

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATION

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PERMIT TO CONSTRUCT/OPERATE EVALUATION

Applicant name: Allergan

(FACILITY ID# 800289)

Mailing address: 2525 Dupont Dr.
Irvine, Ca 92623

Equipment Location: Tower 2
2525 Dupont Dr.
Irvine, Ca 92623

EQUIPMENT DESCRIPTIONS:

Application No. 484615

INTERNAL COMBUSTION ENGINE, CUMMINS, MODEL NO. QSX15-G9, DIESEL FUELED, 6 CYLINDERS, 755 BHP. TURBOCHARGED AND AFTERCOOLED, DRIVING AN EMERGENCY ELECTRICAL GENERATOR

Application No. 484928

DE MINIMIS SIGNIFICANT PERMIT REVISION APPLICATION.

Application No. 446180

MINOR PERMIT REVISION.

PERMIT CONDITIONS: (SEE TITLE V PERMIT)

BACKGROUND:

On 07/12/2005, the applicant filed A/N 446180 to obtain permits to operate and add two Caterpillar emergency engines to their Title V permit, however, the associated engine permit applications were rejected since we deemed both engines were incorrectly submitted as "Administrative Changes." The A/N 446180 further requested to remove Permit No. F37153 (A/N 381030) from the Title V Permit since it was never installed at the facility or operated by Allergan. In addition, the facility requested the addition of Permit No. F69364 (A/N 430184) since it was never included in their Title V Permit. The last request on this application was to update the responsible official under Section A of their Title V Permit. All requests were accepted except the request for additions of two Caterpillar emergency engines to their Title V Permit since changing the manufacturer name and engine type shall not be considered an administrative change under AQMD policy.

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On 06/25/2008, the applicant filed A/N 484615 to obtain an end-user registration permit to construct/operate for the engine, but they were notified that the reduced fees are not valid for Title V facilities. This engine is identical to the Certified engine under A/N 455700. According to the AQMD's list of Certified Engines, this engine model's certification is good until 12/31/2010. This new engine is expected to be installed before the end of 2008 calendar year. It is to replace an existing 685 bhp emergency IC Engine currently operating under P/O D38381, A/N 210357.

On 07/10/2008, the applicant filed the associated Title V Revision application under A/N 484928 for the ICE that was filed on 06/25/2008 under A/N 484615. Accordingly, this application did not qualify for 2007-2008 fees since it was filed after 07/01/2008 thus 2008-2009 fees were applied.

Since 2004, there are no Notices of Violation and 2 Notices to Comply (NC). The NC's were issued for missing registration of a boiler, Rule 1415 non submittal and to provide MSDS. None of the NC's issued are related to any other permitted Emergency ICE's or have suggested this equipment will create a nuisance problem or operate in violation of any District rules or conditions on the permit.

PROCESS DESCRIPTION:

This proposed IC engine/generator is to be used for the generation of electrical power during a power outage. The IC engine/generator will not be operated under an interruptible service contract.

EMMISSION EVALUATION:

APPLICATION NO. 484615

Uncontrolled Emissions = Controlled Emissions

ROG, NO_x, CO, PM₁₀, and SO_x will be emitted from the combustion of diesel fuel in this proposed engine when the equipment is periodically tested and during emergency use. The emission factors that were used to calculate emissions for each pollutant according to this specific device are from Manufacturer's specifications and were also listed and verified on the AQMD Certified ICE Emergency Generator List.

NOX:

$$\begin{aligned} 4.59 \text{ gr/bhp-hr} \times 755 \text{ bhp} &= 3465 \text{ gr/hr} \\ &= 7.62 \text{ lbs/hr} \end{aligned}$$

$$\text{Annual Emissions} = 7.62 \text{ lbs/hr} \times (1 \text{ hrs/1 day}) \times (1 \text{ day/ week}) \times (52 \text{ weeks/year}) = 396.24 \text{ lbs/yr}$$

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30 day average = $[7.62 \text{ lbs/hr} \times (50 \text{ hrs/year})] / [(12 \text{ months/year}) \times (30 \text{ days/month})] = 1.1 \text{ lbs/day}$

CO:

$$\begin{aligned} 0.45 \text{ gr/bhp-hr} \times 755 \text{ bhp} &= 340 \text{ gr/hr} \\ &= 0.75 \text{ lbs/hr} \end{aligned}$$

Annual Emissions = $.75 \text{ lbs/hr} \times (1 \text{ hrs/1 day}) \times (1 \text{ day/ week}) \times (52 \text{ weeks/year}) = 39 \text{ lbs/yr}$

30 day average = $[.75 \text{ lbs/hr} \times (50 \text{ hrs/year})] / [(12 \text{ months/year}) \times (30 \text{ days/month})] = 0.1 \text{ lbs/day}$

ROG:

$$\begin{aligned} .11 \text{ gr/bhp-hr} \times 755 \text{ bhp} &= 83 \text{ gr/hr} \\ &= 0.18 \text{ lbs/hr} \end{aligned}$$

Annual Emissions = $.18 \text{ lbs/hr} \times (1 \text{ hrs/1 day}) \times (1 \text{ day/ week}) \times (52 \text{ weeks/year}) = 9.36 \text{ lbs/year}$

30 day average = $[.18 \text{ lbs/hr} \times (50 \text{ hrs/year})] / [(12 \text{ months/year}) \times (30 \text{ days/month})] = .03 \text{ lbs/day}$

SOX:

$$\begin{aligned} .184 \text{ gr/bhp-hr} \times 755 \text{ bhp} &= 139 \text{ gr/hr} \\ &= .31 \text{ lbs/hr} \end{aligned}$$

Annual Emissions = $.31 \text{ lbs/hr} \times (1 \text{ hrs/1 day}) \times (1 \text{ day/ week}) \times (52 \text{ weeks/year}) = 16.12 \text{ lbs/year}$

30 day average = $[.31 \text{ lbs/hr} \times (50 \text{ hrs/year})] / [(12 \text{ months/year}) \times (30 \text{ days/month})] = .04 \text{ lbs/day}$

PM10:

$$\begin{aligned} .075 \text{ gr/bhp-hr} \times 755 \text{ bhp} &= 56.6 \text{ gr/hr} \\ &= .12 \text{ lbs/hr} \end{aligned}$$

Annual Emissions = $.12 \text{ lbs/hr} \times (1 \text{ hrs/1 day}) \times (1 \text{ day/ week}) \times (52 \text{ weeks/year}) = 6.24 \text{ lbs/year}$

30 day average = $[.12 \text{ lbs/hr} \times (50 \text{ hrs/year})] / [(12 \text{ months/year}) \times (30 \text{ days/month})] = .02 \text{ lbs/day}$

RULES EVALUATION:

Rule 212 - Standard for Approving Permits

Paragraph 212(c)(1) Requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of

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a school. According to the website mapquest.com the nearest school, Newport Montessori, is beyond 1 mile of Allergan's property line. A 30-Day Public Notice is not required under this paragraph.

Paragraph 212(c)(2) The equipment will not result in on-site emission increasing exceeding the daily maximum emissions as specified in the table in Rule 212(g). Therefore, a 30-day public notice period will not be required under this paragraph.

Paragraph 212(c)(3) Public notice will not be required under this paragraph. See Rule 1401 evaluation section.

Rule 401 - Visible Emission: No visible emission is expected if the equipment is well maintained and properly operated. Therefore, compliance is expected.

Rule 402 - Public Nuisance: Operation of this equipment is on a minimal schedule and is expected to be well maintained, therefore is not expected to create any nuisance problems.

Rule 404 - Particulate Matter Concentration: This Cummins IC Engine (755 bhp at 1800 rpm) has a maximum exhaust rate of approximately 5300 cfm. The corresponding limit in TABLE 404(a) is .100 grains per cubic foot (4.5 lbs PM/hr). Calculated concentration of PM emissions is less than this limit set by Rule 404. Therefore, compliance is expected.

Rule 431.2 - Sulfur Content of Liquid Fuels: The Title V Permit Facility Wide Condition states that on June 1, 2004 and thereafter, the operator shall only use diesel fuel with a sulfur content that does not exceed 15 ppm by weight.

Rule 1110.2 - Emissions from Gaseous – and Liquid – Fueled Engines: The emissions from this IC Engine are exempt from the NOx and CO limits of this Rule because the IC Engine will be used to drive an emergency electric generator, and will be operated less than 200 hours per year.

Rule 1303 - BACT FOR EMERGENCY ICE – Equipment is expected to meet all BACT requirements.

Subcategory/	Rating/ Size	NOx + NMHC2)	SOx	CO	PM
Compression -Ignition3) 4)	≥750 HP	Tier 2 (After 7/13/2006): (4.8 grams/bhp- hr) (7-14-2006)	On or after June 1, 2004 the user may only purchase diesel fuel with a sulfur content no greater	Tier 2 (After 7/13/2006): (2.6 grams/bhp- hr) (7-14-2006)	Tier 2 (After 7/13/2006): (0.15 grams/bhp-hr) (7-14-2006)

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			than 0.0015% by weight (Rule 431.2). (6-6-2003)		
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Rule 1304(a)(4) –Modeling and Offsets: Equipment is exempt from offsets and modeling providing that it does not operate more than 200 hours per year as evidenced by an engine-hour meter or equivalent method.

Rule 1401- New Source Review of Toxic Air Contaminants: No risk assessment is required because Emergency IC Engines operated less than or equal to 200 hours per year are exempt under section 1401(g)(1)(F).

Rule 1470 – Requirements for Stationary Diesel Fueled Internal Combustion and Other Compression Ignition Engines: Since this IC Engine is located more than 1,000 feet from a school, there will be no prohibition of operation during normal school hours. The maximum number of operating hours will be 50 hours per year for maintenance and testing, and no more than 200 hours per year total. A log will be maintained to demonstrate compliance. Another condition will limit the maximum sulfur concentration in the diesel fuel to 15 ppm by weight. Compliance is expected.

Reg XXX – Title V Permits: Applications for de minimis significant permit revisions or minor permit revisions require EPA 45-day review.

CONCLUSIONS AND RECOMMENDATIONS:

Based on the evaluation contained herein, the subject equipment will comply with all of the District’s rules and regulations; therefore, I recommend a Permit to Construct/Operate be issued to this equipment. The A/N 446180 further requested to remove Permit No. F37153 from the Title V Permit since it was never installed at the facility or operated by Allergan. In addition, the facility requested the addition of Permit No. F69364 since it was never included in the issuance of their Title V Permit. The last request was to update the responsible official under Section A of their Title V Permit. I recommend the approval of these requests and to propose the revisions to the EPA for 45-day review.