



west virginia department of environmental protection

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ENGINEERING EVALUATION/FACT SHEET

B BACKGROUND INFORMATION

| | |
|--------------------|--|
| Application No.: | G60-C066 |
| Plant ID No.: | 057-00011 |
| Applicant: | Alliant Techsystems Operations LLC |
| Facility Name: | Allegany Ballistics Laboratory (ABL) |
| Location: | Rocket Center |
| NAICS Code: | 336415 |
| Application Type: | Construction |
| Received Date: | September 5, 2014 |
| Engineer Assigned: | Edward S. Andrews, P.E. |
| Fee Amount: | \$1,500.00 |
| Fee Deposit Date: | September 11, 2014 |
| Complete Date: | October 27, 2014 |
| Due Date: | December 26, 2014 |
| Applicant Ad Date: | September 24, 2014 |
| Newspaper: | News-Tribune |
| UTM's: | Easting: 686.5 km Northing: 4,381.2 km Zone: 17 |
| Description: | The application is for the installation of two emergency generators. |

Description of Change & Engines

The engines for these EDGs will be a Caterpillar CAT® 3456 ATAAC diesel engine with a power out rating of 670.5 horsepower (bhp) at 1,500 revolutions per minute (rpm) and a MTU Detroit Diesel, Inc. 16V 4000 G83 (T1638A36) diesel engine with a power output rating of 3,352 bhp at 1,800 rpm. The engine for EG-11 was manufactured prior to the engine manufacturer certification requirement under Part 60 and this engine is not required to be certified. As the manufacturer, MTU Detroit Diesel Inc. has certified this model engine to the emission standards of Part 60 as an emergency stationary engine, which has been issued with the following certificate and engine family numbers from U.S. EPA:

| Table #1 Manufacturer's Certification Numbers | | |
|---|------------------|-------------------------|
| Manufacturer | Caterpillar Inc. | MTU Detroit Diesel Inc. |
| Emission Source ID | EG-11 | EG-12 |
| Engine Model | C3456 | 2250-RXC6DT2 |
| Model Year of Engine | 2002 | 2008 |
| Certificate Number | N/A | MDD-NRCI-10-06 |
| Engine Family Number | N/A | AMDDL95.4XTR |

SITE INSPECTION

A site inspection was deemed unnecessary by the writer. The facility is already on the DAQ Enforcement's regular inspection list of sources.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from the proposed new generators are indicated in the following table.

| Table #2 – Emission from Emergency Generators | | | | |
|---|---------------|--------|-----------------|--------|
| Pollutant\Sources | EG-11 (C3456) | | EG-2 (MTU 2250) | |
| | lb/hr | tpy | lb/hr | tpy |
| Oxides of Nitrogen (NO _x) | 16.09 | 4.02 | 39.5 | 9.88 |
| Carbon Monoxide (CO) | 3.69 | 0.92 | 5.19 | 1.30 |
| Particulate Matter (PM)/ PM less than 10 microns (PM ₁₀)/ PM less than 2.5 microns (PM _{2.5}) | 0.47 | 0.12 | 0.36 | 0.09 |
| Sulfur Dioxide* (SO ₂) | 0.01 | <0.01 | 0.03 | <0.01 |
| Volatile Organic Compounds (VOCs) | 0.47 | 0.12 | 0.66 | 0.17 |
| Carbon Dioxide Equivalence (CO _{2e}) | 656.65 | 164.16 | 3,591.72 | 897.93 |

* - Sulfur dioxide emissions are based on using Ultra Low Sulfur Diesel (ULSD).

REGULATORY APPLICABILITY

The ABL as configured at the time of this submittal is classified as a major source under Prevention of Significant Deterioration (PSD), which is State Rule 45 CSR 14, and a Major Source for Hazardous Air Pollutants. The applicant must demonstrate that this project either does not trigger other permitting requirements or satisfies them within the application.

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PSD

Prevention of Significant Deterioration requirements (major source permitting) applies to projects that have the potential to increase annual emissions beyond defined significance levels. This potential is evaluated as a two-step process. First any emission increase associated with the project itself is evaluated. If the project will result in a significant emission increase (45 CSR §§14-2.74 & 2.75), then the net emission increase must be determined, including all contemporaneous equipment changes.

The following table summarizes the annual potential from the project and the same type of emission source in Permit R13-3186, which was issued on August 12, 2014.

| Table #3 New Potential Increase from the project | | | | | |
|--|-------------------------|-----------------------|----------|-----------------------|-----------|
| | PM _{2.5} (tpy) | NO _x (tpy) | CO (tpy) | SO ₂ (tpy) | VOC (tpy) |
| EDGs | 0.17 | 13.9 | 2.22 | 0.01 | 0.29 |
| R13-3186 | 0.57 | 18.96 | 39.06 | 0.35 | 2.58 |
| Total | 0.74 | 32.86 | 41.28 | 0.36 | 2.87 |
| PSD Significance Level | 10 (No) | 40 (No) | 100 (No) | 40 (No) | 40 (No) |

Based on the potential emissions of this project, it does not constitute a significant increase of emissions and is not required to undergo any further PSD review in accordance with 45 CSR 14. The project is classified as a minor modification and subject to the review process in 45 CSR13.

As such, the applicant prepared and submitted complete application, paid the required filling fees under 45 CSR 22 & 45 CSR13, and published a legal ad in accordance with 45CSR 13.

NSPS

New Source Performance Standards (NSPS) apply to certain new, modified, or reconstructed sources meeting the criteria established in 40 CFR 60.

Subpart IIII

Subpart IIII (Standard of Performance for Stationary Compression Ignition Internal Combust Engines) applies to stationary compression ignition engines manufactured after July 1, 2007. The engine for EG-12 was manufactured in April of 2008, which is after July 1, 2007 and therefore subject to Subpart IIII.

To comply with this subpart, ATK has elected to purchase certified engines as allowed under 40 CFR §60.4243(b)(1) and operate such engines according to the manufacturer's

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emission-related written instructions as required in 40 CFR §60.4243(a)(1). The two model engines proposed in this application are certified for the 2014 model year under the following Engine Family and Certificate Number that was issued by U.S. EPA:

| Table #4 U.S. EPA Certificate Numbers for Part 60 Compliance | | | |
|--|-------------------------|---------------|--------------------|
| Generate Set Model | Engine Manufacture | Engine Family | Certificate Number |
| 2250-RXC6DT2 | MTU Detroit Diesel Inc. | AMDDL95.4XTR | MDD-NRCI-10-06 |

NESHAP

The ABL is classified as a major source of HAPs. By default, all of these proposed engines are listed affected source under 40 CFR Part 63. The following will discuss the key applicable parts of each affected sources with its corresponding subpart.

Subpart ZZZZ

The internal combustion engines for the emergency generator sets are classified as an affected source under the NESHAP for Stationary Reciprocating Internal Combustion Engines (Subpart ZZZZ). The proposed engines will have an individual power output rating of greater than 500 bhp. These engines are to be operated for emergency purposes and under this rule are considered as limited use engines. 40 CFR §6590(b)(1) states that new and reconstructed emergency stationary RICE are only subject to the initial notification requirements of 40 CFR §63.6645(f) if the following are satisfied:

- Engine is located at a major source of HAPs;
- Engine is not operated or contractually operated for emergency demand response or voltage/frequency deviations 5% or greater below the standard voltage/frequency; and
- Engine has a rated output of greater than 500 bhp.

This application satisfies the initial notification as stated in 40 CFR §63.6645(f) on October 10, 2014. Engines that are classified as existing emergency engines located at a major source of HAP and do not operate or have an obligation to operate for emergency demand response for more than 15 hours per year are not subject to the requirement of Subpart ZZZZ or Subpart A of Part 63 (General Provisions of Part 63). Thus EG-11 is not subject to Subpart ZZZZ or any other notification requirements under Part 63.

The ABL is a major source of air pollution and therefore subject to 40 CSR 30. This proposed permitting action does not affect the facility's status or requirements to obtain a valid and current Title V Operating Permit. Since the proposed modification involves new emission units, ATK has 12 months after initial startup to update the facility operating permit. As part of this submission, ATK included a Significant Modification Application with this registration application.

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TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The new emission units will not emit any pollutants that are not already being emitted by another emission source at the facility. Therefore, no information about the toxicity of the hazardous air pollutants (HAPs) is presented in this evaluation.

AIR QUALITY IMPACT ANALYSIS

Based on the annual emission rates, the proposed modification is not classified as a major modification of a major source as defined by 45CSR14, so air quality modeling was not required.

MONITORING OF OPERATIONS

The applicant will be required to track hours of operation through a non-resettable hourly meter and note the reason for the operation as require in the G60-C General Permit and 40 CFR §60.4237(b).

RECOMMENDATION TO DIRECTOR

The information provided in the registration application indicates that the Allegany Ballistics Laboratory should meet all applicable requirements of state rules and federal regulations. It is recommended that the Director should approval Alliant Techsystems Operations request to register under the G60-C General Permit for the proposed construction at ABL.



Edward S. Andrews, P.E.
Engineer

November 20, 2014
Date

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