

ENGINEERING EVALUATION REPORT
SBC
PLANT NUMBER 15237
APPLICATION NUMBER 7095

Background:

SBC has applied to obtain an Authority to Construct and a Permit to Operate a standby engine-generator at their facility in Tiburon. The engine-generator, a source of toxic air contaminant (diesel soot) will be located within 1000 feet of the nearest school. The engine-generator is subject to a health risk screening analysis, and public notice requirements of Regulation 2-1-412.

A health risk screening analysis was performed (5/23/03), and it was determined that engine-generator operation of 20 hours/yr for testing and maintenance will result in an acceptable cancer risk of 0.64 in a million.

The description of the engine-generator covered by this application is as follows:

**S-1 Emergency Standby Diesel Engine-Generator, CUMMINS M11-G2,
380 hp, 661 cu.in., serial #35072926, 2.253 MMBTU/hr.**

Emission Calculations:

Emission factors are taken from ARB certificate for NO_x, CO, POC, and PM₁₀. SO₂ emission factor is based on 0.05%wt. Sulfur limit for fuel. The annual operating limit of 20 hours per year excluding operation during emergency is used. This limit is based on toxic risk screening analysis results and Regulation 9-8-330.2.

PM₁₀ = TSP (Diesel Particulate) = 0.1 g/bhp-hr
CO = 1.2 g/bhp-hr
NO_x = 6.6 g/bhp-hr
POC (HC) = 0.2 g/bhp-hr
SO_x = 0.056 lb/MMBTU

PM₁₀ (Diesel Particulate)

PM₁₀ = (0.1 g/bhp-hr)(380 HP)(1 lb/453.6 g)(20 hrs/yr) = 1.675 lb/yr
PM₁₀ = 0.0008 TPY

Carbon Monoxide (CO)

CO = (1.2. g/bhp-hr)(380 HP)(1 lb/453.6 g)(20 hrs/yr) = 20.1 lb/yr
CO = 0.01 TPY

Nitrogen Oxide (NO_x)

NO_x = (6.6 g/bhp-hr)(380 HP)(1 lb/453.6 g)(20 hrs/yr) = 110.55 lb/yr
NO_x = 0.055 TPY

Precursor Organic Compound (POC)

$$\text{POC} = (0.2 \text{ g/bhp-hr})(380 \text{ HP})(1 \text{ lb}/453.6 \text{ g})(20 \text{ hrs/yr}) = 3.35 \text{ lb/yr}$$

POC = 0.0017 TPY

Sulfur Dioxide (SOx)

$$\text{SOx} = (0.056 \text{ lb/MMBTU})(2.253 \text{ MMBTU/hr})(20 \text{ hrs/yr}) = 2.52 \text{ lb/yr}$$

SOx = 0.0013 TPY

PLANT CUMULATIVE INCREASE:

PM10 = 0.0008 tpy

CO = 0.01 tpy

NOx = 0.055 tpy

POC = 0.0017 tpy

SOx = 0.0013 tpy

TOXICS EMISSIONS AND RISK SCREENING ANALYSIS:

Diesel particulates are considered toxic and emissions estimated for 20 hours of operation from the generator, S-1, are greater than the toxic trigger level (0.64 lb/yr), therefore an Air Toxics Risk Screening is required. According to risk screening analysis, the cancer risk to the maximally exposed residential receptor is 0.64E-6 and the cancer risk to receptors at Reed Elementary School is 0.07E-6 (Ref; Interoffice toxic memo dated 5/23/03). These levels of risk are acceptable under the District's risk management policy.

Statement of Compliance:

The engine-generator will comply with the requirements of Regulation 9-1-304. Sulfur content of diesel is less than 0.5%.

The engine-generator will comply with the requirements of Regulation 9-8-330 (hours of operations) and 9-8-530 (monitoring and record keeping). Permit condition includes these requirements.

Regulation 10 - New Source Performance Standard, and Regulation 11 - Hazardous Pollutants requirements are not triggered.

Because this application is ministerial (Permit Handbook Chapter 2.3), the requirements of the California Environmental Quality Act (CEQA) are not triggered.

The source is subject to the public notification requirements of Regulation 2-1-412 because there is a school within 1000 feet of the source.

Permit Conditions

S-1, Emergency Standby Diesel Engine-Generator:

1. The owner/operator shall operate S-1 for no more than 20 hours in any 12 month period for the purpose of reliability testing or in anticipation of imminent emergency condition. Emergency condition is failure of a regular power supply.
[basis: Regulation 9-8-330.2; Toxic risk screening analysis]
2. The owner/operator may operate S-1 for an unlimited amount of time for the purpose of providing emergency standby power during emergency condition (as defined in Part 1). [basis: Regulation 9-8-330.1]
3. The owner/operator shall use a non-resettable totalizing counter to record hours of operation for the generator, S-1. [basis: Regulation 9-8-530]
4. The owner/operator shall use only diesel fuel with a sulfur content less than 0.05% by weight. [basis: Regulation 9-1-304]
5. The owner/operator shall maintain the following monthly records in a District-approved log for at least 2 years and shall make it available to the District staff upon request:
 - 1) total hours of operation for S-1.
 - 2) hours of operation under emergency condition for S-1 and a description of the nature of the emergency condition
 - 3) fuel usage at S-1[basis :Regulation 9-8-530]

Recommendations:

It is recommended that an Authority to Construct may be issued to SBC. for the source described in the background section of this report.

Exemptions:

None.

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