

3.7 Fire Water Pump Engine

Diesel combustion in the emergency fire water pump engine result in emissions of CO, NO_x, total PM/PM₁₀/PM_{2.5}, SO₂, VOC, GHGs, and HAP. The engine criteria pollutant emissions calculations are based on NSPS Subpart IIII limitations for several criteria pollutants (PM and NO_x) and AP-42 Section 3.3 (VOC, CO, HAP, CO₂).² Note that total PM₁₀ and total PM_{2.5} are assumed to be equal to total PM for the engine. SO₂ emissions are based on a maximum fuel sulfur content of 15 ppm by weight (as required by NSPS Subpart IIII beginning October 1, 2010). CH₄ and N₂O emission factors were calculated using emission factors for diesel fuel from 40 CFR 98, Subpart C, Table C-2. Emissions of GHG in the form of CO_{2e} were calculated by multiplying each GHG pollutant by its respective global warming potential from 40 CFR Part 98, Subpart A, Table A-1. A maximum operating schedule of 500 hours per year is assumed for estimating potential emissions from the emergency fire pump engine.³

3.8 Auxiliary Natural Gas Equipment

Small natural gas-fired burners will be used to control tar build-up in the ducting. A natural gas-fired RCO will be used for control of emissions from the green hammermill, dry hammermill, pellet mills, and pellet coolers. Emissions are quantified using the natural gas combustion emission factors from AP-42 Section 1.4.

Emissions from the tar buildup control burner are routed to the RTO for further emission control. Both the RTO and RCO are assumed to control VOC with 95% efficiency and CO with 50% efficiency. For the organic HAP emission factors, a 95% control efficiency is applied to account for routing to the RTO and RCO units. Emissions of GHG from natural gas combustion in the form of CO_{2e} were calculated by multiplying each GHG pollutant by its respective global warming potential pursuant to 40 CFR Part 98.

3.9 Facility-Wide Potential Emissions

Table 3-1 includes the facility-wide controlled criteria pollutant, GHG, and HAP emissions. Detailed emissions calculations are included in Appendix C of the permit application. The potential emissions in Table 3-1 include emissions with fugitives, which are compared to the Title V Major Source thresholds, and emissions without fugitives, which are compared to the PSD Major Source thresholds. Facility-wide emissions can exclude fugitives from the PSD major source determination as wood pellet production operation is not on the list of 28 categories with a lower major source threshold for criteria pollutants, which requires subject source categories to include fugitive emissions for permitting applicability determinations.

² U.S. EPA AP-42 Section 3.3, *Gasoline and Diesel Industrial Engines*. October 1996. <https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf>

³ Potential operation includes non-emergency service (readiness testing and maintenance as recommended by the manufacturer) and emergency usage.