
	Nickel	1.43E-04	5	7.15E-04	3.13E-03
	Phosphorus	5.32E-04	5	2.66E-03	1.17E-02
	Selenium	6.26E-05	5	3.13E-04	1.37E-03
	Hydrogen Fluoride	0.0093	5	0.0465	0.2037
	Nitric Acid	0.0654	5	0.3270	1.4323
	Hydrochloric Acid	0.0075	5	0.0375	0.1643
	Sulfuric Acid	0.0285	5	0.1425	0.6242
	Lead	1.13E-05	5	5.65E-05	2.47E-04
S-1030 Scrubber	Hydrogen Fluoride	0.0020	5	0.0100	0.0438
	Nitric Acid	0.0100	5	0.0500	0.2190
	NOx	0.12	3	0.36	1.58
S-958 Scrubber	Hydrogen Fluoride	0.0008	5	0.0040	0.0175
	Nitric Acid	0.0374	5	0.1870	0.8191
	NOx	1.76	2	3.52	15.42
S-1190 Scrubber	Hydrogen Fluoride	0.0009	5	0.0045	0.0197
	Nitric Acid	0.0022	5	0.0110	0.0482
S-2A/2B Scrubber	Hydrogen Fluoride	0.0006	5	0.0030	0.0131
	Nitric Acid	0.0014	5	0.0070	0.0307
S-1008 Scrubber	Hydrogen Fluoride	0.0003	5	0.0015	0.0066
	Nitric Acid	0.0009	5	0.0045	0.0197

Footnotes:

[1] Please refer to *Report on Engineering Evaluation Testing*, CleanAir Project Number 13754, March 27, 2019. To provide conservatism in the emission calculations, this is the highest hourly rate from the three test runs (not the average hourly emission rate from the three runs).

[2] Allows for additional conservatism to account for the limited engineering test data set and potential process variation.

Example Calculations:

$$\boxed{A}\ \frac{\text{lbs}}{\text{hour}}\ \textit{from source test}\ \times\ \boxed{B}\ \text{conservatism factor}\ =$$

$$\boxed{C}\ \frac{\text{lbs emissions}}{\text{hour}}\ \textit{including conservatism factor}$$

$$\boxed{C}\ \frac{\text{lbs emissions}}{\text{hour}}\ \textit{including conservatism factor}\ \times\ \frac{8760\ \text{hours}}{\text{year}}\ \times\ \frac{1\ \text{ton}}{2000\ \text{lbs}}\ =$$

$$\boxed{D}\ \frac{\text{tons emissions}}{\text{year}}\ \textit{including conservatism factor}$$