West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Final Minor Modification Permitting Action Under 45CSR30 and Title V of the Clean Air Act

This Fact Sheet serves to address the changes specific to this Minor Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on July 29, 2014.

Permit Number: **R30-05700011-2014 (3 of 3)**
Application Received: **April 21, 2014**
Plant Identification Number: **03-54-05700011**
Permittee: **Alliant Techsystems Operations LLC**
Facility Name: **Allegany Ballistics Laboratory**
Mailing Address: **210 State Route 956, Rocket Center, WV 26726-3548**

Permit Action Number: *MM01* Revised: *January 5, 2015*

Physical Location:	Rocket Center, Mineral County, West Virginia
UTM Coordinates:	686.47 km Easting • 4381.25 km Northing • Zone 17
Directions:	Left on plant access road from State Route 956 at the North Branch of the Potomac River

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Facility Description

SIC Codes: Primary - 3764, Secondary – 3089

Fabrication of both steel and composite structure rocket motor and warhead cases, production of propellants and explosives which are loaded into above cases and all associated case preparation and testing for motors.

The facility is located at two plants - Plant 1 and Plant 2. For Title V Permit purposes the facility operations were divided into the following Parts:

Part 1 - Motor Manufacturing,

Part 2 - Composites Manufacturing and Metal Fabrication,

Part 3 – Miscellaneous Units.

This Permit covers Part 3 of the facility - Miscellaneous Units.

This minor modification is to include requirements of recently issued permit R13-3186: construction of a new natural gas-fired steam system (Building 850 Steam Plant) including:

- 10 natural gas-fired boilers (L-23S through L-32S) - eight are expected to operate during the cooler months, three to operate during the warmer months, and two to operate as backup,

- emergency generator (EG-13) and

- ULSD Storage Vessel M-36S (M-28S in R13-3186).

Air emissions from each boiler exhaust into ductwork and exit through one of two points: the common stack or the economizer stack. By design, all of the boiler emissions will exit year round through the economizer stack. If the economizer is down for maintenance, emissions will exit through the common stack. Ultra-low sulfur diesel (ULSD) will be used as backup fuel in each of the new boilers during unexpected natural gas curtailment or supply interruption. ULSD will be combusted in each boiler for no more than 48 hours per calendar year during specified periods of maintenance, training, and testing.

Upon completion of the project, coal-fired Boiler No. 17 and distillate oil-fired Boilers No. 15 and 16, and all the associated equipment related to coal fuel and coal ash will be permanently shut down.

Also, in addition to the changes associated with R13-3186, requirements 3.4.5 and 5.4.5 were removed per company's request.

Emissions Summary

The following emission changes resulted from this modification:

Pollutant	Potential emissions before modification (TPY)	Change in potential emissions (TPY)	Potential emissions after modification (TPY)
Carbon Monoxide (CO)	122.12	+ 40.57	162.69
Nitrogen Oxides (NO_X)	124.29	+ 21.72	146.01
Particulate Matter (PM_{10})	22.33	+ 1.00	23.33
Sulfur Dioxide (SO_2)	289.14	+ 0.36	289.50
Volatile Organic Compounds (VOC)	110.44	+ 2.59	113.03
Total HAPs	58.678	+ 1.12	59.798

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit 162.69 tons per year of Carbon Monoxide, 146.01 tons per year of Nitrogen Oxides, 289.50 tons per year of Sulfur Dioxide, 113.03 TPY of Volatile Organic Compounds, and over 25 tons per year of aggregate HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant and over 25 tons per year of aggregate HAPs, Alliant Techsystems Operations LLC is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

The modification to this facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Particulate/Indirect Heat Exchangers
	45CSR10	Sulfur oxides emissions
	45CSR13	Preconstruction permits for sources
	45CSR16	NSPS
	45CSR30	Operating permit requirement.
	45CSR34	MACT
	40 C.F.R. 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
	40 C.F.R. 60, Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
	40 C.F.R. 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
	40 C.F.R. 63, Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters
State Only:	None	

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit *(if any)*
R13-3186	August 12, 2014	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

Changes to the Title V Permit:

1) Emission Units Table 1.1 – revised based on the permit R13-3186: added 10 natural gas-fired boilers (Emission Units L-23S through L-32S, Emission Point L-8E or L-9E), Emergency Generator Set (Emission Unit EG-13, Emission Point EG-13) and ULSD Storage Vessel, Emission Unit M-36S (M-28S in permit R13-3186).

2) The following conditions were added to include requirements of R13-3186: for boilers - 3.4.5 (new), 4.1.11, 4.1.12, 4.1.13, 4.2.9, 4.2.10, 4.2.11, 4.4.10, 4.5.5, 4.5.6, 4.5.7 and 4.5.8; for emergency generator EG-13 - 7.1.5, 7.1.6 and 7.2.2 (requirements of 40 C.F.R. 60 Subpart IIII "*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines"*).

3) Requirements 4.1.8, 4.2.2 and 4.2.3 – revised to correct applicable condition of 45CSR10 (45CSR§10-3.1.e was changed to 45 CSR §10-3.3.f). Previously it was determined that for the purpose of 45CSR10 applicability, ATK facility is located in Priority I Region (Table 45-10A of 45CSR10) and condition 45CSR§10-3.1.e is applicable. To be in the Priority I region, the facility should be located in one of the following three districts of Mineral County: Elk, New Creek or Piedmont. Since the facility is not in any of them (it's in Frankfort District), it is in a Priority III Region, and condition 45 CSR §10-3.3.f is applicable.

4) 45CSR2 and 45CSR10 - the new boilers (L-23S through L-32S) are subject to 45CSR2 and 45CSR10.

   Per 45CSR§2-2.10.b these boilers were classified as type "b" fuel burning units. They are subject to 10% opacity limit under 45 CSR§2-3.1, and to PM weight emission standard per 45CSR§2-4.1.b calculated as 0.09 x 12 MMBtu/hr x 10 units = 10.8 lbs/hr of PM (or 1.08 lbs/hr for each boiler). Per 45CSR§2A-3.1.b, they are exempt from the periodic testing requirements of 45CSR§2A-5 and the monitoring requirements of 45CSR§2A-6.

   Per 45CSR§10-2.8.b the new boilers were classified as type "b" fuel burning units located in Priority III region (45 CSR§10-2.17). They are subject to sulfur dioxide weight emission standards per 45CSR§10-3.3.f calculated as 3.2 x 12 MMBtu/hr x 10 units = 384 lbs/hr of SO_2 (or 38.4 lbs/hr for each boiler). They are not subject to standards for manufacturing process source operations per 45CSR§10-4.1 (2,000 ppm of in-stack SO_2 concentration by volume) because they will be used to generate steam that is utilized throughout the plant for heating purposes. The sulfur dioxide limitations of 40 C.F.R. 60, Subpart Dc (see item 5 below) are more stringent than 45CSR§10-3.3.f, therefore compliance with this standard will be demonstrated if compliance with the Subpart Dc sulfur dioxide limitations (requirement 4.1.11(d)) is demonstrated.

5) 40 C.F.R. 60, Subpart Dc "*Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units"*- the new boilers (L-23S through L-32S) are over 10 MMBtu/hr each, therefore they are subject to the requirements of this Subpart.

   The boilers burn distillate oil and are subject to sulfur dioxide limitations of 0.50 lb per MMBtu (0.5 x 120 MMBtu/hr = 60 lb/hr) and an alternative sulfur content limit of 0.50 percent by weight for the oil consumed per 40 CFR§60.42c(d). ATK proposed to use ultra-low sulfur diesel as the distillate oil with a maximum concentration of sulfur of 15 ppm (0.0015 % by wt.)(requirement 4.1.11(d)). If the boilers are in compliance with requirement 4.1.11(d), then compliance will be demonstrated with the less stringent 45 CSR§10-3.3.f sulfur dioxide weight emission standard (see item 4 above) and 40CFR§60.42c(d).

   The boilers are also subject to recordkeeping requirements. Per 40 CFR§60.42c(h), fuel supplier certificates required in §60.48c(f)(1) show compliance with 40 CFR§60.42c(d).

The established emission standards in Subpart Dc exclude units using natural gas. However, the fuel monthly recordkeeping requirement in 40 CFR§60.48c(g)(2) is applicable for both fuels (requirement 4.2.9).

6) 40 C.F.R. 63, Subpart DDDDD *"National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters"* – per 40 CFR §63.7485 the boilers (L-23S through L-32S) are subject to the requirements of this Subpart because they are located at a major source of HAPs. They are defined as "New Boilers" because they were constructed after June 4, 2010 (per 40 CFR§63.7490(b)). Because the boilers burn natural gas (distillate oil is only a back-up fuel), per 40 CFR§63.7499(l) they fall under the "Units designed to burn gas 1 fuels" category. Per 40 CFR§63.7495(a), compliance with the requirements of this subpart must be achieved upon boilers' start-up. Notification requirements are per 40 CFR§63.7545. Initial Notification of Applicability must be submitted within 15 days after startup. Notification of Compliance Status must be submitted within 60 days of performance of initial compliance demonstration (requirement 4.5.8).

The boilers do not have any emission limitations and are not subject to operating limits. They are also not subject to a one-time energy assessment. The boilers are subject to work practices (tune-ups) to demonstrate compliance (see Item 3 of Table 3 to the Subpart DDDDD). The tune-ups must be conducted annually per 40 CFR§63.7540(a)(10). According to 40 CFR§§63.7510(g) and 63.7515(d), the initial tune-up must be completed within 13 months after initial start-up. Subsequent tune-ups are required every 13 months from the previous tune-up.

7) 40 C.F.R. 60, Subpart IIII *"Standards of Performance for Stationary Compression Ignition Internal Combustion Engines"* is applicable to emergency generator EG-13 per 40 CFR§60.4200(a)(2)(i) because it is not a fire pump engine and it is manufactured after April 1, 2006.

Engine	Design Capacity	Ignition	Use/Type	Year installed	Source of HAP emissions
EG-13	1,046 bHP	Compression (CI)	Emergency	2015 (new)	Major source

The generator EG-13 is a 2014 model year emergency generator CI ICE10 with a displacement less than 30 liters per cylinder.

To maintain the emergency stationary RICE classification for the emergency generator, the RICE must meet the operational requirements of 40 CFR§60.4211(f) (requirement 7.1.5(a)).

Per 40 CFR§60.4211(c) it should be certified to the emission standards in 40 CFR§60.4205(b) (requirement 7.1.5(g)). Per 40 CFR§60.4205(b), the generator must meet the emission standards in 40 CFR§60.4202(a)(2) (requirement 7.1.5(h)), which in turn refers to emission standards for Tier 2 engines in 40 CFR§89.112 and the opacity standards in 40 CFR§89.113. Requirements 7.1.5(g) and (h) were added to include applicable conditions 40 CFR§§60.4205(b) and 60.4202(a)(2).

Requirement 7.1.5(b) (underlying R13-3186 condition 4.1.3(b)) was included in the permit with the following changes (for clarification purposes):

"The generator set shall be equipped with an engine or engine configuration that has been certified by the manufacturer to comply with ~~either~~ 40 CFR §60.4205(b)~~(2)~~, which refers to 40 CFR §60.4202(a)(2), which in turn refers ~~reffered~~ to 40 CFR §§89.112~~1~~ and 1132 ~~or 40 CFR Part 60~~."

Per 40 CFR§60.4209, the emergency generator must have installed a non-resettable hour meter prior to startup of the engine (requirement 7.1.5(f)).

Per 40 CFR§60.4207(b) (requirement 7.1.6), the generator must use non-road diesel fuel with a maximum sulfur content of 15 parts per million (ppm) per gallon. Because the emergency generator will fire only

ultra-low sulfur diesel ULSD, which by definition must meet the requirements of 15 ppm of maximum sulfur content, the generator meets this requirement.

Monitoring requirement 40 CFR§60.4211(f) was included under condition 7.2.2 to demonstrate compliance with hours of operation limit in 7.1.5(a).

8) 40 C.F.R. 63 Subpart ZZZZ *"National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"* – under this subpart the engine for the emergency generator (EG-13) is classified as new (installed after December 19, 2002).

Engine	Design Capacity	Ignition	Use/Type	Year installed	Source of HAP emissions
EG-13	1,046 bHP	Compression (CI)	Emergency	2015 (new)	Major source

The following requirements are applicable to the engine: Continuous Compliance requirements (40 C.F.R.§§63.6605 and 63.6640(e) and (f)) and Notification Requirements (40 C.F.R.§ 63.6645(f)). Some of them are already included with the permit under conditions 7.1.1, 7.1.2, 7.1.4, 7.5.1 and 7.5.2. Requirements of 40 C.F.R. §63.6640(e) were added to the condition 7.1.1. There are no Initial Compliance, Emission and Operating Limitations, Fuel, Performance Testing, Recordkeeping, Monitoring, Installation, Collection, Operation, and Maintenance requirements applicable to this engine.

9) Requirements 4.1.7 and 4.1.8 – added Boilers IDs "L-1S, L-2S and L-3S" for clarification purposes.

10) Requirement 4.1.10 - a typo was corrected ("Boiler No. 16" changed to "Boiler No. 15").

11) Requirements 4.1.11(b) and (c) (underlying R13-3186 conditions 4.1.1(b) and (c)) were included in the permit with corrected typo ("emission points E01 and E02" changed to "emission points L-8E and L-9E").

12) Requirement 4.4.9 – added reference to new condition "4.1.12", because this requirement is also applicable to new Boilers (L-23S through L-32S).

13) Added condition number "7.1.0" to the previously unnamed condition at the beginning of Section 7.1 for clarification purposes.

14) Added ATTACHMENT 4 to include APPENDIX A of the R13-3186 (old ATTACHMENTS 4 and 5 were re-named to ATTACHMENTS 5 and 6 respectively).

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

1) The following requirements were removed per company's request:

"3.4.5. To demonstrate compliance with the Requirement 3.1.9 (45CSR§7-5.1) the company shall keep records of maintenance and operations of fugitive dust control systems for the following Sources 9-11S (Zero Grit Blaster-432) and P-96S (Empire Grit Blaster-406-110) (Control Devices ID 9-1C, P-5C). ***[45CSR§30-5.1.c]"***

Since both Grit Blasters (9-11S and P-96S) are fully enclosed and their control devices (Cyclone Dust Collectors 9-1C and P-5C) vent inside, they will not cause fugitive PM emissions or visible emissions outside the building. Therefore, it is not subject to this recordkeeping requirement.

"*5.4.5. In order to ensure proper operation of the Cyclone Dust Collector (Source ID No. P-5C), the permittee shall conduct an annual preventative maintenance inspection / cleaning / replacement / refurbishment of the bags, bag connection, and dust hoppers, as appropriate. Records shall be maintained on site stating the date and time of each baghouse's annual preventative maintenance activity, the results of the annual preventative maintenance activity, and all corrective actions taken.* ***[45CSR§30-5.1.c]****"*

Since Empire Grit Blaster (P-96S) vents inside, it will not cause fugitive PM emissions or visible emissions outside the building. Therefore, this annual maintenance / inspection / cleaning / replacement / refurbishment and recordkeeping requirement was removed.

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: N/A
Ending Date: N/A

Point of Contact

All written comments should be addressed to the following individual and office:

Natalya V. Chertkovsky-Veselova
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1220 • Fax: 304/926-0478
natalya.v.chertkovsky@wv.gov

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

Not applicable.