

**Louisville Metro Air Pollution Control District**  
**850 Barret Ave., Louisville, Kentucky 40204**  
**22 January 2014**

**Title V Statement of Basis**

**Company:** BAE Systems

**Plant Location:** 163 Rochester Drive, Louisville, Kentucky 40214

**Date Application Received:** 2 Feb 2005      **Date Admin Complete:** 3 April 2006

**Date of Draft Permit:** 13 December 2012      **Date of Proposed Permit:** 06 February 2013

**District Engineer:** Yiqiu Lin      **Permit No:** 142-97-TV (R4)

**Plant ID:** 1216      **SIC Code:** 3489      **NAICS:** 332994      **AFS:** 01216

**Introduction:**

This permit will be issued pursuant to: (1) Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), 1 hr and 8 hr ozone (O<sub>3</sub>), and particulate matter less than 10 microns (PM<sub>10</sub>); and is a non-attainment area for particulate matter less than 2.5 microns (PM<sub>2.5</sub>) and partial non-attainment for sulfur dioxide (SO<sub>2</sub>).

**Application Type/Permit Activity:**

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

**Compliance Summary:**

Compliance certification signed

Source is out of compliance

Compliance schedule included

Source is operating in compliance

**I. Source Information**

1. **Product Description:** BAE Systems manufactures and refurbishes weapons systems for the military.
2. **Process Description:** Assembly, testing, machining, electro-plating, anodizing, surface preparation, surface coating, and welding of components for military weapons systems.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.
4. **Emission Unit Summary:**

<b>Emission Unit</b>	<b>Equipment Description</b>
U1	Paint booths for coating metal and non-metal parts
U3	Plating Shop (Building 117)
U5	Fiberglass Repair Application
U6	Cold Solvent Parts Cleaners
U8	Vapor Degreaser with Refrigerated Condenser
U10	Spray Coating Operation for Adhesive and Fire Retardant
U11	Natural gas furnace and space heaters
U12	Shot blast cabinets
U16	JBI spray booth for coating miscellaneous metal parts
U17	Blast booths

5. **Fugitive Sources:** There were no fugitive sources identified by the source.
6. **Permit Revisions:**

<b>Revision No.</b>	<b>Issue Date</b>	<b>Public Notice Date</b>	<b>Type</b>	<b>Attachment No./Page No.</b>	<b>Description</b>
Initial	8/2/2000	4/23/2000	Initial	Entire Permit	Initial Issuance
R1	1/14/2003	N/A	Administrative	Emission Unit PE1-12	Incorporate PS3 and PS6 performance indicator range

Revision No.	Issue Date	Public Notice Date	Type	Attachment No./Page No.	Description
R2	03/26/2013	12/13/2012	Renewal/ Administrative	Entire Permit/ Cover Page	Permit renewal and incorporate construction permits 28-10, 29-10, 29845-10, and 31207-11/ Changed "180 days" to "six months"
R3	7/17/2013	N/A	Administrative	Emission Unit U17, IA4	Permit revised to correct performance indicators for U17 and add appropriate monitoring, record keeping and reporting for the performance indicators, add insignificant emission unit IA4 for two emergency generators
R4	01/22/2014	N/A	Administrative	Emission Unit U8, Table of Applicable Regulations, Emission Unit U11 Description	Removed section 4 of Regulation 6.18 and added section 5 of Regulation 6.18. Update description of U11 equipment.

#### 7. Emission Summary:

Pollutant	District Calculated Actual Emissions (tpy) 2010 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	0.17	No
NO <sub>x</sub>	0.2	No
SO <sub>2</sub>	0.001	No
PM/ PM <sub>10</sub>	4.6	Yes
VOC	16.98	No
Total HAPs	1.92	Yes
Single HAP	Toluene = 0.88	Yes
Greenhouse Gas	< 28,441* CO <sub>2</sub> e	No

\* The plant-wide PTE for CO<sub>2</sub>e of greenhouse gases is 28,441 tons per year.

**8. Applicable Requirements:**

PSD       40 CFR 60       SIP       40 CFR 63  
 NSR       40 CFR 61       District-Origin       Other

**9. MACT Requirements:** The source has no future MACT requirements.

**10. Referenced Federal Regulations in Permit:**

40 CFR Part 63 Subpart A	General Provisions
40 CFR Part 63 Subpart N	Standards of Performance for Chromium Electroplating and Chromium Anodizing Tanks
40 CFR Part 63 Subpart MMMM	National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products

**II. Regulatory Analysis**

- 1. Acid Rain Requirements:** BAE Systems is not subject to the Acid Rain Program.
- 2. Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. BAE Systems does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
- 3. Prevention of Accidental Releases 112(r):** BAE Systems does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.
- 4. 40 CFR Part 64 Applicability Determination:** BAE Systems is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.
- 5. Basis of Regulation Applicability**

a. **Plant-wide**

BAE Systems is a major source for Single HAP and Total HAPs. Regulation 2.16 - *Title V Operating Permits* establishes requirements for major sources. BAE is not a major source for Greenhouse Gases.

BAE Systems accepted a plantwide 100 tons per year limit for PM/PM<sub>10</sub>. Therefore 40 CFR 64, Compliance Assurance Monitoring does not apply with respect to PM/PM<sub>10</sub> emissions. Regulation 6.43, section 19 establishes plant-wide VOC emission limit during ozone season for this plant.

Regulations 5.00 5.21, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. BAE Systems STAR limit is incorporated with the MACT limit. BAE submitted a plantwide STAR EA Demonstration for Category 1 TAC on December 26, 2006 and July 2, 2007, and a plantwide EA Demonstration for Category 2 TAC on June 28, 2007. BAE has demonstrated that the TAC emissions from this plant are either de minimis or compliant with STAR EA goals based on SCREEN3 modeling.

**b. Emission Unit U1 - Paint booths**

**i. Equipment:**

<b>P/PE</b>	<b>Capacity</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E5: One (1) large paint booth, make JBI, equipped with a large drying oven	14,000 cfm	paint booth: 1992  drying oven: 2000	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23  6.43	Regulation 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with TACs emissions.  Regulation 6.43 establishes VOC emission reduction requirements for selected stationary sources. BAE is subject to this regulation according to Reg. 6.43, section 19.
E6: One (1) medium paint booth, make JBI, equipped with small oven	26,000 cfm	paint booth: 1992  drying oven: 2000	7.08, 7.25, 7.59  40CFR63, Subpart M MMM	Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976.  Regulation 7.25 establishes requirements for new VOC emission facilities for which construction or modification is

<b>P/PE</b>	<b>Capacity</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E7: One (1) small paint booth, make JBI, equipped with small oven	15,000 cfm	paint booth: 1992  drying oven: 2000		commenced after June 13, 1979.  Regulation 7.59 establishes the requirements for VOC emissions from new paint spray booths for metal parts commenced after May 20, 1981.  Regulation 5.02 incorporates the federal MACT by reference. Subpart MMMM applies to miscellaneous metal parts and products surface coating facilities which uses 250 gallon or more HAP containing coatings and is located at a major source of HAP emissions.

ii. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 7.59, section 3.1 defines the VOC content limits for the coatings used for miscellaneous metal parts and product surface coating operation.
- (b) Regulation 7.25, section 3 establishes VOC standards for the affected facilities. The source is required to utilize best available control technology (BACT) and set out the designated specifications as permit conditions to ensure compliance with the requirements. The source accepted a plantwide 5 tons per year limit to avoid BACT.
- (c) The metal parts surface coating operation is subject to Regulation 7.59. The VOC content standards in Condition S1.a.i only apply to metal parts coating materials. The non-metal parts surface coating operation is subject to Regulation 7.25. The 5 tpy standard in Condition S1.a.iii only applies to non-metal parts coating operation and other units subject to Regulation 7.25.
- (d) Metal parts are wipe-cleaned before being coated. The wipe-down cleaners used for cleaning the metal parts are subject to Regulation 7.59.

2) **PM**

- (a) In accordance with Regulation 7.08, section 3.1.2, Table 1, since the process rate for this equipment is less than 0.5 ton/hr, the emission standard for PM is 2.34 lb/hr.
- (b) Using the minimum spray gun transfer efficiency of 35%, the percent solids of the material (45.9%), and the efficiency of the filters (greater than 90%), the PM emission limit of the spray booth cannot be exceeded.

3) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

4) **TAC**

- (a) Regulation 5.21 requires Group I sources to demonstrate environmental acceptability for each Category 1 TAC per Regulation 5.20, 5.21, 5.22, and 5.23.
- (b) BAE submitted a plantwide STAR EA Demonstration for Category 1 TAC on December 26, 2006 and July 2, 2007, and a plantwide EA Demonstration for Category 2 TAC on June 28, 2007. It was demonstrated that all Category 2 TACs emitted from paint spray booths (U1) are de minimis except for lead compounds. Based on SCREEN3 modeling, the carcinogenic risk for lead compound emissions from each paint spray booth is below 1.0 for non-industrial property and industrial property. There are no Category 1 TAC emissions from the paint spray booths. In addition, on September 21, 2009 BAE submitted an EA Demonstration for a new paint containing Chromium III and demonstrated that the potential Chromium III emissions from the paint sprays booths are de minimis. The carcinogenic risk for plantwide all TACs for all processes is below 7.5 for non-industrial property and below 75.0 for industrial property.

5) **HAP**

- (a) Per Regulation 5.02, section 3.74, the source is subject to 40 CFR Part 63, Subpart Mmmm.
- (b) The surface coating facility at BAE Systems is identified as an existing source according to 40 CFR 63.3882. All coatings used at this plant are classified as general use coatings. Therefore the source has a standard of 2.6 lbs organic HAP emission per gallon coating solids used during each 12-month compliance period.

iii. **Monitoring and Record Keeping**1) **VOC**

- (a) Regulation 7.25 does not require any specific monitoring and record keeping requirements for this unit, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.
- (b) When coating metal parts, the source is required to meet the monitoring and record keeping requirements in accordance with Regulation 7.59, section 6.

2) **PM/Opacity**

Regulation 7.08 does not require any specific monitoring and record keeping requirements for PM and opacity, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

3) **TAC**

Regulation 2.16, section 4.1.9.1 and 4.1.9.2 establishes monitoring and record keeping requirements to ensure ongoing compliance with the terms and conditions of the permit.



4) **HAP**

- (a) The source is required to comply with applicable monitoring and record keeping requirements of 40 CFR Part 63, Subpart M. M. M. M.
- (b) 40 CFR Part 63, Subpart M. M. M. M. - National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Parts and Products establishes three options to demonstrate compliance with the organic HAP emission standards in accordance with §63.3891: *Compliant Material Option*, *Emission Rate without Add-on Controls Option*, and *Emission Rate with Add-on Controls Option*. The paint booths are not equipped with any add-on controls for HAP, BAE Systems may select to demonstrate compliance with either *Compliant Material Option* or *Emission Rate without Add-on Controls Option*.

iv. **Reporting**1) **VOC**

Regulation 7.25 and 7.59 does not establish any reporting requirements. Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the VOC standard in their semi-annual compliance reports.

1) **PM/Opacity**

Regulation 7.08 does not require any specific reporting requirements for opacity, however, Regulation 2.16, section 4.1.9.3 requires reporting to ensure compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the opacity standard in their semi-annual compliance reports.

2) **TAC**

Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit.

3) **HAP**

- (a) The source is required to comply with applicable reporting requirements of 40 CFR Part 63, Subpart Mmmm.
- (b) In accordance with 40 CFR Part 63, Subpart Mmmm, section 63.3920(a)(1) and 63.3920(a)(1)(iv), BAE Systems may submit their Subpart Mmmm semi-annual compliance reports on the same schedule as the Title V operating permit reporting requirements.
- (c) BAE Systems submitted an initial notification and notification of compliance status on June 10, 2010.

c. **Emission Unit U3 – Plating Shop (Building 117)**

i. **Equipment:**

<b>P/PE</b>	<b>Capacity</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>		
PE1: Four (4) tanks with Acid exhaust		1989	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23	Regulation 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with TACs emissions.		
PE2: Seven (7) tanks with Alkaline exhaust		1989				
PE3: Ten (10) tanks with Alkaline exhaust		1989				
PE4: Three (3) tanks with Alkaline exhaust		1989				
PE5: Three (3) tanks with Cyanide exhaust						
PE6: Fifteen (15) tanks with Acid exhaust		1989				
PE7: Ten (10) tanks for Acid exhaust with Chromium		1989			5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 7.08, 63 Subpart N	Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976.
PE8: Thirty (13) tanks with Acid exhaust		1989			5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23	Regulation 5.02 incorporates the federal MACT by reference. 40 CFR Part 63, Subpart N applies to chromium electroplating and chromium anodizing tanks.

<b>P/PE</b>	<b>Capacity</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
PE9: Eleven (11) tanks with Cyanide exhaust		1989		
PE10: Fifteen (15) tanks with Alkaline exhaust		1989		
PE11: Nine (9) tanks with Chromium exhaust		1989	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 7.08, 63 Subpart N	
PE12: Nine (9) tanks with Acid exhaust		1989	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23	
PE13: Fifty six (56) rinse tanks		1989		

ii. **Standards/Operating Limits**

1) **PM**

- (a) In accordance with Regulation 7.08, section 3.1.2, Table 1, since the process rate for this equipment is less than 0.5 ton/hr, the emission standard for PM is 2.34 lb/hr.
- (b) Performance tests for PM, Opacity, and HAP are required by construction permit 435-08 and operating permit 618-08 for the two HEPA filters (PS3 and PS6). BAE Systems performed the required tests for PM, Opacity, and HAP on April 16 and 17, 2009. According to the stack test, the controlled PM emissions from this unit are in compliance with the lb/hr limit for PM; the chromium emissions are in compliance with the mg/dscm limits in the revised 40 CFR 63, Subpart N finalized on August 15, 2012.

2) **Opacity**

The equipment is subject to an opacity standard of less than 20% in accordance with Regulation 7.08, section 3.1.1.

3) **TAC**

- (a) Regulation 5.21 requires Group I sources to

demonstrate environmental acceptability for each Category 1 TAC per Regulation 5.20, 5.21, 5.22, and 5.23.

- (b) BAE submitted a plantwide STAR EA Demonstration for Category 1 TAC on December 26, 2006 and July 2, 2007, and a plantwide EA Demonstration for Category 2 TAC on June 28, 2007. The potential controlled TAC emissions from this unit have been determined by the District to be Environmentally Acceptable based on screen3 modeling. Based on Tier 3 refined air modeling, the carcinogenic risk for each Category 1 TAC is below 1.0 for non-industrial property and below 10.0 for industrial property with utilizing the packed bed scrubbers on the chrome anodizing tank and the hard chrome plating tanks as specified in Specific Condition S1.b for each process. The carcinogenic risk for all TACs for all processes is below 7.5 for non-industrial property and below 75.0 for industrial property.
- (c) In according to the EA Demonstration, only the controlled TAC emission are in compliance with EA Goals, therefore the source is required to utilize controls at all time the process equipment is in operation.

4) **HAP**

- (a) 40 CFR 63, Subpart N and Regulation 5.02, section 3.13 requires the owner or operator of an affected source subject to the provisions of Subpart N shall comply with these requirements on and after the compliance dated specified in 63.343(a).
- (b) Performance tests for PM, Opacity, and HAP were required by construction permit 435-08 and operating permit 618-08 for the two HEPA filters (PS3 and PS6). BAE Systems performed the required tests for PM, Opacity, and HAP on April 16 and 17, 2009. According to the stack test, the controlled PM emissions from this unit are in compliance with the lbs/hr limit for PM; the chromium emissions are in compliance with the mg/dscm limits in the revised 40 CFR 63, Subpart N

finalized on August 15, 2012.

iii. **Monitoring and Record Keeping**

1) **PM/Opacity**

Regulation 7.08 does not require any specific monitoring and record keeping requirements for PM and opacity, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

2) **TAC**

Regulation 2.16, section 4.1.9.1 establishes monitoring requirements to ensure ongoing compliance with the terms and conditions of the permit.

3) **HAP**

(a) 40 CFR 63, Subpart N requires the owner or operator of an affected source subject to the emission limitations of this subpart shall conduct monitoring according to the type of air pollution control technique that is used to comply with the emission limitation. The monitoring required to demonstrate continuous compliance with the emission limitations is identified in 63.343 for the air pollution control techniques expected to be used by the owner or operator of affected sources.

(b) 40 CFR 63, Subpart N and Regulation 5.02, section 3.13, requires the owner or operator to meet the record keeping requirements pursuant to 63.346. All records shall be maintained for a period of five years.

(c) The owner or operator of the affected source prepared and submitted an operation and maintenance plan to the District on December 4, 2008, as required by 40 CFR 63.342(f)(3).

**iv. Reporting****1) PM/Opacity**

Regulation 7.08 does not require any specific reporting requirements for PM and opacity, however, Regulation 2.16, section 4.1.9.3 requires sufficient reporting to ensure ongoing compliance with the terms and conditions of the permit.

**2) TAC**

Regulation 2.16, section 4.1.9.3 requires reporting to ensure compliance with the terms and conditions of the permit.

**3) HAP**

(a) 40 CFR 63, Subpart N requires the owner or operator to comply with the reporting requirements pursuant to 63.347.

(b) BAE Systems submitted an Initial Notification Report and a Notification of Compliance Status on January 25, 1997.

(c) On December 9, 2008, BAE Systems submitted a written notification for the initial startup of the HEPA filters. Compliance with the requirement of startup notification has been met.

(d) The owner or operator conducted the initial performance test from June 13 through June 26, 1993 for the plating facility. The stack test results demonstrated compliance with the chromium emission standard specified in 40 CRF Part 63, Subpart N.

**v. Testing****HAP**

(a) Regulation 2.03, section 5.1 requires testing to assure compliance with the terms and conditions of the permit. The source is required to perform initial and consequent performance test using EPA Reference Method 306 in order to demonstrate

compliance.

- (b) The source is required conduct performance tests following the District’s general testing requirements in accordance with Regulation 1.04.

d. **Emission Unit U5 - Fiberglass Repair Application**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E32: One (1) fiberglass repair application	1,095 gal/yr	N/A	5.00, 5.01, 5.14, 5.20, 5.21, 5.22, 5.23, 6.43, and 7.25	Regulation 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with TACs emissions.  Regulation 6.43 establishes VOC emission reduction requirements for selected stationary sources. BAE is subject to this regulation according to Reg. 6.43, section 19.  Regulation 7.25 establishes requirements for new VOC emission facilities for which construction or modification is commenced after June 13, 1979.

ii. **Standards/Operating Limits**

1) **VOC**

Regulation 7.25, section 3 establishes VOC standards for the affected facilities. The source is required to utilize best available control technology (BACT) and set out the designated specifications as permit conditions to ensure compliance with the requirements. The source accepted a plantwide 5 tons per year limit to avoid BACT.

2) **TAC**

Regulation 5.21 requires Group I sources to demonstrate environmental acceptability for each Category 1 TAC per Regulation 5.20, 5.21, 5.22, and 5.23. The potential

uncontrolled TAC emissions from this unit have been determined by the District to be de minimis based on PTE evaluation.

iii. **Monitoring and Record Keeping**

1) **VOC**

Regulation 7.25 does not require any specific monitoring and record keeping requirements for this unit, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

2) **TAC**

Regulation 2.16, section 4.1.9.1 and 4.1.9.2 establishes monitoring and record keeping requirements to ensure ongoing compliance with the terms and conditions of the permit.

iv. **Reporting**

1) **VOC**

Regulation 7.25 does not establish any reporting requirements. Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the VOC standard in their semi-annual compliance reports.

2) **TAC**

Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit.

e. **Emission Unit U6 - Cold Solvent Parts Cleaners**

i. **Equipment:**

<b>P/PE</b>	<b>Capacity</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E33a and E33f: Two (2) cold	Various	N/A	6.18, 6.43	Regulation 6.18 applies to each cold cleaner that use VOCs to



P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
solvent parts cleaners without secondary reservoirs				remove soluble impurities from metal surfaces.  Regulation 6.43 establishes VOC emission reduction requirements for selected stationary sources. BAE is subject to this regulation according to Reg. 6.43, section 19.

ii. **Standards/Operating Limits**

**VOC**

Regulation 6.18, section 4 establishes the requirements to install, maintain, and operate the parts washers.

iii. **Monitoring and Record Keeping**

**VOC**

The source is required to monitor and maintain records in accordance with Regulation 6.18, section 4.4.

iv. **Reporting**

**VOC**

Regulation 6.18 does not establish any reporting requirements. Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the VOC standard in their semi-annual compliance reports.

f. **Emission Unit U8 - Vapor Degreaser with Refrigerated Condenser**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E35: One (1) 30 gallon vapor degreaser with refrigerated	30 gallon	1985	5.00, 5.01, 5.14, 5.20, 5.21, 5.22, 5.23  6.18, 6.43	Regulation 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with TACs emissions.

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
condenser for cleaning metal parts				<p>Regulation 6.18 applies to each cold cleaner that use VOCs to remove soluble impurities from metal surfaces.</p> <p>Regulation 6.43 establishes VOC emission reduction requirements for selected stationary sources. BAE is subject to this regulation according to Reg. 6.43, section 19.</p>

ii. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 6.18, section 5 establishes the requirements to install, maintain, and operate the parts washers.
- (b) The potential uncontrolled VOC emissions from this project are 5.37 tons per year based on the AP-42 emission factor of 0.15 lb/hr/ft<sup>2</sup>, a surface area of 8.188 ft<sup>2</sup>, and operating 8760 hr/yr. The vapor degreaser has a freeboard ratio of 0.75 and utilizes a surface condenser to reduce VOC emissions.
- (c) This vapor degreaser is not subject to 40 CFR 63 Subpart T, National Emission Standards for Halogenated Solvent Cleaning, because it uses non-halogenated solvents.

2) **TAC**

Regulation 5.21 requires Group I sources to demonstrate environmental acceptability for each Category 1 TAC per Regulation 5.20, 5.21, 5.22, and 5.23. The potential uncontrolled TAC emissions from this unit have been determined by the District to be de minimis based on PTE evaluation.

**iii. Monitoring and Record Keeping****1) VOC**

Regulation 2.16, section 4.1.9.1 and 4.1.9.2 establishes monitoring and record keeping requirements to ensure ongoing compliance with the terms and conditions of the permit.

**2) TAC**

Regulation 2.16, section 4.1.9.1 and 4.1.9.2 establishes monitoring and record keeping requirements to ensure ongoing compliance with the terms and conditions of the permit.

**iv. Reporting****1) VOC**

Regulation 6.18 does not establish any reporting requirements. Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the VOC standard in their semi-annual compliance reports.

**2) TAC**

Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit.

g. **Emission Unit U10** - Spray Coating Operation for Adhesive and Fire Retardant

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E37: One (1) spray coating application for adhesive and fire retardant	N/A	Pre-1996	5.00, 5.01, 5.14, 5.20, 5.21, 5.22, 5.23, 6.43, 7.08, 7.25	<p>Regulation 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with TACs emissions.</p> <p>Regulation 6.43 establishes VOC emission reduction requirements for selected stationary sources. BAE is subject to this regulation according to Reg. 6.43, section 19.</p> <p>Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976.</p> <p>Regulation 7.25 establishes requirements for new VOC emission facilities for which construction or modification is commenced after June 13, 1979.</p>

ii. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 7.25, section 3 establishes VOC standards for the affected facilities. The source is required to utilize best available control technology (BACT) and set out the designated specifications as permit conditions to ensure compliance with the requirements. The source accepted a plantwide 5 tons per year limit to avoid BACT.
- (b) The adhesive is applied to metal parts and the fire retardant is applied to non-metal parts. Since the adhesive does not contain any VOC or HAP, only the fire retardant contains VOC, this unit is subject to Regulation 7.25 only but not subject to Regulation 7.59.

- (c) Metal parts are wipe-cleaned before being coated. The wipe-down cleaners used for cleaning the metal parts are subject to Regulation 7.59.

2) **PM**

- (a) In accordance with Regulation 7.08, section 3.1.2, Table 1, since the process rate for this equipment is less than 0.5 ton/hr, the emission standard for PM is 2.34 lb/hr.
- (b) Using the minimum spray gun transfer efficiency of 35%, the percent solids of the material (45.9%), and the efficiency of the filters (greater than 90%), the PM emission limit of the spray booth cannot be exceeded.

3) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

4) **TAC**

Regulation 5.21 requires Group I sources to demonstrate environmental acceptability for each Category 1 TAC per Regulation 5.20, 5.21, 5.22, and 5.23. The potential uncontrolled TAC emissions from this unit have been determined by the District to be de minimis based on PTE evaluation.

iii. **Monitoring and Record Keeping**

1) **VOC**

Regulation 7.25 does not require any specific monitoring and record keeping requirements for this unit, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

2) **PM/Opacity**

Regulation 7.08 does not require any specific monitoring and record keeping requirements for opacity and PM, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

3) **TAC**

Regulation 2.16, section 4.1.9.1 and 4.1.9.2 establishes monitoring and record keeping requirements to ensure ongoing compliance with the terms and conditions of the permit.

iv. **Reporting**

1) **VOC**

Regulation 7.25 does not establish any reporting requirements. Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the VOC standard in their semi-annual compliance reports.

2) **PM/Opacity**

Regulation 7.08 does not require any specific reporting requirements for PM and opacity, however, Regulation 2.16, section 4.1.9.3 requires reporting to ensure compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the opacity standard in their semi-annual compliance reports.

3) **TAC**

Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit.

h. **Emission Unit U11** - Natural gas furnace and space heaters

i. **Equipment**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E38: Natural gas-fired heating equipment, including furnaces, heaters, air make-up units, and/or small NG-fired boilers, each unit < 10.0 MM Btu/hr heat input capacity and with a cumulative site limit of 42.0 MM Btu/hr.	Various	Pre-1996	6.43 7.06	<p>Regulation 7.06 establishes the requirements for PM, Opacity, SO<sub>2</sub>, and NO<sub>x</sub> emissions from new indirect heat exchangers that commenced construction after April 19, 1972.</p> <p>Regulation 6.43 establishes VOC emission reduction requirements for selected stationary sources. BAE is subject to this regulation according to Reg. 6.43, section 19.</p> <p>The TAC emissions from the combustion of natural gas are considered to be “de minimis emissions” by the District. This includes all of the emissions from a process or process equipment for which the only emissions are the products of combustion of natural gas, such as from a natural gas-fired boiler or turbine, but does not include the other emissions from a process or process equipment that are not the products of the combustion of natural gas. (Regulation 5.21, section 1.6.7)</p>

ii. **Standards/Operating Limits**

1) **SO<sub>2</sub>**

Regulation 7.06, section 5.1.1 establishes a SO<sub>2</sub> emission standard of 1.0 lb/MMBtu per hour heat input capacity.

2) **PM**

Regulation 7.06, section 4.1.4 establishes a PM emission standard of 0.28 pounds per million BTU actual total heat input.

3) **Opacity**

Regulation 7.06, section 4.2 limits the visible emissions to twenty percent (20%) opacity.

iii. **Monitoring and Record Keeping**

1) **SO<sub>2</sub>/PM**

A one-time PM and SO<sub>2</sub> demonstration, using AP-42 emission factors and combusting natural gas, has shown that the emission standards cannot be exceeded. Therefore, there are no monitoring and record keeping requirements for this equipment with respect to PM and SO<sub>2</sub> emission limits.

2) **Opacity**

The District has determined that using a natural gas fired boiler will inherently meet the 20% opacity standard. Therefore, the company is not required to perform periodic monitoring to demonstrate compliance with the opacity standard.

iv. **Reporting**

1) **SO<sub>2</sub>/PM**

The District has performed one-time PM and SO<sub>2</sub> compliance demonstration, using AP-42 emission factors and combusting natural gas, and the emission standards cannot be exceeded. Therefore, there are no reporting requirements for this equipment with respect to PM and SO<sub>2</sub> emission limits.

2) **Opacity**

The District has determined that using a natural gas fired boiler will inherently meet the 20% opacity standard. Therefore, the company is not required to perform periodic reporting to demonstrate compliance with the opacity standard.



i. **Emission Unit U12 - Shot blast cabinets**

i. **Equipment**

<b>P/PE</b>	<b>Capacity</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E39a: One (1) glass bead shot blast cabinet, make Empire, model MH-36485	50 lb/hr	1991	5.00, 5.01, 5.14, 5.20, 5.21, 5.22, 5.23  7.08	Regulation 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with TACs emissions.  Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976.
E39b: One (1) aluminum oxide shot blast cabinet, make Vacublast, model MK 11-P	50 lb/hr	1991		
E39e: One (1) plastic shot blast cabinet, make Universal, model 72DDH-DC200	50 lb/hr	1991		
E43: One (1) blasting cabinet, make Cycloblast Dry Honer, model 4836-F	100 lb/hr	2010		

ii. **Standards/Operating Limits**

1) **PM**

For the blast booths, the PM limits are calculated per Regulation 7.08, section 3.1.2. The equation to calculate the emission limits is  $E = 3.59P^{0.62}$ , where P is expressed in tons/hr. The maximum throughput is less than 1,000 pounds per hour; therefore, the PM emission standard is 2.34 lb/hr.

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **TAC**

(a) Regulation 5.21 requires Group I sources to demonstrate environmental acceptability for each Category 1 TAC per Regulation 5.20, 5.21, 5.22, and 5.23. The potential uncontrolled TAC emissions

from this unit have been determined by the District to be de minimis based on PTE evaluation.

- (b) Based on PTE calculation, lead emissions and chromium III from each blast cabinet are de minimis uncontrolled, chromium VI emissions are de minimis controlled, but not de minimis uncontrolled. Therefore the permit will require the control device for each blast cabinet to be operated at all times in order to comply with the STAR program. Compliance with STAR Program will ensure compliance with PM standards from Regulation 7.08. There are no additional requirements for PM standards compliance.

iii. **Monitoring and Record Keeping**

1) **PM**

Regulation 7.08 does not require any specific monitoring and record keeping requirements for PM, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

2) **Opacity**

Regulation 7.08 does not require any specific monitoring and record keeping requirements for opacity, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

3) **TAC**

Regulation 2.16, section 4.1.9.1 and 4.1.9.2 establishes monitoring and record keeping requirements to ensure ongoing compliance with the terms and conditions of the permit.

iv. **Reporting**

1) **PM**

Regulation 7.08 does not require any specific reporting requirements for PM, however, Regulation 2.16, section

4.1.9.3 require sufficient reporting to ensure ongoing compliance with the terms and conditions of the permit.

2) **Opacity**

Regulation 7.08 does not require any specific reporting requirements for opacity, however, Regulation 2.16, section 4.1.9.3 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

3) **TAC**

Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit.

j. **Emission Unit U16 - JBI spray booth**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E44: One (1) front air flow spray booth, make JBI, model T-25-WSB-S, for coating miscellaneous metal parts.	N/A	2010	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23  6.43  7.08, 7.59  40CFR63, Subpart M	Regulation 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with TACs emissions.  Regulation 6.43 establishes VOC emission reduction requirements for selected stationary sources. BAE is subject to this regulation according to Reg. 6.43, section 19.  Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976.  Regulation 7.59 establishes the requirements for VOC emissions from new paint spray booths for metal parts commenced after May 20, 1981.  Regulation 5.02 incorporates the

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
				federal MACT by reference. Subpart Mmmm applies to miscellaneous metal parts and products surface coating facilities which uses 250 gallon or more HAP containing coatings and is located at a major source of HAP emissions.

ii. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 7.59, section 3.1 defines the VOC content limits for the coatings used for miscellaneous metal parts and products surface coating operation.
- (b) Metal parts are wipe-cleaned before being coated. The wipe-down cleaners used for cleaning the metal parts are subject to Regulation 7.59.

2) **PM**

- (a) In accordance with Regulation 7.08, section 3.1.2, Table 1, since the process rate for this equipment is less than 0.5 ton/hr, the emission standard for PM is 2.34 lb/hr.
- (b) Using the minimum spray gun transfer efficiency of 35%, the percent solids of the material (45.9%), and the efficiency of the filters (greater than 90%), the PM emission limit of the spray booth cannot be exceeded.

3) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

4) **TAC**

- (a) Regulation 5.21 requires Group I sources to demonstrate environmental acceptability for each Category 1 TAC per Regulation 5.20, 5.21, 5.22, and

5.23.

- (b) The potential uncontrolled TAC emissions from this unit have been determined by the District to be de minimis based on PTE evaluation.

5) **HAP**

- (a) Per Regulation 5.02, section 3.74, the source is subject to 40 CFR Part 63, Subpart Mmmm.
- (b) The surface coating facility at BAE Systems is identified as an existing source according to 40 CFR 63.3882. All coatings used at this plant are classified as general use coatings. Therefore the source has a standard of 2.6 lbs organic HAP emission per gallon coating solids used during each 12-month compliance period.

iii. **Monitoring and Record Keeping**

1) **VOC**

Regulation 7.59, section 6.1 and 6.2 establishes monitoring and record keeping requirements to ensure compliance with the standards in this regulation.

2) **PM/Opacity**

Regulation 7.08 does not require any specific monitoring and record keeping requirements for opacity and PM, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

3) **TAC**

Regulation 2.16, section 4.1.9.1 and 4.1.9.2 establishes monitoring and record keeping requirements to ensure ongoing compliance with the terms and conditions of the permit.

4) **HAP**

- (a) The source is required to comply with applicable

monitoring and record keeping requirements of 40 CFR Part 63, Subpart M MMMM.

- (b) 40 CFR Part 63, Subpart M MMMM - National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Parts and Products establishes three options to demonstrate compliance with the organic HAP emission standards in accordance with §63.3891: *Compliant Material Option*, *Emission Rate without Add-on Controls Option*, and *Emission Rate with Add-on Controls Option*. The paint booths are not equipped with any add-on controls for HAP, BAE Systems may select to demonstrate compliance with either Compliant Material Option or Emission Rate without Add-on Controls Option.

iv. **Reporting**

1) **VOC**

Regulation 7.59 does not establish any reporting requirements. Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the VOC standard in their semi-annual compliance reports.

2) **PM/Opacity**

Regulation 7.08 does not require any specific reporting requirements for PM and opacity, however, Regulation 2.16, section 4.1.9.3 requires reporting to ensure compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the opacity standard in their semi-annual compliance reports.

3) **TAC**

Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit.

4) **HAP**

- (a) The source is required to comply with applicable reporting requirements of 40 CFR Part 63, Subpart MMMM.
- (b) In accordance with 40 CFR Part 63, Subpart MMMM, section 63.3920(a)(1) and 63.3920(a)(1)(iv), BAE Systems may submit their Subpart MMMM semiannual compliance reports on the same schedule as the Title V operating permit reporting requirements.
- (c) BAE Systems submitted an initial notification and notification of compliance status on June 10, 2010.

k. **Emission Unit U17 - Blast booths**

i. **Equipment**

<b>P/PE</b>	<b>Capacity</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E12: One (1) blast booth, make Blast-It-All, model 122010	1,417 lb/hr	2010	5.00, 5.01, 5.14, 5.20, 5.21, 5.22, 5.23  7.08	Regulation 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with TACs emissions.  Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976.
E42: One (1) blasting booth, make JBI, model BE-25-WSB-S	1,850 lb/hr	2010		
E45: One (1) blast booth, make Hoffman, model BDF T2-12	1,097 lb/hr	2011		

ii. **Standards/Operating Limits**

1) **PM**

- (a) For blast booth E12, the PM limits are calculated per Regulation 7.08, section 3.1.2. The equation to calculate the emission limits is  $E = 3.59P^{0.62}$ , where P is expressed in tons/hr. The PM emission standard is 2.90 lb/hr.

- (b) For blast booth E42, the PM limits are calculated per Regulation 7.08, section 3.1.2. The equation to calculate the emission limits is  $E = 3.59P^{0.62}$ , where P is expressed in tons/hr. The PM emission standard is 3.41 lb/hr.
- (c) For blast booth E45, the PM limits are calculated per Regulation 7.08, section 3.1.2. The equation to calculate the emission limits is  $E = 3.59P^{0.62}$ , where P is expressed in tons/hr. The PM emission standard is 2.47 lb/hr.
- (d) The source is required to operate the control devices for the blast booths in order to be in compliance with the lb/hr PM limits according to Regulation 2.03, section 5.1.
- (e) The District has determined the uncontrolled PM emissions from each blast booth of this unit exceed its lb/hr PM emission limit. Therefore the owner or operator is required to operate the control devices on these blast booths at all times that the units are in operation.

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **TAC**

- (a) Regulation 5.21 requires Group I sources to demonstrate environmental acceptability for each Category 1 TAC per Regulation 5.20, 5.21, 5.22, and 5.23.
- (b) The District has determined that the uncontrolled Chromium emissions from the blast booths are not de minimis. Therefore, in lieu of modeling, the source is required to use the baghouse and limit hours of operation to keep the emissions under the de minimis level, according to Regulation 5.21, section 3.1.1.



**iii. Monitoring and Record Keeping****1) PM/Opacity**

Regulation 7.08 does not require any specific monitoring and record keeping requirements for PM and opacity, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

**2) TAC**

Regulation 5.21 does not have any specific monitoring and record keeping requirements, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 establishes monitoring and record keeping requirements to ensure ongoing compliance with the terms and conditions of the permit.

**iv. Reporting****1) PM/Opacity**

Regulation 7.08 does not require any specific reporting requirements for PM and opacity, however, Regulation 2.16, section 4.1.9.3 require sufficient reporting to ensure ongoing compliance with the terms and conditions of the permit.

**2) TAC**

Regulation 5.21 does not require any specific reporting requirements for TAC, however, Regulation 2.16, section 4.1.9.3 establishes reporting requirements to ensure ongoing compliance with the terms and conditions of the permit.

**III. Other Requirements**

- 1. Temporary Sources:** The source did not request to operate any temporary facilities.
- 2. Short Term Activities:** The source did not report any short term activities.
- 3. Emissions Trading:** N/A
- 4. Operational Flexibility:** The source is allowed to operate paint booths (U1) at an alternative operating scenario. Paint booths (U1) are primarily used for coating

metal and non-metal parts with paint. Under the alternative operating scenario, paint booths (U1) are allowed to be used for coating miscellaneous metal parts (MRAP). Paint booth U1-E7 is also allowed to be used for coating metal parts with Rhinocoat.

#### 5. Compliance History:

Date	Regulation Violated	Settlement
5/19/1993	Reg. 2.03, Section 1, Permit required -Construct/Modify	Agreement
8/24/1993	Reg. 7.59, Section 3, VOC exceeding standard Reg. 1.06, Section 3, Source self monitoring -emissions reporting	Agreement
7/13/1994	Reg. 2.03, Section 1, Permit required-operating	Agreement
8/10/1994	Reg. 5.04, Section 7, Asbestos notification none	Board Order
8/23/1994	Reg. 2.03, Section 1, Permit required-operating	Agreement
11/21/1994	Reg. 1.05, Section 5, CMES maintenance requirements; Reg. 5.12, Air toxics exceeding standards	Board Order
7/10/1998	Reg. 7.59, Section 3, VOC exceeding standard	Agreement
3/1/2005	Reg. 5.02, Section 2, Subpart N emission standard, Chromium emissions	Board Order
3/31/2007	Reg. 2.03, Section 1, Permit required –construction /modify; Reg. 2.03, Section 5, Failure to comply with District permit; Reg. 2.16, Section 5, Failure to comply with Title V permit	Board Order

#### 6. Calculation Methodology or Other Approved Method:

Paint Booths (U1, U7, U9, U10, U16): Mass balance method shall be used to determine the criteria pollutants and HAP emissions based on coating material usage and pollutant contents per MSDS of the coating materials.

Blast Booths (U12, U15, U17): Emissions for blast booths shall be determined using emission factors from approved stack test within 10 years. Emission factor from AP-42, 13.2.6, Abrasive Blasting can be used if emission factors from stack test are not available. The HAP and TAC emissions shall be determined based on lab analysis results of the emission sample, or the MSDS of the materials.

Chromium Electroplating/Anodizing Operation (U3): Mass balance method shall be used to determine the emissions from this unit.

Powder Coating Operation (U4): Emissions for this unit shall be determined based on the powder usage, powder transfer efficiency, and control efficiency of the powder collection system.

Fiberglass Repair Application (U5): Mass balance method shall be used to determine the criteria pollutants and HAP emissions based on coating material usage and pollutant contents per MSDS of the coating materials.

Cold Solvent Parts Washer (U6) and Degreaser (U8): The following equation shall be used to determine VOC emissions from the parts washer and degreaser:

$$q = A \left( \frac{Pa \cdot Mw}{R \cdot T} \right) \left( \frac{Di}{Z2 - Z1} \right) \ln \left( \frac{1}{1 - Yci} \right) EM$$

where

- q = emission rate at the liquid surface, kg/sec
- Pa = (atmospheric pressure) = 760 mmHg = 100 x 10<sup>3</sup> N/m<sup>2</sup>
- R = (Ideal Gas Constant) = 8.314 x 10<sup>3</sup> J/kmol °K
- T = (liquid temperature) = (273.15 + 20) = 293.15 °K
- Z2 - Z1 = empty vapor space above the liquid level in the tank = 0.001m
- EM = 1.1 = 10% increase of the emissions to include working losses.
- Mw = molecular weight, kg/kmol
- Di = Diffusivity through air, m<sup>2</sup>/s
- Yci = volatile fraction of component in air = vapor pressure/ 760 mmHg
- A = surface area, m<sup>2</sup>

Natural Gas Furnace and Space Heaters (U11): The source shall calculate the criteria pollutants and HAP emissions based on total heat input and emission factors from AP-42, 1.4 for natural gas combustion.

Sawdust Pneumatic Conveyor for Woodworking Equipment (U13): Emissions from woodworking equipment shall be based on the total sawdust produced and the control efficiency of the dust collection system for this unit.

Applicable Emission Factors				
Equipment	Pollutant	Emission Factor	EF Source	
Blast booths	PM	68.4 lbs/hr, uncontrolled	Stack Test, June 12, 2011 for Unit 15	
		0.17 lb/hr, controlled		
	Chromium	3.72e-4 lbs/hr, uncontrolled		
		1.08e-6 lb/hr, controlled		
	PM	27 lb/10 <sup>3</sup> abrasive, uncontrolled		AP-42, 13.2.6
	PM10	13 lb/10 <sup>3</sup> abrasive, uncontrolled		
PM2.5	1.3 lb/10 <sup>3</sup> abrasive, uncontrolled			

Applicable Emission Factors			
Equipment	Pollutant	Emission Factor	EF Source
Natural gas furnace and space heaters	NOx	100 lb/mmcf	AP-42
	CO	84 lb/mmcf	Section 1.4-1
	PM	7.6 lb/mmcf	AP-42 Section 1.4-2
	PM10	7.6 lb/mmcf	
	VOC	5.5 lb/mmcf	
	SO <sub>2</sub>	0.6 lb/mmcf	
	Hexane (HAP)	1.8 lb/mmcf	AP-42 Section 1.4-3

## 7. Insignificant Activities

Description	Quan.	PTE (tpy)	Basis for Exemption
Natural gas-fired heating equipment, including furnaces, heaters, air make-up units, and/or small NG-fired boilers, each unit < 10.0 MM Btu/hr heat input capacity and with a cumulative site limit of 42.0 MM Btu/hr (unit U11)	various	0.77 NOx (furnace)	Reg. 2.02, section 2.1.1. Permit U11 per Reg. 7.06
Indirect heat exchangers, < 1.0 MMBtu/hr: space heater 0.05 MMBtu/hr each	8	0.17 NOx	Reg. 2.02, section 2.1.1.
Internal combustion engines and vehicles used for transport	16	1.80 NOx (for one engine)	Reg. 2.02, section 2.2
Brazing, soldering or welding equipment	35	0.08 PM <sub>10</sub>	Reg. 2.02, section 2.3.4
Wood-working equipment (previously U13, E40)	1	1.98 PM <sub>10</sub>	Reg. 2.02, section 2.3.5 Reg. 7.08 (See Note 7)
Ovens used or potting materials	2	0.86 NOx	Reg. 2.02, section 2.3.6
10 gallons Drip Pan	4	0.03 VOC	Reg. 2.02, section 2.3.9.2
10 gal magnaflux reservoir	1	0.0002 VOC	Reg. 2.02, section 2.3.9.2
4000 gal machining oil storage tank with vapor pressure <10 mmHg (See unit IA1)	1	0.001 VOC	Reg. 2.02, section 2.3.9.2
350 gal storage tank for developing/rinsing/dying (See unit IA1)	7	0.02 VOC	Reg. 2.02, section 2.3.24
Laboratory ventilating	1	N/A	Reg. 2.02, section 2.3.11
Heat treat oven 1.0 MMBtu/hr	1	0.43 NOx	Reg. 2.02, section 2.3.14

Description	Quan.	PTE (tpy)	Basis for Exemption
Cold solvent parts cleaners equipped with secondary reservoirs (See unit IA2)	9	0.15 VOC	Reg. 2.02, section 2.3.15
250 gallons gasoline tank	1	0.09 VOC	Reg. 2.02, section 2.3.24
Diesel or fuel oil storage tank	1	0.001 VOC	Reg. 2.02, section 2.3.25
Syntactic foam injection process (See unit IA3)	1	0.05 VOC	Reg. 2.16, section 1.23
Foam filling component cavities with polyurethane mixture (See unit IA3)	1	1E-06 VOC	Reg. 2.16, section 1.23
Proximity switch manufacture (See unit IA3)	1	0.01 VOC	Reg. 2.16, section 1.23
Miscellaneous application of adhesive and sealant (See unit IA3)	1	0.04 VOC	Reg. 2.16, section 1.23
Emergency generators (See unit IA4)	2	1.1 NOx	Reg. 2.16, section 1.23
Metal working Equipment (previous U14 – E41), consists of one belt sander and one bench grinder controlled by filter box	1	0.80 PM	Reg. 2.16, section 1.23
Oil/Water Separator 250 gal/day	1	0.01 VOC	Reg. 7.36, section 1
Wastewater treatment tanks, in Building 118, used for wastewater from unit U3	30	N/A	Reg. 2.16, section 1.23
Temporary holding tanks for unit U3	5	N/A	Reg. 2.16, section 1.23

- 1) Insignificant activities identified in District Regulation 2.02 Section 2, may be subject to size or production rate disclosure requirements pursuant to Regulation 2.16 section 3.5.4.1.4.
- 2) Insignificant activities identified in District Regulation 2.02 Section 2 shall comply with generally applicable requirements as required by Regulation 2.16 section 4.1.9.4.
- 3) The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.
- 4) The owner or operator shall submit an updated list of insignificant activities that occurred during the preceding year pursuant to Regulation 2.16 section 4.3.5.3.6.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) to be reported on the annual emission inventory.

- 6) The District has determined pursuant to Regulation 2.16 section 4.1.9.4 that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.
- 7) The wood-working equipment is an insignificant activity based on PTE evaluation and Regulation 2.02, section 2.3.5. However, this wood-working equipment is still subject to Regulation 7.08. The uncontrolled PTE for this equipment cannot exceed any standards under Regulation 7.08. There are no additional requirements and no emission unit required for this equipment.

**8. Basis of Regulation Applicability for IA units**

a. **Emission Unit IA1 – storage tanks**

i. **Equipment**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
IE1: one (1) 4000 gal machining oil storage tank	4000 gal	N/A	6.43 6.13 or 7.12	Regulation 6.13 applies to storage vessel for VOC that was in being or had a construction permit before September 1, 1976 and has a capacity greater than 250 gallons.  Regulation 6.43 establishes VOC emission reduction requirements for selected stationary sources. BAE is subject to this regulation according to Reg. 6.43, section 19.  Regulation 7.12 applies to storage vessel for VOC that commences construction after April 19, 1972 has a capacity greater than 250 gallons.
IE2 through IE8: seven (7) 350 gal storage tanks	350 gal	N/A		

ii. **Standards/Operating Limits**

**VOC**

- 1) Regulation 6.13/7.12 establishes standards for existing/new VOC storage tank.

- 2) The storage tanks under this unit meet the definition of insignificant activities per Regulation 2.16, section 1.23. However, Regulation 6.13 or 7.12 applies to each VOC storage vessel that has a capacity greater than 250. These tanks shall meet the requirements under Regulation 6.13 or 7.12.

iii. **Monitoring and Record Keeping**

**VOC**

Regulation 6.13/7.12 does not require any specific monitoring and record keeping requirements for VOC, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

iv. **Reporting**

**VOC**

There are no routine compliance reporting requirements for this IA unit.

b. **Emission Unit IA2** – parts washers with secondary reservoirs

i. **Equipment**

<b>P/PE</b>	<b>Capacity</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
IE9 through IE17: nine (9) parts washers each equipped with a secondary reservoir	N/A	N/A	6.18 6.43	Regulation 6.18 applies to each cold cleaner that use VOCs to remove soluble impurities from metal surfaces.  Regulation 6.43 establishes VOC emission reduction requirements for selected stationary sources. BAE is subject to this regulation according to Reg. 6.43, section 19.

ii. **Standards/Operating Limits**

**VOC**

- 1) Regulation 6.18 establishes standards for cold cleaner that use VOCs to remove soluble impurities from metal surfaces.
- 2) The parts washers under this unit meet the definition of insignificant activities per Regulation 2.16, section 1.23. However, Regulation 6.18 applies to each cold cleaner that use VOC to remove soluble impurities from metal surfaces. These parts washers shall meet the requirements under Regulation 6.18.

iii. **Monitoring and Record Keeping**

**VOC**

Regulation 6.18, section 4.4 establishes record keeping requirements for cold cleaners

iv. **Reporting**

**VOC**

There are no routine compliance reporting requirements for this IA unit.

c. **Emission Unit IA3 – minor VOC emission units**

i. **Equipment**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
IE18: One (1) Syntactic foam injection process	N/A	N/A	7.25	Regulation 7.25 establishes requirements for new VOC emission facilities for which construction or modification is commenced after June 13, 1979.
IE19: One (1) Foam filling component cavities	N/A	N/A		
IE20: One (1) Proximity switch manufacture	N/A	N/A		



P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
IE21: One (1) Miscellaneous application of adhesive and sealant	N/A	N/A		

ii. **Standards/Operating Limits**

**VOC**

The equipment under this unit meets the definition of insignificant activities per Regulation 2.16, section 1.23. However, the source subject to a plant-wide 5 tons per 12-month limit per Regulation 7.25. The owner or operator shall demonstrate compliance with the limit in accordance with Regulation 7.25.

iii. **Monitoring and Record Keeping**

**VOC**

Regulation 7.25 does not require any specific monitoring and record keeping requirements for this unit, however, Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

iv. **Reporting**

**VOC**

Regulation 7.25 does not require any specific reporting requirements for VOC, however, Regulation 2.16, section 4.1.9.3 requires sufficient monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

d. **Emission Unit IA4 – Two (2) emergency generators**

i. **Equipment**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
IE22: One (1) diesel fueled emergency	120 HP	1998	40 CFR 63, Subpart ZZZZ	40CFR63 Subpart ZZZZ establishes national emission limitations and operating

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
generator, make Onan, model 60DGCBNE				limitations for HAP emitted from stationary RICE located at major and area sources of HAP emissions.
IE23: One (1) diesel fueled emergency generator, make KOHLER, model EG-AS	142 HP	1997		

ii. **Standards/Operating Limits**

**HAP**

- (a) These emergency generators meet the definition of insignificant activities per Regulation 2.16, section 1.23, therefore, it is de minimis for STAR. However, this emergency generator is subject to 40 CFR 63, Subpart ZZZZ, because it involves a new stationary reciprocating internal combustion engine (RICE) located at a major source of HAP emissions. The owner or operator shall demonstrate compliance with the requirements in accordance with Regulation 40 CFR 63, Subpart ZZZZ.
- (b) 40 CFR 63.6595 establishes compliance date for existing stationary RICE; 40 CFR 63. 6602 Establishes emission limitations, operating limitations, and other requirements for existing stationary RICE located at an major source of HAP emissions; 40 CFR 63.6604 establishes fuel requirements for stationary CI RICE; 40 CFR 63. 6605 establishes general requirements for stationary RICE; 40 CFR 63. 6640 establishes continuous compliance requirements.

iii. **Monitoring and Record Keeping**

**HAP**

- (a) 40 CFR 63.6625 establishes monitoring, installation, collection, operation, and maintenance requirements for stationary RICE.

- (b) 40 CFR 63.6655 establishes record keeping requirements for stationary RICE.

iv. **Reporting**

**HAP**

40 CFR 63, Subpart ZZZZ, Footnote 1 of Table 2c establishes reporting requirement for the RICE.