

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING and COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 6	PAGE 1
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	PROCESSED BY T. Iwata	CHECKED BY

NASA/JPL
4800 Oak Grove Dr.
Pasadena, CA 91109
ID no.: 11887

EQUIPMENT DESCRIPTION:

A/N 497715: TITLE V PERMIT REVISION APPLICATION

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process 1: INTERNAL COMBUSTION EQUIPMENT					
System 19: BUILDING 224					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, CATERPILLAR, MODEL NO. 3304B, WITH TURBOCHARGER, 186 BHP A/N 497713	D14		NOX: PROCESS UNIT	NOX: 469 LBS/1000 GAL DIESEL (1); PM: RULE 404	C1.1 <u>D12.2</u> <u>E448.3</u> <u>H23.9</u> H23.11 K67.10

BACKGROUND:

NASA/JPL submitted application no. 497713 to relocate an emergency diesel-fueled internal combustion engine (device no. D14) from building no. 301 to building no. 224. Currently the engine is being used for emergency purposes in support of manned-space-flight operations. The applicant is proposing to use the engine to provide emergency electrical power to operate the facility Sewage Lift Station (pump driver for flood control in building no. 224). The engine was previously exempt from the *Diesel PM Standard and Hours of Operating Requirements* of Rule 1470 under (h)(16) which reads:

The requirements of paragraph (c)(1), subparagraphs (c)(2)(C) and (c)(3)(C), and paragraphs (c)(4) and (c)(5) do not apply to any stationary diesel-fueled CI engine used to power equipment that is owned by the National Aeronautics and Space Administration (NASA) and used solely at manned-space-flight facilities (launch, tracking, and landing sites), provided the Executive Officer approves this exemption in writing. This exemption only applies to diesel engines that power equipment which is maintained in the same configuration as similar equipment at all manned-space-flight facilities.

Since the engine will no longer fall under this exemption, its annual hours of operation for testing and maintenance will be restricted based on the PM emission rate of the engine. According to

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the engine's manufacturer spec sheet, the PM emission rate for this engine is 0.26 g/BHP-hr and the allowed run time for testing and maintenance purposes is 30 hours per year per Rule 1470 (c)(3)(C). The engine is also restricted to annual runtime of less than 200 hours. Consequently, condition no. E448.3 is added to the engine and condition no. C1.1 is removed.

NASA/JPL is a Title V facility. A Title V renewal permit was issued to this facility on October 1, 2006. NASA/JPL has proposed to revise their Title V renewal permit (with application no. 497715) by relocating an emergency ICE from building no. 301 to building no. 224 (application no. 497713). This permit revision is considered as a "minor permit revision" to the Title V renewal permit, as described in the Regulation XXX evaluation.

PROCESS DESCRIPTION:

The stationary emergency diesel-fueled engine will be used to provide emergency electrical power to operate sewage pumps. Aside from emergency use, the engine will be operated no more than 30 hr/yr for testing and maintenance purposes.

EMISSIONS CALCULATIONS:

Hourly emissions will not differ from the emissions that were determined with the previous applications for the engine.

Hourly CO emissions = 1.06 lb/hr
Hourly NOx emissions = 3.92 lb/hr
Hourly PM10 emissions = 0.11 lb/hr
Hourly ROG emissions = 0.07 lb/hr
Hourly SOx emissions = 0.25 lb/hr

RULE ANALYSIS

RULE 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school. The facility is not located within 1,000 feet of the outer boundary of a school. The closest school is located over 1,700 feet from the facility.

RULE 212 (c)(2): This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums as specified by Rule 212(g). There will not be an emission increase with the proposed project.

RULE 212(c)(3): This section requires a public notice for all new or modified permit units with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in a

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cancer risk equal or greater than one in a million. There will not be a cancer risk from this project.

RULE 212(g): This section requires a public notice for all new or modified sources that result in emission increases exceeding any of the daily maximums as specified by Rule 212(g). There will not be an emission increase with the proposed project.

	Maximum Daily Emissions					
	ROG	NO_x	PM₁₀	SO₂	CO	Pb
Emission increase	0	0	0	0	0	0
MAX Limit (lb/day)	30	40	30	60	220	3
Compliance Status	Yes	Yes	Yes	Yes	Yes	Yes

RULES 401 & 402: AQMD database has no records of visible emissions or nuisance complaints against this facility. Compliance with these requirements is expected with the proper operation of the equipment.

Rule 1110.2: Per rule 1110.2(h)(2), emergency standby engines which have permit conditions limiting the operating time to 200 hours or less per year and are equipped with an elapsed operating time meter, are exempt from the emission limits requirements of this rule.

REG. XIII: The engines will be operated as previously permitted, in compliance with the requirements of this regulation.

RULE 1470: Since the engine will no longer fall under the exemption of Rule 1470 (h)(16), its annual hours of operation for testing and maintenance will be restricted based on the PM emission rate of the engine. The engine was designed to operate at a PM emission rate of 0.26 g/BHP-hr and the corresponding allowed run time for testing and maintenance purposes is 30 hours per year per Rule 1470 (c)(3)(C). The permit will limit maintenance and testing hours to 30 hours per year. Compliance is achieved.

RULE 1472: Although the engine is moving to another building at the facility, it remains grouped with the same two engines, D6 and D164, as before. Previously for this group, the residential index was 0.296 and the worker index was 0.203. The engine moves closer to the boundaries of the LA County Fire Department (5 meters) but remains 435 meters from the nearest residential receptor and 520 meters from the nearest school. The residential index is now 0.563 and the worker index is 0.208. Since the indexes are both less than 1, no adjustments are

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necessary to their Rule 1470 Compliance Plan. Compliance is achieved. (See application folder for spreadsheet.)

REGULATION XXX:

This facility is in the RECLAIM program. The proposed project is considered as a “minor permit revision” for RECLAIM pollutants, non-RECLAIM pollutants, and hazardous air pollutants (HAPs) to the RECLAIM/Title V permit for this facility. Rule 3000(b)(12) specifies that a “minor permit revision” includes, but is not limited to any Title V permit revision that:

- Rule 3000(b)(12)(A)(v) – does not result in an emission increase of any RECLAIM pollutant over the facility’s starting Allocation plus the non-tradeable Allocation, or higher Allocation amount which has previously undergone a significant permit revision process.
- Rule 3000(b)(12)(A)(vi) – does not result in an increase in emissions of a pollutant subject to Regulation XIII – New Source Review (non-RECLAIM pollutants) or a hazardous air pollutant (HAP).

The proposed project is not expected to result in an emission increase of any RECLAIM pollutant or an increase in emissions of a pollutant subject to Regulation XIII – New Source Review (non-RECLAIM pollutants) or a hazardous air pollutant (HAP), and therefore is considered as a “minor permit revision” pursuant to Rule 3000(b)(12)(A)(v) and Rule 3000(b)(12)(A)(vi).

This proposed project is the 3rd permit revision to the Title V renewal permit issued to this facility on October 1, 2006. The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued:

Revision	HAP	VOC	NO_x*	PM10	SO_x	CO
Previous Total	0	0	1	0	0	0
3 rd Permit Revision, change of condition Device no. D14	0	0	0	0	0	0
Total	0	0	1	0	0	0
Maximum Daily	30	30	40*	30	60	220

* RECLAIM pollutant, not subject to emission accumulation requirements

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RECOMMENDATION:

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “minor permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to the EPA for a 45-day review pursuant to Rule 3003(j). If the EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility.

Conditions:

D12.2 THE OPERATOR SHALL INSTALL AND MAINTAIN A(N) NON-RESETTABLE ELAPSED TIME METER TO ACCURATELY INDICATE THE ELAPSED OPERATING TIME OF THE ENGINE.

E448.3 THE OPERATOR SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

The engine shall not be operated more than 200 hours in any one year, which includes 30 hours in any one year for maintenance and testing.

Operation beyond the allotted time for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the utility distribution company has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage.

In the event as described in the paragraph above, the engine shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect.

This engine shall not be used as part of an interruptible service contract in which a facility receives a payment or reduced rates in return for reducing electric load on the grid when requested by the utility or the grid operator.

H23.9 THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT	RULE	RULE/SUBPART
SULFUR COMPOUNDS	DISTRICT RULE	431.2
PM	DISTRICT RULE	1470

K67.10 THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):

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An engine operating log shall be kept and maintained on file to record when this engine is started manually. The log shall list the date of operation, the timer reading in hours at the beginning and end of operation and the reason for operation.

By January 15th of each year, the operator shall total and record the total hours of operation (including hours for both manual operation and automatic operation) for the previous calendar year.

All records required by this permit shall be kept in a format that is acceptable to the District, shall be retained on the premises for at least five years and shall be made available to any District representative upon request.