



Louisville Metro Air Pollution Control District
 850 Barret Avenue
 Louisville, Kentucky 40204-1745



xx xx 2015
Construction Statement of Basis

Company: BAE Systems

Plant Location: 163 Rochester Drive Louisville, KY 40214

Date Application Received: 26 June 2015	Application Number: 72287
14 February 2014	62500
04 February 2010	17180
17 December 2010	17194

Public Comment Date: 24 October 2015

District Engineer: Emily Tyler/Nantaporn Noosai **Permit No:** C-1216-1000-15-V

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

Introduction:

This permit will be issued pursuant to District Regulation 2.03, *Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements*. Its purpose is to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM_{2.5}), unclassifiable for the 2012 standard for particulate matter less than 2.5 micron (PM_{2.5}) and partial non-attainment for sulfur dioxide (SO₂).

Application Type/Permit Activity:

- Initial Issuance
- Permit Revision
 - Administrative
 - Minor
 - Significant
- Permit Renewal
- Construction

Compliance Summary:

- Compliance certification signed
- Compliance schedule included
- Source is out of compliance
- Source is operating in compliance

I. Source Information

- 1. Plantwide Overall Process Description:** The source manufactures and refurbishes weapons systems for the military.
- 2. Project Description:** The source submitted AERMOD air dispersion modeling to remove TAC limits for the following units: Blast-It-All model 122010 blast booth (U17, E12), Hoffman blast booth (U17, E45), and a JBI model BE-25-WSB-S blasting booth (U17, E42).
- 3. Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.
- 4. Emission Unit Summary:**

Construction No.	Equipment Description
C-1216-1000-15	<p>One (1) 1,417 lb/hr Blast-It-All model 122010 blast booth (U17, E12) with glass bead blasting media, coal slag blasting media, or aluminum oxide blasting media for surface preparation of miscellaneous metal parts controlled by a baghouse (C12).</p> <p>One (1) 1,097 lb/hr Hoffman blast booth (U17, E45) that can use either glass bead blasting media, coal slag blasting media, or aluminum oxide blasting media for surface preparation of miscellaneous metal parts and controlled by a Donaldson Torit baghouse model HDFT2-12 (C45).</p> <p>One (1) 1,850 lb/hr JBI model BE-25-WSB-S blasting booth (U17, E42) controlled with a JBI model 60-10-3 baghouse (C42) and one (1) 100 lb/hr Cycloblast Dry Honer model 4836-F blasting cabinet (U12, E43) with controlling filters.</p>

5. Permit Revisions

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
Initial	29845-10-C	01/06/2011	12/04/2010	Initial	Entire Permit	Initial Permit Issuance for One (1) 1,417 lb/hr Blast-It-All model 122010 blast booth (U17, E12) with glass bead blasting media for surface preparation of miscellaneous metal parts controlled by a baghouse (C12).
R1	29845-10-C(R1)	01/06/2011	12/04/2010	Revision	Cover Page	Add aluminum oxide and coal slag as acceptable blasting media.
R2	29845-10-C(R2)	04/02/2014	03/01/2014	Revision	Entire Permit	Re-construction of blast booth.
Initial	28-10-C	07/31/2010	06/25/2010	Initial	Entire Permit	Initial Permit Issuance for one (1) 1,850 lb/hr JBI BE-25-WSB-S blasting

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
						booth (U17, E42) and one (1) 100 lb/hr Cycloblast Dry Honer model 4836-F blasting cabinet (U12, E43) with controlling filters.
R1	28-10-C (R1)	01/06/2011	N/A	Revision	Cover Page	Update description.
Initial	31207-11-C	03/21/2011	02/16/2011	Initial	Entire Permit	Initial Permit Issuance for One (1) 1,097 lb/hr Hoffman blast booth (U17, E45) that can use either glass bead blasting medium or aluminum oxide blasting medium for surface preparation of miscellaneous metal parts and controlled by a Donaldson Torit baghouse model DFR2-212 (C45).
R1	31207-11-C(R1)	X/X/2015	10/24/2015	Revision	Entire Permit	Incorporation of Construction permits 29845-10-C(R2), 28-10-C(R1) and 31207-11-C. Updated Chromium VI limits to reflect modeling submitted on 6/26/2015 by the source.

6. **Fugitive Sources:** There are no fugitive emissions for this project.

7. **Plantwide Emission Summary:**

Pollutant	District Calculated Actual Emissions (tpy) 2013 Data	Pollutant that triggered major source status
CO	0.97	No
NO _x	4.54	No
SO ₂	0.02	No
PM/PM ₁₀	4.36/4.30	Yes ¹
VOC	8.82	No
Total HAPs	0.48	Yes
Single HAP > 1 tpy	N/A	Yes

Note¹: Limit taken to be synthetic minor for Title V and PSD.

8. **Applicable Requirements:**

PSD 40CFR60 SIP 40CFR63
 NSR 40CFR61 District-Origin Other

9. MACT Requirements:

There are no MACT requirements in the permit number C-1216-1000-15-V.

10. Referenced Federal Regulations in Permit:

N/A

II. Regulatory Analysis

- 1. Acid Rain Requirements:** This equipment 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. This source 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):** The source 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:** This project and affected equipment is not major for any criteria pollutant. In accordance with 40 CFR 64, Compliance Assurance Monitoring for Major Stationary Sources, the source is not required to propose a CAM plan based on current process and control device requirements and practices.
- 5. Basis of Regulation Applicability**

- a. **Plant-wide**

The source has taken a federally enforceable limit of 100 tons per consecutive 12-month period for PM/PM₁₀ emissions to preclude the applicability of Regulation 2.05 – *Prevention of Significant Deterioration of Air Quality*.

Regulation 2.03, section 6.1 requires sufficient monitoring, record keeping, and reporting to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the District upon request.

Regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 (STAR Program) establish requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. BAE Systems submitted their updated AERMOD air dispersion modeling on June 26, 2015, and previously submitted on 2/26/2015, 3/21/2014 and 11/20/2014, for each emission blasting unit for non-de minimis Chromium VI TAC emissions. The carcinogen risk and non-carcinogen risk values, based on the model results from the source's EA Demonstration, comply with the STAR EA goals required in Regulation 5.21.

b. **Applicable Regulations:**

Regulation	Title	Type
2.03	Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements	SIP
2.16	Title V Operating Permits	SIP
2.05	Prevention of Significant Deterioration of Air Quality	SIP
5.00	Definitions	Local
5.01	General Provisions	Local
5.02	Adoption of National Emission Standards for Hazardous Air Pollutants	Local
5.20	Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant	Local
5.21	Environmental Acceptability for Toxic Air Contaminants	Local
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant	Local
5.23	Categories of Toxic Air Contaminants	Local
7.08	Standards of Performance for New Process Operations	SIP

c. **Permit C-1216-1000-15:**

i. **Equipment:**

Emission Point	Description	Applicable Regulation	Basis for Applicability
U17 – E45	1,097 lb/hr Hoffman blast booth (U17, E45) that can use either glass bead blasting media, coal slag blasting media, or aluminum oxide blasting medium for surface preparation of miscellaneous metal parts and controlled by a Donaldson Torit baghouse model DFR2-212 (C45)	2.05, 5.00, 5.01, 5.02, 5.20, 5.21, 5.22, 5.23, 7.08	Regulation 5.00, 5.01, 5.02, 5.20, 5.21, 5.22, 5.23 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1 TACs which potentially could exceed the de minimis values. Regulation 7.08 establishes the requirements for PM emissions from new processes that commenced construction after September 1, 1976.
U17 – E42	1,850 lb/hr JBI model BE-25-WSB-S blasting booth (U17, E42) controlled with a JBI model 60-10-3 baghouse (C42)		
U17 – E12	1,417 lb/hr Blast-It-All model 122010 blast booth (U17, E12) with glass bead blasting media, coal slag blasting media, or aluminum oxide blasting media for surface preparation of miscellaneous metal parts controlled by a baghouse		

ii. **Standards/Operating Limits**

1) **PM**

- (a) Per Regulation 7.08, section 3.1.2, the equation to calculate the PM emission limits is $E = 3.59P^{0.62}$, where P is expressed in tons/hr. The PM emission limits are 2.47 lb/hr for the Hoffman blast booth (U17-E45), 2.34 lb/hr for the Cycloblast Dry Honer blasting cabinet (U12, E43), 3.14 lb/hr for the JBI blast booth (U17, E42), and 2.90 lb/hr for the Blast-It-All blast booth (U17, E12).
- (b) Regulation 2.03, section 6.1, the owner or operator is required to use filters certified to meet the manufacturer’s original specifications in the control device.
- (c) Regulation 2.03, section 6.1, the source is required to operate the control device for the blast booth in order to be in compliance with the lb/hr PM limits.

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity

standard of less than 20%.

3) TAC

Regulation 5.21 requires Group I sources to demonstrate environmental acceptability for each Category I TAC per Regulation 5.20, 5.21, 5.22, and 5.23. The source submitted updated STAR Environmental Acceptability Demonstration (EA Demo) for the Hoffman blast booth (U17-E45), the JBI blast booth (U17, E42), and the Blast-It-All blast booth (U17, E12) received on June 26, 2015. The EA Demo used AERMOD air dispersion modeling for Category 1 TAC Chromium VI. The following table shows the EA Demo results for the Hoffman blast booth (U17, E45) and the JBI blast booth (U17, E42). The environmental acceptability for this process has been demonstrated. Since the source modeled at less than de minimis, they will be given de minimis as a limit.

Equipment	Single process Industrial property R_C	Single process Industrial property EAG_C	Single process Non-adjusted R_C	Single process Non-adjusted EAG_C
Hoffman blast booth (U17, E45)	1.359	10.0	0.588	1.0
JBI blast booth (U17, E42)	0.0142	10.00.	0.0103	1.0

For the Blast-It-All blast booth (U17, E12), the EA Demo showed a single process industrial property R_C of 11.31 (max EAG_C , 10.0) and a single process non-adjusted R_C of 3.79 (max EAG_C , 1.0). To achieve an R_C within the limits of the max EAG_C , the hours of operation of the blast booth are limited to 2,305 hours per 12 consecutive month period, the baghouse control is required, and Chromium VI emissions are limited to 0.0359 lb per 12 consecutive month period. With this limit, the single process industrial property R_C is 2.98 (max EAG_C , 10.0) and the single process non-adjusted R_C is 0.997 (max EAG_C , 1.0). The environmental acceptability for this process has been demonstrated.

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 did not request any operational flexibility for these emission points.
- 5. **Compliance History:**

Incident Date	Regulation Violated	Result
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
2/19/2014	Reg. 1.05, Section 5, CMES maintenance requirements, Reg. 2.03, Section 5, Failure to comply with District permit	Board Order

- 6. **Calculation Methodology:** 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.

Applicable Emission Factors			
Equipment	Pollutant	Emission Factor	EF Source
Blast booth	PM	68.4 lb/hr, uncontrolled	Stack Test, April 05, 2011 /June 14, 2011
		0.17 lb/hr, controlled	

Applicable Emission Factors			
Equipment	Pollutant	Emission Factor	EF Source
	Chromium VI	2.42e ⁻⁴ lb/hr, uncontrolled	
		6.99e ⁻⁷ lb/hr, controlled	

- 7. **Insignificant Activities:** There are no insignificant activities contained in this construction permit.
- 8. **Permit Fee:** The construction permit fee of \$4,132.13 is based on the Schedule of Fees table in Regulation 2.08, section 12. The following table is a breakdown of the applicable fees.

Fee Type	Amount
Construction Permit C-1216-1000-15-V	
Permit Actions: Significant Permit Revision	\$2,582.58
STAR Program: EA Demo with Tier 3 or 4 Modeling	\$1,549.55