**EVALUATION REPORT**
**Pleasanton Surgical Center**
**Application #5776 Plant #14649**
**Pleasanton, CA**

## I. BACKGROUND

Pleasanton Surgical Center has applied for an A/C for its standby diesel generator. The engine has not been installed yet though they have purchased the engine. The generator meets BACT for the engine. The engine is a Cummins Emergency Diesel engine Model B3.3 ID#206800; 82 BHP. The generator would run for 24 hours per day if a blackout were to occur. The following source is requesting an A/C:

**S-1 Cummins Model B3.3 ID# 206800; Diesel Emergency Generator, 61 KW (82 BHP) 100 hours annually**

## II. EMISSION CALCULATIONS

Emission factors provided by Cummins Diesel Generators meet BACT(2) for IC Engines. Thus, Nox, CO, PM-10 and POC emissions are based on Manufacturer factors.

| | Manufacturer | BACT(2) |
|---|---|---|
| NOx | 5.45 g/bhp-hr | 6.9 g/bhp-hr |
| CO | 0.82 g/bhp-hr | 2.75 g/bhp-hr |
| POC | 0.45 g/bhp-hr | 1.5 g/bhp-hr |
| PM10-diesel | 0.13 g/bhp-hr | 0.1 g/bhp-hr |

Hours of Operation = 100 hr/yr
Diesel Heat Capacity = 19,300 BTU/lb
Fuel Consumption = 4.1 gal/hr
Estimated Fuel Usage = 4.1 gal/hr X 100 hr/yr = 410 gal/yr
Heat Input = 4.1 gal/hr X 7.1 lb/gal X 19,300 Btu/lb = 5.618E5 Btu/hr

Emission Calculations per source:
NOx = 5.45 g/bhp-hr (82 hp)(1 lb/454 g)(100 hr/yr) = 98.36 lb/yr or 0.0492 TPY
CO = 0.82 g/bhp-hr (82 hp)(1 lb/454 g)(100 hr/yr) = 14.82 lb/yr or 0.0074 TPY
POC = 0.45 g/bhp-hr (82 hp)(1 lb/454 g)(100 hr/yr) = 8.08 lb/yr or 0.0040 TPY
PM10 = 0.13 g/bhp-hr (82 hp)(1 lb/454 g)(100 hr/yr) = 2.29 lb/yr or 0.0011 TPY

SO2- Calculation: see spreadsheet

## III. PLANT CUMULATIVE INCREASE AFTER 4/5/91

| | Current Ton/yr | New Ton/yr | New Total Lbs/yr | New Total Tons/yr |
|---|---|---|---|---|
| **POC =** | 0.00 | 0.0040 | 8.08 | 0.0040 |
| **$NO_x$ =** | 0.00 | 0.0492 | 98.36 | 0.0492 |
| **$SO_2$ =** | 0.00 | 0.0018 | 3.61 | 0.0018 |
| **CO =** | 0.00 | 0.0074 | 14.82 | 0.0074 |
| **NPOC =** | 0.00 | 0.0000 | 0.00 | 0.0000 |
| **TSP =** | 0.00 | 0.0011 | 2.29 | 0.0011 |
| **$PM_{10}$ =** | 0.00 | 0.0011 | 2.29 | 0.0011 |

## IV. TOXIC SCREENING ANALYSIS

This application is subject to a toxic review because the source triggers a Toxics Risk Screening. The facility does have diesel particulate emissions greater than the toxic trigger level.

| Toxic Pollutant Emitted | Emission Rate (lb/yr) | Risk Screening Trigger (lb/yr) |
|---|---|---|
| PM 10 (Diesel Particulate) | 2.29 | 0.6 |

## V. BEST AVAILABLE CONTROL TECHNOLOGY

Source S-1 from this facility triggers BACT since the emission rate of NOX is each greater than 10 pounds of emission per highest day per source per Regulation 2-2-301. The use of a Selective Catalyst Unit to meet BACT(1) is not required because it is not cost effective for emergency generators on a standby basis. Source S-1 will comply with BACT(2) because it is conditioned to demonstrate compliance with manufacturer's guidelines.

## VI. OFFSETS

Offsets are not required since the facility's emissions are much less than 15 ton/yr per Regulation 2-2-302.

## VII. STATEMENT OF COMPLIANCE

Source S-1 of this application is fired with liquid fuel and therefore is not subject to Regulation 9, Rule 8 ("NOx and CO from Stationary Internal Combustion Engines"). The engine is subject to the SO2 limitations of 9-1-301 (ground-level concentration) and 9-1-304 (0.5% by weight in fuel). Compliance with both of these requirements is very likely since diesel fuel with a 0.05% by weight sulfur is mandated for use in California. Like all sources, S-1 is subject to Regulation 6 ("Particulate and Visible Emissions"). This engine is not expected to produce visible emissions or fallout in violation of this regulation and it will be assumed to be in compliance with Regulation 6 pending a regular inspection.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.3. This project is within 1,000 ft from the nearest public school and therefore is subject to the public notification requirements of Regulation 2-1-412.

A toxic risk screening analysis is required because the source was installed after May 2000 and it was determined with a PM-10 of 0.13 g/BHP-hr the risk is less than 10 in a million. The level of risk has been determined as acceptable under the risk management policy for diesel-fueled reciprocating engines that meet the TBACT requirement (PM-10 emissions less than 0.15 g/hp-hr). The level of risk for students at the Amador Valley High School that is within a quarter of a mile is 0.10 in a million. For engines that meet TBACT requirements, the maximum acceptable cancer risk for the project is 10 in a million. The facility will operate the source for no more than 100 hours in a 12-month period.

Offsets, PSD, NSPS, and NESHAPS are not triggered.

## VIII. CONDITIONS

**S-1 Cummins Model B3.3 ID# 206800; Diesel Emergency Generator, 61 KW (82 BHP) 100 hours annually**

1. The source known as S-1 engine is subject to the requirements of Regulation 9, Rule 1 ("Sulfur Dioxide"), and the requirements of Regulation 6 ("Particulate and Visible Emissions"). The Emergency Generator known as (S-1) shall be fired exclusively on diesel fuel having a sulfur content no greater than 0.05% by weight.
   [Regulation 9, Rule 1; Regulation 6]

2. Hours of Operation

   The emergency standby engine (S-1) shall only be operated to mitigate emergency conditions or for reliability-related activities. Operation for reliability-related activities shall not exceed 100 hours per source in any calendar year. Operation while mitigating emergency conditions is unlimited. (Basis: Reg 9-8-330)

3. Emergency Conditions is defined as any of the following: (Basis: Reg 9-8-231)

   a. Loss of regular natural gas supply.
   b. Failure of regular power supply.
   c. Flood mitigation.
   d. Sewage overflow mitigation.
   e. Fire.
   f. Failure of a primary motor, but only for such time as needed to repair or replace the primary motor.

4. Reliability-related activities is defined as any of the following: (Basis: Reg 9-8-232)

   a. Operation of an emergency standby engine to test its ability to perform for an emergency use, or
   b. Operation of an emergency standby engine during maintenance of a primary motor.

5. The emergency standby engine shall be equipped with either: (Basis: Reg 9-8-530)

   a. non-resettable totalizing meter that measures and records the hours of operation for the engine, or
   b. a non-resettable fuel usage meter.

6. Records

   The following monthly records shall be maintained in a District-approved log for at least 2 years and shall be made available for District inspection upon request.
   (Basis: Reg 9-8-530, 1-441)

   a. Total hours of operation.
   b. Hours of operation under emergency conditions and a description of the nature of each emergency condition.
   c. Fuel usage.

## IX. RECOMMENDATION

Recommend that an A/C be issued for the following equipment:

**S-1 Cummins Model B3.3 ID# 206800; Diesel Emergency Generator, 61 KW (82 BHP) 100 hours annually**

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