INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

To:	Interested Parties
Date:	December 30, 2015
From:	Matthew Stuckey, Chief Permits Branch Office of Air Quality
Source Name:	Crane Division, Naval Surface Warfare Center (NSWC Crane)
Permit Level:	Title V – Administrative Amendment
Permit Number:	101-36477-00005
Source Location:	300 Highway 361 Crane, Indiana 47522-5001
Type of Action Taken:	Changes that are administrative in nature

Notice of Decision: Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the matter referenced above. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

The final decision is available on the IDEM website at: http://www.in.gov/apps/idem/caats/
To view the document, select Search option 3, then enter permit 36477.

If you would like to request a paper copy of the permit document, please contact IDEM's central file room:

Indiana Government Center North, Room 1201
100 North Senate Avenue, MC 50-07
Indianapolis, IN 46204
Phone: 1-800-451-6027 (ext. 4-0965)
Fax (317) 232-8659

(continues on next page)

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

Christine Freeman
SAIC
300 US Highway 361, Building 3260
Crane, IN, 47522

December 30, 2015

Re: 101-36477-00005
Administrative Amendment to
Part 70 (Renewal) 101-32904-00005

Dear Christine Freeman:

Naval Surface Warfare Center, Crane Division (NSWC Crane) was issued a Part 70 Permit Renewal No. 101-32904-00005 on April 16, 2015 for a stationary military base, where ammunition, rockets, and other military ordnance are manufactured, stored, and disposed located at 300 US Highway 361, Crane IN 47522-5001. On November 10, 2015, the Office of Air Quality (OAQ) received an application from the source requesting to add a new emergency diesel generator (identified as CRN-2540-02-23-H14).

Pursuant to the provisions of 326 IAC 2-7-11(a), the permit is hereby administratively amended as described in the attached Technical Support Document.

All other conditions of the permit shall remain unchanged and in effect.

Please find attached the entire Part 70 Operating Permit as amended.

A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.

If you have any questions on this matter, please contact Shanuka Dias Jayasinghe of my staff, at 317-234-5372 or 1-800-451-6027, and ask for extension 4-5372.

Sincerely,

Jenny Acker
Section Chief
Permits Branch
Office of Air Quality

Attachment(s): Updated Permit, Technical Support Document and Appendix A
JA/sdj

cc: File - Martin County
Martin County Health Department
U.S. EPA, Region 5
Compliance and Enforcement Branch
Billing, Licensing and Training Section

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

Part 70 Operating Permit Renewal
OFFICE OF AIR QUALITY

Crane Division, Naval Surface Warfare Center (NSWC Crane)
300 Highway 361
Crane, Indiana 47522-5001

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T101-32904-00005	
Issued by: Original Signed Jenny Acker, Section Chief Permits Branch Office of Air Quality	Issuance Date: April 16, 2015 Expiration Date: April 16, 2020

Administrative Amendment No.: T101-36219-00005, issued on October 26, 2015.

Administrative Amendment No.: T101-36477-00005	
Issued by: Jenny Acker, Section Chief, Permits Branch Office of Air Quality	Issuance Date: December 30, 2015 Expiration Date: April 16, 2020

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Attachment D: 40 CFR 63.2430, Subpart FFFF: National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing

Attachment E: 40 CFR 60.4230, Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

Attachment F: 40 CFR 63.6580, Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Attachment G: 40 CFR 63.7480, Subpart DDDDD: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in Conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary military base where ammunition, rockets, and other military ordnance are manufactured, stored, and disposed.

Source Address:	300 Highway 361, Crane, Indiana 47522
General Source Phone Number:	(812) 854-1132
SIC Code:	9711, 3483
County Location:	Martin
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD Rules Major Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

This stationary source consists of the following emission units and pollution control devices:

(a) Thirteen (13) abrasive blasting units, consisting of:

	Unit ID (Previous ID) [Descriptor]	Bldg	Year Installed (Modified)	Abrasive Used (lb/yr)	Filter Type	Stack Exhaust
(1)	CRN-0104-03-23-HH16 (CRN-2171-01-17-DD22)	104	2007	1,000	filter system	CRN-0104-03-23-HH16-S
(2)	CRN-0106-02-23-HH13	106	1988	3,000	baghouse	CRN-0106-02-23-HH13-S1, S2
(3)	CRN-2521-07-02-J17	2521	after 1987	36,036	filter system	CRN-2521-07-02-J17-S
(4)	CRN-2521-08-02-J17	2521	after 1987	36,036	filter system	CRN-2521-08-02-J17-S
(5)	CRN-2521-09-2-J17	2521	after 1987	36,036	filter system	CRN-2521-09-2-J17-S
(6)	CRN-3234-14-17-U26	3234	1993	36,036	filter system	CRN-3234-14-17-U26-S
(7)	CRN-0227-03-23-HH12	227	before 1991	3,000	baghouse	CRN-0227-03-23-HH12-S
(8)	CRN-3168-03-17-V28	3168	1988	1,000	filter system	CRN-0041-06,07,08-17-V25-S
(9)	CRN-0041-06-17-V25	41	1993 (2006)	1,000	filter system	CRN-0041-06,07,08-17-V25-S
(10)	CRN-0041-07-17-V25	41	1993 (2006)	1,000	filter system	CRN-0041-06,07,08-17-V25-S
(11)	CRN-0041-08-17-V25	41	1993 (2006)	1,000	filter system	CRN-0041-06,07,08-17-V25-S
(12)	CRN-0107-06-23-HH13 [Barrel blast system]	107	2005	30,660	baghouse	ABS1
(13)	CRN-0107-07-23-HH13 [Vertical descaling machine]	107	2005	183,960	baghouse	ABS2

(b) Twenty-six (26) boilers, consisting of:

	Unit ID	Make	Building	Fuels*	Initially Constructed	Reconstructed	Max Capacity (MMBtu/hr)	Exhaust Stack
(1)	CRN-0115-01-23-GG12	Cleaver Brooks	115	NG	1997	--	16.75	CRN-0115-01-23-GG12-S
(2)	CRN-0128-01-17-W25	Cleaver Brooks	128	NG	1997	--	16.75	CRN-0128-01-17-W25-S
(3)	CRN-0115-03-23-GG12	Cleaver Brooks	115	NG/FO	1997	--	16.75	CRN-0115-02-23-GG12-S
(4)	CRN-0128-03-17-W25	Cleaver Brooks	128	NG/FO	1997	--	16.75	CRN-0128-03-17-W25-S
(5)	CRN-0064-02-10-T27	Cleaver Brooks	64	NG/FO	1976	2010	16.00	CRN-0064-01-10-T27-S
	The above boilers (b)(1), (b)(2), (b)(3), (b)(4) and (b)(5) are affected boilers under 40 CFR 60, Subpart Dc.							
(6)	CRN-0115-02-23-GG12	Cleaver Brooks	115	NG/FO	1985	--	6.2	CRN-0115-03-23-GG12-S
(7)	CRN-0140-03-17-Y25	Cleaver Brooks	140	NG/FO	2013	--	5.1	CRN-0140-03-17-Y25-S
(8)	CRN-0140-04-17-Y25	Cleaver Brooks	140	NG/FO	2013	--	5.1	CRN-0140-02-17-Y25-S
(9)	CRN-0150-01-17-CC23	Cleaver Brooks	150	NG/FO	April 1989	--	25.2	CRN-0150-01-17-CC23-S
(10)	CRN-0150-03-17-CC23	Cleaver Brooks	150	NG/FO	April 1989	--	25.2	CRN-0150-03-17-CC23-S
(11)	CRN-0199-01-23-JJ14	Cleaver Brooks	199	NG/FO	1978	--	17.5	CRN-0199-01-23-JJ14-S
(12)	CRN-0199-02-23-JJ14	Cleaver Brooks	199	NG/FO	1978	--	17.5	CRN-0199-02-23-JJ14-S
(13)	CRN-2737-01-12-M41	Cleaver Brooks	2737	NG/FO	1987	--	12.5	CRN-2737-01-12-M41-S
(14)	CRN-2737-02-12-M41	Cleaver Brooks	2737	NG/FO	1987	--	12.5	CRN-2737-02-12-M41-S
(15)	CRN-3234-02-17-U26	Superior	3234	NG/FO	1992	--	8.4	CRN-3234-02-17-U26-S
(16)	CRN-3234-03-17-U26	Superior	3234	NG/FO	1992	--	8.4	CRN-3234-03-17-U26-S
(17)	CRN-0041-04-17-U26	York-Shipley	41	NG/FO	1983	2011	6.9	CRN-0041-02-17-U26-S
(18)	CRN-0041-03-17-U26	Hurst	41	NG/FO	1977	2008	8.4	CRN-0041-02-17-U26-S
(19)	CRN-0128-02-17-W25	Cleaver Brooks	128	NG/FO	1984	--	6.2	CRN-0128-02-17-W25-S
(20)	CRN-0149-01-10-S30	Cleaver Brooks	149	NG/FO	1980	2015	6.2	CRN-0149-01-10-S30-S
(21)	CRN-0149-02-10-S30	Cleaver Brooks	149	NG/FO	1980	2015	6.2	CRN-0149-02-10-S30-S
(22)	CRN-0180-01-17-W22	Cleaver Brooks	180	NG/FO	1999	--	4.19	CRN-0180-01-17-W22-S
(23)	CRN-0180-02-17-W22	Cleaver Brooks	180	NG/FO	1999	--	4.19	CRN-0180-02-17-W22-S
(24)	CRN-2674-03-00-0001	Cleaver Brooks	2674	NG/FO	2013	--	6.7	CRN-2674-03-00-0001-S
(25)	CRN-2674-04-00-0001	Cleaver Brooks	2674	NG/FO	2013	--	6.7	CRN-2674-02-00-0001-S
(26)	CRN-2737-04-12-M41	Cleaver Brooks	2737	NG/FO	2014	--	5.02	CRN-2737-03-12-M41-S

*NG - Natural Gas / FO - distillate fuel No.2

Under 40 CFR 63.7480, Subpart DDDDD: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, the above boilers are considered affected facilities.

(c) Two (2) carpentry shops, identified as:

(1) CRN-0224-02-23-HH12, located in Building 224, with a maximum wood usage of 1,000,000 board feet per year and a maximum process weight rate of 0.69 tons per hour, equipped with a cyclone for particulate control and exhausting to stack CRN-0224-02-23-HH12-S. [40 CFR Part 64]

(2) CRN-2720-04-23-GG12, located in Building 2720, with a maximum wood usage of 14,000 board feet per year and a maximum process weight rate of 0.25 tons per hour, equipped with a cyclone for particulate control and exhausting to stack CRN-2720-04-23-GG12-S.

(d) Twenty-six (26) paint booths, consisting of:

	Unit ID	Building	Particulate Control	Constructed Date	Exhaust Stack
(1)	CRN-0104-03-23-HH16	104	dry filter	2010	CRN-0104-03-23-HH16-F
(2)	CRN-0107-01-23-HH13	107	dry filter	2014	CRN-0107-01-23-HH13-S
(3)	CRN-0107-02-23-HH13	107	dry filter	2014	CRN-0107-02-23-HH13-S
(4)	CRN-0107-03-23-HH13	107	dry filter	1980	CRN-0107-03-23-HH13-S
(5)	CRN-0107-04-23-HH13	107	water wall	1980	CRN-0107-04-23-HH13-S
(6)	CRN-0136-01-17-Z26	136	dry filter	1963	CRN-0136-01-17-Z26-S
(7)	CRN-0155-02-17-BB25	155	dry filter	1986	CRN-0155-02-17-BB25-S
(8)	CRN-0155-03-17-BB25	155	dry filter	1986	CRN-0155-03-17-BB25-S
(9)	CRN-0169-01-24-EE22	169	dry filter	1950	CRN-0169-01-24-EE22-S
(10)	CRN-2520-01-17-Y26	2520	dry filter	1968	CRN-2520-01-17-Y26-S
(11)	CRN-3234-16-17-U26	3234	dry filter	2011	CRN-3234-16-17-U26-S
(12)	CRN-3234-17-17-U26	3234	dry filter	2011	CRN-3234-17-17-U26-S
(13)	CRN-3234-15-17-U26	3234	dry filter	1994	CRN-3234-15-17-U26-S
(14)	CRN-0198-01-23-II15	198	dry filter	1975	CRN-0198-01-23-II15-S
(15)	CRN-0227-01-23-HH12	227	dry filter	1991	CRN-0227-01-23-HH12-S
(16)	CRN-0227-02-23-HH12	227	dry filter	1991	CRN-0227-02-23-HH12-S
(17)	CRN-2697-01-17-W24	2697	dry filter	1983	CRN-2697-01-17-W24-S
(18)	CRN-2805-02-23-GG19	2805	dry filter	1995	CRN-2805-02-23-GG19-S
(19)	CRN-2805-03-23-GG19	2805	dry filter	2006	CRN-2805-03-23-GG19-S
(20)	CRN-3168-02-17-V28	3168	dry filter	1988	CRN-3168-02-17-V28-S

(21) Bomb Finishing Line, with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of 120 units per hour, consisting of the following units:

(i) CRN-2728-01-12-N42, exhausting to stack CRN-2728-01-12-N42-S, located in Building 2728, constructed in 1999, using a dry filter to control particulate matter emissions.

(ii) CRN-2728-02-12-N42, exhausting to stack CRN-2728-02-12-N42-S, located in Building 2728, constructed in 1999, using a dry filter to control particulate matter emissions.

(iii) CRN-2728-03-12-N42, exhausting to stack CRN-2728-03-12-N42-S, located in Building 2728, constructed in 1999, using a dry filter to control particulate matter emissions.

(22) CRN-0106-03-23-HH13, located in Building 106, constructed in 2005, equipped with four (4) HVLP guns to paint metal vehicles components, with a maximum primer usage of 5.82 lbs/hr and a maximum topcoat usage of 4.8 lbs/hr, using dry filters to control particulate matter emissions, and exhausting through stack PBS2.

This paint booth is also equipped with one (1) 1.5 MMBtu/hr natural gas burner for paint curing.

(23) One (1) surface coating booth, identified as CRN-0106-04-23-PBS1, constructed in 2007 and located in Building 106, equipped with four (4) high volume low pressure (HVLP) spray applicators used to coat metal military kits, with a maximum primer usage rate of 0.8 gallons per hour and a maximum topcoat usage rate of 0.6 gallons per hour, using dry filters to control particulate matter emissions and exhausting to stack PBS1.

(24) One (1) paint booth, identified as CRN-0151-01-01-PB01, permitted in 2010, and modified in 2011, with a maximum throughput of 1 unit per hour, located in building 151, using HVLP paint guns and dry filters, exhausting to stack CRN-0151-01-01-PB01-S.

None of the paint booth control devices have unit identification numbers.

(e) Open burning/open detonation, constructed/installed before 1950, consisting of:

(1) Open Burning of Ordnance at the Ammunition Burning Ground, identified as CRN-ABG-01-19-DD43, with a maximum usage of 2.3 MMlb/yr (1,150 tons/yr) of Dunnage; 0.64 MMlb/yr (320 tons/yr) of Explosive; 4.7 MMlb/yr (2,350 tons/yr) of Propellant.

(2) Open Detonation of Ordnance at the Demolition Range and the Surveillance Function Test Range, identified as CRN-DR/SFTR-01-24-KK21, with a combined maximum usage of 0.13 MMlb/yr (65 tons/yr) of Dunnage; 1.6 MMlb/yr (800 tons/yr) of Explosive; 0.52 MMlb/yr (260 tons/yr) of Propellant.

(3) Open Burning of Ordnance at the Old Rifle Range, identified as CRN-ORR-01-24-JJ24, with a maximum usage of 0.15 MMlb/yr (75 tons/yr) of Dunnage; 0.032 MMlb/yr (16 tons/yr) of Explosive; 0.012 MMlb/yr (6 tons/yr) of Propellant.

(4) Fast and Slow Cookoff at the Ordnance Test Area, identified as CRN-OTA-01-29-WW18, with a maximum usage of 10,000 units of various ordnances per year.

(f) Mixing and pouring equipment in Building 200 used as a plastic bonded explosive line, constructed in 1984, consisting of mixing and pouring operations, with a maximum process weight rate of 214 pounds per hour, using a carbon adsorption system with a wet scrubber to control particulate matter emissions.

(g) Explosive bomb loading operations consisting of:

(1) screening and weighing aluminum powder in Building 2714, constructed in 1987, using a baghouse for particulate control, with a maximum process weight rate of 161.5 pounds per hour;

(2) screening and weighing TNT in Building 153, constructed in 1987, using a wet scrubber for particulate control, with a maximum process weight rate of 641.8 pounds per hour; and

(3) melting and mixing aluminum powder and TNT in Building 152, constructed in 1987, using a wet scrubber for particulate control, with a maximum process weight rate of 8,032.5 pounds per hour.

(4) One (1) aluminum powder sieve, constructed in 2009, identified as CRN-0155-05-A1 and located in Building 155, with a total throughput of 20 lbs aluminum powder per hour using a baghouse, identified as CRN-155-05A1-BH1 to control particulate emissions exhausting through stack CRN 0155-05A1-BHI.

(h) One natural gas-fired rotary kiln furnace in Building 69, used for white phosphorus conversion to phosphoric acid, constructed in 1983, with a maximum process weight rate of 480 pounds per hour, and equipped with an integral variable throat venturi scrubber for particulate control.

(i) Service Station (Gasoline/Diesel Dispensing), identified as CRN-3280-04-17-X23, located in Building 3280, with a maximum usage of 350,000 gallons of unleaded gasoline per year, and 350,000 gallons of diesel per year.

(1) Two (2) above ground vertical fixed-roof cone tanks, storing unleaded gasoline, constructed in 1995, identified as:

(A) CRN-3280-01-17-X23, located in Building 3280, with a maximum capacity of 11,600 gallons (43.9 m3), and equipped with a vapor recovery system of 99.9+% removal efficiency;

(B) CRN-3280-02-17-X23, located in Building 3280, with a maximum capacity of 11,600 gallons (43.9 m3), and equipped with a vapor recovery system of 99.9+% removal efficiency.

(j) Testing of fuses, boosters, other explosive devices and dissection of batteries, consisting of:

(1) One (1) containment chamber in Building 2167, constructed in 1986, used to test burn pyrotechnic items, with a maximum process weight rate of 0.66 pounds per hour.

(2) Ten (10) test cells in Building 3235, constructed in 1991, used to test lithium batteries, with a maximum throughput of 149 batteries per year, using a vertical packed-bed tower to control particulate matter emissions.

(3) One (1) battery dissection fume hood in Building 3235, permitted to construct in 2007, used to dissect batteries, using a vertical packed-bed tower to control particulate matter emissions, with a maximum throughput of 730 batteries per year.

(4) One (1) flare testing operation in Building 2869, constructed in 1977, identified as CRN-2869-01-02-V01; using a baghouse for control and having a combined maximum process weight rate less than 100 pounds per hour.

(5) One (1) flare testing operation in Building 366, constructed in 1988, identified as CRN-0366-01-02-V01; using a baghouse for control and having a combined maximum process weight rate less than 100 pounds per hour.

(6) One (1) decoy flare testing operation located at Building 3087, identified as CRN-3087-01-01-W01; constructed in 1981, and permitted in 2011, having a maximum capacity of 240 pounds of net explosive weight (NEW) per day.

(k) One (1) contained detonation chamber, identified as P01, constructed 2001, located in Building 3339, with a maximum capacity of 7,500 pounds per hour gross weight of munitions, 750 pounds per hour net explosive weight (NEW), equipped with one (1) baghouse for particulate control, and exhausting to stack S01.

(l) One (1) diesel-fueled 4160-volt, 1000 kW generator, identified as CRN-3345-01-23-KK11, located in Building 3345, constructed in 2002, exhausting at stack S03, and decommissioned in 2014.

Under 40 CFR 63, Subpart ZZZZ, the generator is considered an affected facility.

(m) One (1) APE 1236 rotary kiln incinerator, identified as P03, constructed in 2003, modified in 2015, located in Building 3343, used to deactivate (combust) the munitions and associated components, with a maximum feed rate of 240 pounds of net explosive weight (NEW) per hour and a maximum heat input rate of 5.0 MMBtu/hr. The waste stream vents through one (1) cyclone (identified as C05, for PM control), one (1) 7.5 MMBtu/hr natural gas-fired afterburner (identified as C06, for VOC and CO control), and one (1) baghouse (identified as C07, for PM control) and exhausts through stack S03.

Under 40 CFR 63, Subpart EEE, the APE 1236 rotary kiln incinerator (P03) is considered a new affected facility under 40 CFR 63.1206(a)(1)(i)(B) and an existing affected facility under 40 CFR 63.1206(a)(1)(ii)(A).

(n) One (1) flare manufacturing process located in Buildings 2504 and 145, constructed in 2002, with a maximum manufacturing capacity of 180 pounds of magnesium teflon viton (MTV) compound per day.

(o) One (1) flare manufacturing process, located in Building 198, constructed in 2002, with a maximum manufacturing capacity of 150 pounds of magnesium teflon viton (MTV) compound per day, discharging to Stacks 1 through 11.

(p) One (1) mill/classifier unit, permitted in 2010, identified as CRN-0126-02-17-W24, located in Building 126, with a maximum flow rate of 300 acfm, using a packed bed scrubber as control, and exhausting to stack CRN-0126-02-17-W24-F.

(q) One (1) chemical conversion process, constructed in 2001, permitted in 2010, identified as CRN-0105-01-12-A12, located in Building 105 with maximum production rate of 2,500 lbs/day picric acid, with emissions controlled by two (2) condensers, identified by CRN-0105-01-12-A12-HX-6 and CRN-0105-01-12-A12-HX-7 and exhausting to stack CRN-0105-01-12-A12-S.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

(a) Natural gas-fired combustion sources with inputs less than ten million (10,000,000) Btu per hour, identified as:

(1) Natural gas-fired boilers, existing and in operation before September 21, 1983, located in the following buildings:

(i) one boiler in each of the following buildings: 7,14, 18, 224, 1909, 2037, 2044, 2059, 2074, 2084, 2721, 2749, 2993, 3006 [326 IAC 6-2-3]

(ii) two boilers in the following building: 2521 [326 IAC 6-2-3]

(iii) one (1) 3.35 MMBtu natural gas-fired boiler, identified as CRN-1819-01-17-Y23, constructed in 1981, located in Building 1819, and exhausting to stack CRN-1819-01-17-Y23-S [326 IAC 6-2-3]

(2) Natural gas-fired boilers, constructed after September 21, 1983, located in the following buildings:

(i) one boiler in each of the following buildings: 2, 4, 5, 8, 10, 11, 34, 36, 38, 40, 45, 47, 66, 74, 77, 128, 180, 199, 300, 363, 365, 366, 479, 966, 2036, 2045, 2167, 2390, 2516, 2518, 2521, 2547, 2692, 2693, 2720, 2748, 2807, 2963, 2987, 3054, 3083, 3149, 3173, 3188, 3271, 3272, 3278, 3235, 3239, 3243, 3250, 3271, 3272, 3278, 3284, 3285, 3319, 3324, 3325, 3333, 3339, 3344, 3347, 3348, 3422 [326 IAC 6-2-4]

(ii) two boilers in each of the following buildings: 200, 1819, 2035, 2517, 2523, 2540, 3168, 3373, 3395, 3484 [326 IAC 6-2-4]

(iii) three boilers in each of the following buildings: 3287 and 3291 [326 IAC 6-2-4]

(iv) eleven boilers in the following building: 3330 [326 IAC 6-2-4]

(v) one (1) 0.862 MMBtu natural gas-fired boiler, constructed in 2003, located in Building 74 [326 IAC 6-2-3]

(b) Degreasing operations that do not exceed one hundred forty-five (145) gallons per twelve(12) months, except if subject to 326 IAC 20-6 [326 IAC 8-3].

(c) The following equipment related to manufacturing activities not resulting in the emission of HAP's: brazing, cutting torches, soldering, and welding.

(d) Activities related to routine fabrication, maintenance, and repair of buildings, structures, equipment, or vehicles at the source where air emissions from those activities would not be associated with any commercial production process, including the following: brazing, soldering, or welding operations and associated equipment.

(e) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors, and electrostatic precipitators with a design grain loading of less than or equal to three one-hundredths (0.03) grains per actual cubic foot and a gas flow rate less than or equal to four thousand (4,000) actual cubic feet per minute, including the following: deburring, buffing, polishing, pneumatic conveying, and woodworking operations.

(f) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat inputs less than six million (6,000,000) Btu per hour.

(h) A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage tank of less than 10,500 gallon capacity.

(i) A petroleum fuel, other than gasoline, dispensing facility, having a storage tank of less than 10,500 gallon capacity, and dispensing less than 230,000 gallons per month.

(j) Storage tanks less than one thousand (1,000) gallons in capacity with annual throughputs less than twelve thousand (12,000) gallons.

(k) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings.

(l) Machining where an aqueous cutting coolant continuously floods the machine interface.

(m) Solvent recycling systems with less than 100 gallon batch capacity.

(n) Activities associated with the treatment of wastewater streams with an oil and grease content less than 1% by volume.

(o) Activities associated with the transportation and treatment of sanitary sewage, provided discharge to the treatment plant is under the control of the owner/operator, that is, an on site sewage treatment facility.

(p) Natural draft cooling towers circulating less than or equal to 340,000 gallons per day.

(q) Quenching operations used with heat treating processes.

(r) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.

(s) Paved and unpaved roads and parking lots with public access [326 IAC 6-4].

(t) Asbestos abatement projects regulated by 326 IAC 14-10.

(u) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks and fluid handling equipment.

(v) Blowdown for any of the following: sight glass, boiler, compressors, pumps and cooling tower.

(w) On-site fire and emergency response training approved by the department.

(x) Gasoline generators not exceeding 110 hp.

(y) Activities associated with emergencies, including diesel generators not exceeding 1,600 horsepower.

(1) Diesel-fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture Date (Permitted) Date	NSPS	NESHAP
(A)	CRN-0002-02-17-U21	2	134	1989		ZZZZ
(B)	CRN-0004-01-17-U21	4	174	2007	IIII	ZZZZ
(C)	CRN-0010-01-17-U21	10	268	2007	IIII	ZZZZ
(D)	CRN-0069-01-23-KK11	69	536	1986		ZZZZ
(E)	CRN-0105-01-23-EE13	105	107	2005		ZZZZ
(F)	CRN-0104-05-23-HH16	104	33.53	2009	IIII	ZZZZ
(G)	CRN-0150-04-17-CC23	150	308	2009	IIII	ZZZZ
(H)	CRN-0160-03-17-AA24	160	33.5	2009	IIII	ZZZZ
(I)	CRN-0200-02-23-KK13	200	619	2014	IIII	ZZZZ
(J)	CRN-1819-03-17-Y23	1819	268	1987		ZZZZ
(K)	CRN-1820-15-17-Y23	1820	268	1987		ZZZZ
(L)	CRN-1894-01-17-W22	1894	17	1984		ZZZZ
(M)	CRN-2384-01-16-BB13	2384	40	1984		ZZZZ
(N)	CRN-2540-01-23-H14	2540	201	2010	IIII	ZZZZ
(O)	CRN-2540-02-23-H14	2540	359	2015	IIII	ZZZZ
(P)	CRN-2688-01-21-Y64	2688	67	2008	IIII	ZZZZ

	Unit ID	Building	Maximum Capacity (hp)	Manufacture Date (Permitted) Date	NSPS	NESHAP
(Q)	CRN-2737-08-12-M41	2737	168	2008 (2013)	IIII	ZZZZ
(R)	CRN-2928-01-2-J17	2928	40	1972 (2013)		
(S)	CRN-3049-01-23-FF17	3049	671	1993		ZZZZ
(T)	CRN-3049-02-23-FF18	3049	1194	2014	IIII	ZZZZ
(U)	CRN-3114-01-2-L11	3114	174	2000		ZZZZ
(V)	CRN-3173-01-17-W24	3173	1006	1988		ZZZZ
(W)	CRN-3173-02-17-W24	3173	1006	1998		ZZZZ
(X)	CRN-3235-01-17-V26	3235	134	1990 (2013)		ZZZZ
(Y)	CRN-3287-01-17-X25	3287	201	1996		ZZZZ
(Z)	CRN-3372-01-23-MM11	3372	27	2004	IIII	ZZZZ
(AA)	CRN-3373-01-17-W25	3373	275	2006	IIII	ZZZZ
(BB)	CRN-3398-01-24-II21	3398	34	2009	IIII	ZZZZ

(2) Diesel-fired emergency pumps:

(A) One (1) diesel-fired emergency sewer lift pump, identified as CRN-2517-03-10-T21, located in Building 2517, with a maximum capacity of 55 hp and manufactured in 2007.

Under 40 CFR 60, Subpart IIII, the emergency generator is considered an affected facility. Under 40 CFR 63, Subpart ZZZZ, the emergency pump is considered an affected facility.

(z) Natural gas turbines not exceeding 16,000 hp, including the following:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture (Approved for Installation) Date	NSPS	NESHAP
(1)	CRN-0005-01-10-T21	5	80.64	2013	JJJJ	ZZZZ
(2)	CRN-0010-02-17-U21	10	40.23	2007	JJJJ	ZZZZ
(3)	CRN-0059-01-8-N6	59	10.6	2008	JJJJ	ZZZZ
(4)	CRN-0061-01-5-D43	61	10.6	1976		ZZZZ
(5)	CRN-0300-01-17-X21	300	44.25	1993		ZZZZ
(6)	CRN-3318-01-22-LL9	3318	33.53	1999		ZZZZ
(7)	CRN-3320-01-17-R21	3320	33.53	2009	JJJJ	ZZZZ
(8)	CRN-3334-01-17-V26	3334	402.3	2012	JJJJ	ZZZZ
(9)	CRN-3334-02-17-V26	3334	402.3	2012	JJJJ	ZZZZ
(10)	CRN-3461-01-10-K22	3461	33.52	2009	JJJJ	ZZZZ

(aa) Stationary fire pumps.

(bb) Filter or coalescer media changeout.

(cc) A laboratory as defined in 326 IAC 2-7-1(21)(D).

(dd) Activities with emissions equal to or less than thresholds:

Lead (Pb) = 0.6 ton/year or 3.29 lbs/day
Carbon Monoxide (CO) = 25 lbs/day

Sulfur Dioxide (SO_2) = 5 lbs/hour or 25 lbs/day
Particulate matter (PM) = 5 lbs/hour or 25 lbs/day
Nitrogen Oxides (NOx) = 5 lbs/hour or 25 lbs/day
Volatile Organic Compounds (VOC) = 3 lbs/hour or 15 lbs/day

(1) Alphos tank, located in Building 2521;

(2) Brown oxide line, located in Building 38;

(3) Bubble tester. Located in Building 2931;

(4) Coating, phosphorus, located in Building 1884;

(5) Curing room, located in Building 3148;

(6) Four (4) detonations cells, located in Building 142;

(7) Electrical discharge, located in Building 198;

(8) Environmental chamber, located in Building 2167;

(9) Explosives chamber, located in Building 142;

(10) Explosives mixing, located in Building 200;

(11) Explosives molding, located in Building 126;

(12) Heating oil bath, located in Building 39;

(13) Two (2) hood, fumes, located in 2940;

(14) Hood, vent, located in Building 38;

(15) Infrared dry, located in Building 2036;

(16) Three (3) injection molders, located in Building 198;

(17) IR Heater, located in Building 38;

(18) Oven, located in Building 2940;

(19) Three (3) drying ovens, located in Building 3234;

(20) Laboratory oven, located in Building 109;

(21) Fugitive emissions from painting;

(22) Passivation process, located in Building 1884;

(23) Plating lines A, B, and C, located in Building 3234;

(24) Rust inhibitor, located in Building 1884;

(25) Solvent hand wiping, located in Building 155;

(26) Miscellaneous solvent usage in Building 2728;

(27) Fifty (50) above ground storage tanks;

(28) Twenty-nine (29) underground storage tanks;

(29) One (1) fuel storage tank, located at Building 2760;

(30) Paint stripper, resistant, located in Building 38;

(31) Tank, brighteners, located at Building 1884;

(32) Washer, roller, located in Building 18;

(33) Washout unit, located in Building 18;

(34) One hundred and fifty-eight electric or steam powered air compressors:

(35) One (1) Dispo Spray Booth, Model L130, with a maximum capacity of nine (9) twelve (12) ounce paint cans per month, with no overspray and used for repairing small microwave warfare components consisting of aluminum and glass.

(36) One (1) strand burner, located in Building 142, used for a maximum of 25 tests of differing materials per day, with no pollution control.

(37) One (1) touch up paint booth, identified as CRN-0155-04-17-BB25, located in Building 155 and using a dry filter to control particulate emissions.

(38) One (1) steam kettle for the refinement of trinitrotoluene (TNT), approved for construction in 2009, identified as CRN-0160-01-A, with a maximum batch throughput of 120 lb TNT per hour and a total throughput of 2,400 lb TNT per day, controlled by a wet scrubber, identified as Scrubber 1, exhausting to stack S-1.

(39) One (1) steam kettle for the refinement of trinitrotoluene (TNT), approved for construction in 2009, identified as CRN-0160-02-B, with a maximum batch throughput of 120 lb TNT per hour and a total throughput of 2,400 lb TNT per day, controlled by a wet scrubber, identified as Scrubber 2, exhausting to stack S-2.

(ee) Emissions from research and development activities as defined in 326 IAC 2-7-1(21)(E): One (1) experimental catalytic converter equipped diesel-fired generator, located at the test platform at Building 3235.

(ff) One (1) C-4 extruder process line, located in Building 2172, with a maximum manufacturing capacity of forty (40) 1.2 pound C-4 blocks per minute.

(gg) Seven (7) Propane fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufactured (Installed) [Permitted]	NSPS	NESHAP
(1)	CRN-0002-01-17-U21	2	181	2006 (2006)		ZZZZ
(2)	CRN-0016-01-10-R22	16	168	1942 (1942)		ZZZZ
(3)	CRN-2516-01-17-W22	2516	27	1992 (1992)		ZZZZ
(4)	CRN-2517-04-10-T21	2517	27	(1990) [2013]		ZZZZ

	Unit ID	Building	Maximum Capacity (hp)	Manufactured (Installed) [Permitted]	NSPS	NESHAP
(5)	CRN-3450-01-MW-01	3450	47	2009 (2009)	JJJJ	ZZZZ
(6)	CRN-3452-01-MW-02	3452	47	2009 (2009)	JJJJ	ZZZZ
(7)	CRN-3454-01-MW-03	3454	47	2009 (2009)	JJJJ	ZZZZ

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]

(a) This permit, T101-32904-00005, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7][IC 13-17-12]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(35).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

The Permittee shall implement the PMPs.

(b) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ or Southwest Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Southwest Regional Office phone: (812) 380-2305; fax: (812) 380-2304**.**

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(8) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to T101-32904-00005 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit

for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision or notice shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b) or (c) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-

20(b)(1) and (c)(1). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1) and (c)(1).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(37)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19][326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314][326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1][IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.4 Incineration [326 IAC 4-2][326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-1 (3), 326 IAC 1-7-2, 326 IAC 1-7-3 (c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5 (a), (b), and (d) are not federally enforceable.

C.7 Asbestos Abatement Projects [326 IAC 14-10][326 IAC 18][40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6]

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U.S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)][40 CFR 64][326 IAC 3-8]

(a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) For monitoring required by CAM, at all times, the Permittee shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(d) For monitoring required by CAM, except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

C.11 Instrument Specifications [326 IAC 2-1.1-11][326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale. The analog instrument shall be capable of measuring values outside of the normal range.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]

C.12 Emergency Reduction Plans [326 IAC 1-5-2][326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.13 Risk Management Plan [326 IAC 2-7-5(11)][40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.14 Response to Excursions or Exceedances [40 CFR 64][326 IAC 3-8][326 IAC 2-7-5][326 IAC 2-7-6]

(I) Upon detecting an excursion where a response step is required by the D Section, or an exceedance of a limitation, not subject to CAM, in this permit:

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

(II)

(a) CAM *Response to excursions or exceedances.*

(1) Upon detecting an excursion or exceedance, subject to CAM, the Permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return

operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(2) Determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

(b) If the Permittee identifies a failure to achieve compliance with an emission limitation, subject to CAM, or standard, subject to CAM, for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the Permittee shall promptly notify the IDEM, OAQ and, if necessary, submit a proposed significant permit modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

(c) Based on the results of a determination made under paragraph (II)(a)(2) of this condition, the EPA or IDEM, OAQ may require the Permittee to develop and implement a Quality Improvement Plan (QIP). The Permittee shall develop and implement a QIP if notified to in writing by the EPA or IDEM, OAQ.

(d) Elements of a QIP:
The Permittee shall maintain a written QIP, if required, and have it available for inspection. The plan shall conform to 40 CFR 64.8 b (2).

(e) If a QIP is required, the Permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the IDEM, OAQ if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

(f) Following implementation of a QIP, upon any subsequent determination pursuant to paragraph (II)(c) of this condition the EPA or the IDEM, OAQ may require that the Permittee make reasonable changes to the QIP if the QIP is found to have:

(1) Failed to address the cause of the control device performance problems; or

(2) Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(g) Implementation of a QIP shall not excuse the Permittee from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.

(h) *CAM recordkeeping requirements.*

(1) The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to paragraph (II)(c) of this condition and any activities undertaken to implement a quality improvement plan,

and other supporting information required to be maintained under this condition (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

(2) Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit by July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(33) (“Regulated pollutant, which is used only for purposes of Section 19 of this rule”) from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6][326 IAC 2-2] [326 IAC 2-3]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, where applicable:

(AA) All calibration and maintenance records.
(BB) All original strip chart recordings for continuous monitoring instrumentation.
(CC) Copies of all reports required by the Part 70 permit.

Records of required monitoring information include the following, where applicable:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.
(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
(DD) The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

(c) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A), 326 IAC 2-2-8 (b)(6)(B), 326 IAC 2-3-2 (l)(6)(A), and/or 326 IAC 2-3-2 (l)(6)(B)) that a “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Before beginning actual construction of the “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.

(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;

(ii) Projected actual emissions;

(iii) Amount of emissions excluded under section

326 IAC 2-2-1(pp)(2)(A)(iii) and/or 326 IAC 2-3-1 (kk)(2)(A)(iii); and

(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(d) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A) and/or 326 IAC 2-3-2 (l)(6)(A)) that a "project" (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

(2) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)][326 IAC 2-1.1-11][326 IAC 2-2] [326 IAC 2-3][40 CFR 64][326 IAC 3-8]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

On and after the date by which the Permittee must use monitoring that meets the requirements of 40 CFR Part 64 and 326 IAC 3-8, the Permittee shall submit CAM reports to the IDEM, OAQ.

A report for monitoring under 40 CFR Part 64 and 326 IAC 3-8 shall include, at a minimum, the information required under paragraph (a) of this condition and the following information, as applicable:

(1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

(2) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

(3) A description of the actions taken to implement a QIP during the reporting period as specified in Section C-Response to Excursions or Exceedances. Upon completion of a QIP, the owner or operator shall include in the next summary

report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

The Permittee may combine the Quarterly Deviation and Compliance Monitoring Report and a report pursuant to 40 CFR 64 and 326 IAC 3-8.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit, “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

(e) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C - General Record Keeping Requirements for any “project” (as defined in 326 IAC 2-2-1 (oo) and/or 326 IAC 2-3-1 (jj)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (ww) and/or 326 IAC 2-3-1 (pp), for that regulated NSR pollutant, and

(2) The emissions differ from the preconstruction projection as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(ii).

(f) The report for project at an existing emissions unit shall be submitted no later than sixty (60) days after the end of the year and contain the following:

(1) The name, address, and telephone number of the major stationary source.

(2) The annual emissions calculated in accordance with (d)(1) and (2) in Section C - General Record Keeping Requirements.

(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).

(4) Any other information that the Permittee wishes to include in this report such as an explanation as to why the emissions differ from the preconstruction projection.

Reports required in this part shall be submitted to:

Indiana Department of Environmental Management

Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(g) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with applicable standards for recycling and emissions reduction.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(a) Thirteen (13) abrasive blasting units, consisting of:

	Unit ID (Previous ID) [Descriptor]	Bldg	Year Installed (Modified)	Abrasive Used (lb/yr)	Filter Type	Stack Exhaust
(1)	CRN-0104-03-23-HH16 (CRN-2171-01-17-DD22)	104	2007	1,000	filter system	CRN-0104-03-23-HH16-S
(2)	CRN-0106-02-23-HH13	106	1988	3,000	baghouse	CRN-0106-02-23-HH13-S1, S2
(3)	CRN-2521-07-02-J17	2521	after 1987	36,036	filter system	CRN-2521-07-02-J17-S
(4)	CRN-2521-08-02-J17	2521	after 1987	36,036	filter system	CRN-2521-08-02-J17-S
(5)	CRN-2521-09-2-J17	2521	after 1987	36,036	filter system	CRN-2521-09-2-J17-S
(6)	CRN-3234-14-17-U26	3234	1993	36,036	filter system	CRN-3234-14-17-U26-S
(7)	CRN-0227-03-23-HH12	227	before 1991	3,000	baghouse	CRN-0227-03-23-HH12-S
(8)	CRN-3168-03-17-V28	3168	1988	1,000	filter system	CRN-0041-06,07,08-17-V25-S
(9)	CRN-0041-06-17-V25	41	1993 (2006)	1,000	filter system	CRN-0041-06,07,08-17-V25-S
(10)	CRN-0041-07-17-V25	41	1993 (2006)	1,000	filter system	CRN-0041-06,07,08-17-V25-S
(11)	CRN-0041-08-17-V25	41	1993 (2006)	1,000	filter system	CRN-0041-06,07,08-17-V25-S
(12)	CRN-0107-06-23-HH13 [Barrel blast system]	107	2005	30,660	baghouse	ABS1
(13)	CRN-0107-07-23-HH13 [Vertical descaling machine]	107	2005	183,960	baghouse	ABS2

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter Emissions Limitations [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate matter (PM) emissions from following abrasive blasting units:

(1) CRN-0106-02-23-HH13, located in Building 106;
(2) CRN-2521-08-02-J17, located in Building 2521;
(3) CRN-2521-09-02-J17, located in Building 2521;
(4) CRN-3234-14-17-U26, located in Building 3234;
(5) CRN-3168-03-17-V28, located in Building 3168;

shall not exceed 0.551 pounds per hour when operating at a process weight rate less than 100 pounds per hour.

(b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate matter (PM) emissions from the abrasive blasting units shall not exceed the limitations in the table below:

Unit ID	Unit Description	Maximum Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
CRN-0107-06-23-HH13	Barrel Blast System	0.48	2.51
CRN-0107-07-23-HH13	Vertical Descaling Machine	1.25	4.76

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.2 PSD Minor Limits PM/PM_{10} [326 IAC 2-2]

Pursuant to MPM 101-21373-00005 (issued September 24, 2005) and in order to make the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with PM/PM_{10} emission limits listed in the table below:

Unit ID	Unit Description	PM Emission Limit (lbs/hr)	PM_{10} Emission Limit (lbs/hr)
CRN-0107-06-23-HH13	Barrel Blast System	1.00	0.50
CRN-0107-07-23-HH13	Vertical Descaling Machine	4.50	2.80

With the above limits, the emissions from the modification in 2005 are limited to less than twenty-five (25) tons per twelve (12) consecutive month period for PM and less than fifteen (15) tons per twelve (12) consecutive month period for PM_{10}. Therefore, the requirements of 326 IAC 2-2 (PSD) are rendered not applicable to the 2005 modification.

D.1.3 Minor Source Modifications [326 IAC 2-7-10.5(d)]

Pursuant to 326 IAC 2-7-10.5(d)(4)(C) (Minor Source Modifications) and Minor Source Modification No.: 101-21188-00005, issued on June 29, 2005, the baghouses for the barrel blast system (CRN-0107-06-23-HH13) and the vertical descaling machine (CRN-0107-07-23-HH13) shall comply with the following limits when the barrel blast system or the vertical descaling machine is in operation:

(a) At least 99% control efficiency; and

(b) No visible emissions.

D.1.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for the barrel blast system and the vertical descaling machine and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.1.5 Particulate Matter (PM and PM_{10}) Control [326 IAC 2-7-6(6)]

(a) In order to comply with Conditions D.1.1, D.1.2, and D.1.3, the filter systems and baghouses for particulate (PM and PM_{10}) control shall be in operation at all times the abrasive blasting operations are in use and the Permittee shall operate the control devices in accordance with manufacturer's specifications.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.1.6 Visible Emissions Notations

(a) Visible emission notations of the stack exhausts for stacks ABS1 and ABS2, for the barrel blast system and the vertical descaling machine, shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.1.7 Broken Bag or Filter System Failure Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.1.8 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.6, the Permittee shall maintain records of daily visible emission notations of the ABS1 and ABS2 stack exhausts for the barrel blast system and the vertical descaling machine. The Permittee shall include in its

daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(b) Twenty-six (26) boilers, consisting of:

	Unit ID	Make	Building	Fuels*	Initially Constructed	Reconstructed	Max Capacity (MMBtu/hr)	Exhaust Stack
(1)	CRN-0115-01-23-GG12	Cleaver Brooks	115	NG	1997	--	16.75	CRN-0115-01-23-GG12-S
(2)	CRN-0128-01-17-W25	Cleaver Brooks	128	NG	1997	--	16.75	CRN-0128-01-17-W25-S
(3)	CRN-0115-03-23-GG12	Cleaver Brooks	115	NG/FO	1997	--	16.75	CRN-0115-02-23-GG12-S
(4)	CRN-0128-03-17-W25	Cleaver Brooks	128	NG/FO	1997	--	16.75	CRN-0128-03-17-W25-S
(5)	CRN-0064-02-10-T27	Cleaver Brooks	64	NG/FO	1976	2010	16.00	CRN-0064-01-10-T27-S
	The above boilers (b)(1), (b)(2), (b)(3), (b)(4) and (b)(5) are affected boilers under 40 CFR 60, Subpart Dc.							
(6)	CRN-0115-02-23-GG12	Cleaver Brooks	115	NG/FO	1985	--	6.2	CRN-0115-03-23-GG12-S
(7)	CRN-0140-03-17-Y25	Cleaver Brooks	140	NG/FO	2013	--	5.1	CRN-0140-03-17-Y25-S
(8)	CRN-0140-04-17-Y25	Cleaver Brooks	140	NG/FO	2013	--	5.1	CRN-0140-02-17-Y25-S
(9)	CRN-0150-01-17-CC23	Cleaver Brooks	150	NG/FO	April 1989	--	25.2	CRN-0150-01-17-CC23-S
(10)	CRN-0150-03-17-CC23	Cleaver Brooks	150	NG/FO	April 1989	--	25.2	CRN-0150-03-17-CC23-S
(11)	CRN-0199-01-23-JJ14	Cleaver Brooks	199	NG/FO	1978	--	17.5	CRN-0199-01-23-JJ14-S
(12)	CRN-0199-02-23-JJ14	Cleaver Brooks	199	NG/FO	1978	--	17.5	CRN-0199-02-23-JJ14-S
(13)	CRN-2737-01-12-M41	Cleaver Brooks	2737	NG/FO	1987	--	12.5	CRN-2737-01-12-M41-S
(14)	CRN-2737-02-12-M41	Cleaver Brooks	2737	NG/FO	1987	--	12.5	CRN-2737-02-12-M41-S
(15)	CRN-3234-02-17-U26	Superior	3234	NG/FO	1992	--	8.4	CRN-3234-02-17-U26-S
(16)	CRN-3234-03-17-U26	Superior	3234	NG/FO	1992	--	8.4	CRN-3234-03-17-U26-S
(17)	CRN-0041-04-17-U26	York-Shipley	41	NG/FO	1983	2011	6.9	CRN-0041-02-17-U26-S

(18)	CRN-0041-03-17-U26	Hurst	41	NG/FO	1977	2008	8.4	CRN-0041-02-17-U26-S
(19)	CRN-0128-02-17-W25	Cleaver Brooks	128	NG/FO	1984	--	6.2	CRN-0128-02-17-W25-S
(20)	CRN-0149-01-10-S30	Cleaver Brooks	149	NG/FO	1980	2015	6.2	CRN-0149-01-10-S30-S
(21)	CRN-0149-02-10-S30	Cleaver Brooks	149	NG/FO	1980	2015	6.2	CRN-0149-02-10-S30-S
(22)	CRN-0180-01-17-W22	Cleaver Brooks	180	NG/FO	1999	--	4.19	CRN-0180-01-17-W22-S
(23)	CRN-0180-02-17-W22	Cleaver Brooks	180	NG/FO	1999	--	4.19	CRN-0180-02-17-W22-S
(24)	CRN-2674-03-00-0001	Cleaver Brooks	2674	NG/FO	2013	--	6.7	CRN-2674-03-00-0001-S
(25)	CRN-2674-04-00-0001	Cleaver Brooks	2674	NG/FO	2013	--	6.7	CRN-2674-02-00-0001-S
(26)	CRN-2737-04-12-M41	Cleaver Brooks	2737	NG/FO	2014	--	5.02	CRN-2737-03-12-M41-S

*NG - Natural Gas / FO - distillate fuel No.2

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 Particulate Matter Emissions Limitations [326 IAC 6-2-3]

Pursuant to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating), the PM emissions from the boilers which were existing and in operation or which received permits to construct prior to September 21, 1983, shall not exceed 0.05 pounds per million Btu heat input (lb/MMBtu).

Unit ID	Building Location	Heat Input Capacity (MMBtu/hr)
CRN-0140-01-17-Y25	Building 140	6.20
CRN-0140-02-17-Y25	Building 140	6.20
CRN-0149-01-10-S30	Building 149	6.70
CRN-0149-02-10-S30	Building 149	6.70
CRN-0199-01-23-JJ14	Building 199	17.50
CRN-0199-02-23-JJ14	Building 199	17.50

D.2.2 Particulate Matter Emissions Limitations [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from the boilers listed below, receiving permits to construct after September 21, 1983, shall not exceed the following (in pound per million Btu heat input (lb/MMBtu) for each boiler):

Unit ID	Building Location	Installation Date	**Pt** (lb/MMBtu)
CRN-0128-02-17-W25	128	1984	0.30

Unit ID	Building Location	Installation Date	**Pt** (lb/MMBtu)
CRN-2737-01-12-M41	2737	1987	0.27
CRN-2737-02-12-M41	2737	1987	0.27
CRN-0150-01-17-CC23	150	1989	0.25
CRN-0150-03-17-CC23	150	1989	0.25
CRN-3234-02-17-U26	3234	1992	0.25
CRN-3234-03-17-U26	3234	1992	0.25
CRN-0115-01-23-GG12	115	1997	0.23
CRN-0128-01-17-W25	128	1997	0.23
CRN-0115-02-23-GG12	115	1997	0.23
CRN-0128-03-17-W25	128	1997	0.23
CRN-0180-01-17-W22	180	1999	0.23
CRN-0180-02-17-W22	180	1999	0.23
CRN-0041-03-17-U26	41	2008	0.22
CRN-0041-04-17-U26	41	2010	0.22
CRN-0064-02-10-T27	64	2010	0.22
CRN-2674-03-00-0001	2674	2013	0.22
CRN-2674-04-00-0001	2674	2013	0.22

D.2.3 Sulfur Dioxide Emissions Limitations [326 IAC 7-1.1-2]

Pursuant to 326 IAC 7-1.1-2, the following boilers shall each be limited to five tenths (0.5) pounds of sulfur dioxide (SO_2) per million Btu when combusting distillate oil:

Unit ID	Building Location
CRN-0199-01-23-JJ14	Building 199
CRN-0199-02-23-JJ14	Building 199
CRN-0115-03-23-GG12	Building 115
CRN-0128-02-17-W25	Building 128
CRN-0150-01-17-CC23	Building 150
CRN-0150-03-17-CC23	Building 150
CRN-2737-01-12-M41	Building 2737
CRN-2737-02-12-M41	Building 2737

D.2.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for these boilers. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.2.5 Sulfur Dioxide Emissions and Sulfur Content

Compliance shall be determined utilizing one of the following options:

(a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pounds per million Btu by:

(1) Providing vendor analysis of fuel delivered, if accompanied by a certification;

(2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.

(A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and

(B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or

(b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the boiler, using 40 CFR Part 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to either of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.2.6 Visible Emissions Notations

(a) Visible emission notations of the following boiler stack exhausts shall be performed once per day during normal daylight operations when combusting No. 2 fuel oil only. A trained employee shall record whether emissions are normal or abnormal.

Unit ID	Building Location
CRN-0199-01-23-JJ14	Building 199
CRN-0199-02-23-JJ14	Building 199
CRN-0115-03-23-GG12	Building 115
CRN-0128-02-17-W25	Building 128
CRN-0150-01-17-CC23	Building 150
CRN-0150-03-17-CC23	Building 150
CRN-2737-01-12-M41	Building 2737
CRN-2737-02-12-M41	Building 2737

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.2.7 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.3, the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (6) shall be taken monthly and shall be complete and sufficient to establish compliance with the SO_2 emission limit established in Condition D.2.3.

(1) Calendar dates covered in the compliance determination period;

(2) Actual fuel oil usage since last compliance determination period and equivalent sulfur dioxide emissions;

(3) To certify compliance when burning natural gas only, the Permittee shall maintain records of fuel used.

If the fuel supplier certification is used to demonstrate compliance, when burning alternate fuels and not determining compliance pursuant to 326 IAC 3-7-4, the following, as a minimum, shall be maintained:

(4) Fuel supplier certifications;

(5) The name of the fuel supplier; and

(6) A statement from the fuel supplier that certifies the sulfur content of the fuel oil.

(b) To document compliance with Condition D.2.6, the Permittee shall maintain records of visible emission notations of the boiler stack exhausts while combusting fuel oil. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.8 Reporting Requirements

A semi-annual summary of the information to document the compliance status with Condition D.2.3 shall be submitted, not later than thirty (30) days following the end of each six (6) month period. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

(c) Two (2) carpentry shops, identified as:

(1) CRN-0224-02-23-HH12, located in Building 224, with a maximum wood usage of 1,000,000 board feet per year and a maximum process weight rate of 0.69 tons per hour, equipped with a cyclone for particulate control and exhausting to stack CRN-0224-02-23-HH12-S. [40 CFR Part 64]

(2) CRN-2720-04-23-GG12, located in Building 2720, with a maximum wood usage of 14,000 board feet per year and a maximum process weight rate of 0.25 tons per hour, equipped with a cyclone for particulate control and exhausting to stack CRN-2720-04-23-GG12-S.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Particulate Matter Emissions Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate matter (PM) emissions from the carpentry shops shall not exceed the limitations in the table below:

Unit ID	Unit Description	Maximum Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
CRN-0224-02-23-HH12	Carpentry Shop	0.69	3.20
CRN-2720-04-23-GG12	Carpentry Shop	0.25	1.62

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.3.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the two (2) carpentry shop operations and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.3.3 Particulate Matter (PM) Control [326 IAC 2-7-6(6)]

In order to ensure compliance with Condition D.3.1, the cyclones for PM control shall be in operation and control emissions from the carpentry shops at all times the carpentry shops are in operation.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.3.4 Visible Emissions Notations [40 CFR Part 64]

(a) Visible emission notations of the cyclone stack exhausts shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.3.5 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emission unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.3.6 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.4, the Permittee shall maintain records of daily visible emission notations of the cyclone stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(d) Twenty-six (26) paint booths, consisting of:

	Unit ID	Building	Particulate Control	Constructed Date	Exhaust Stack
(1)	CRN-0104-03-23-HH16	104	dry filter	2010	CRN-0104-03-23-HH16-F
(2)	CRN-0107-01-23-HH13	107	dry filter	2014	CRN-0107-01-23-HH13-S
(3)	CRN-0107-02-23-HH13	107	dry filter	2014	CRN-0107-02-23-HH13-S
(4)	CRN-0107-03-23-HH13	107	dry filter	1980	CRN-0107-03-23-HH13-S
(5)	CRN-0107-04-23-HH13	107	water wall	1980	CRN-0107-04-23-HH13-S
(6)	CRN-0136-01-17-Z26	136	dry filter	1963	CRN-0136-01-17-Z26-S
(7)	CRN-0155-02-17-BB25	155	dry filter	1986	CRN-0155-02-17-BB25-S
(8)	CRN-0155-03-17-BB25	155	dry filter	1986	CRN-0155-03-17-BB25-S
(9)	CRN-0169-01-24-EE22	169	dry filter	1950	CRN-0169-01-24-EE22-S
(10)	CRN-2520-01-17-Y26	2520	dry filter	1968	CRN-2520-01-17-Y26-S
(11)	CRN-3234-16-17-U26	3234	dry filter	2011	CRN-3234-16-17-U26-S
(12)	CRN-3234-17-17-U26	3234	dry filter	2011	CRN-3234-17-17-U26-S
(13)	CRN-3234-15-17-U26	3234	dry filter	1994	CRN-3234-15-17-U26-S
(14)	CRN-0198-01-23-II15	198	dry filter	1975	CRN-0198-01-23-II15-S
(15)	CRN-0227-01-23-HH12	227	dry filter	1991	CRN-0227-01-23-HH12-S
(16)	CRN-0227-02-23-HH12	227	dry filter	1991	CRN-0227-02-23-HH12-S
(17)	CRN-2697-01-17-W24	2697	dry filter	1983	CRN-2697-01-17-W24-S
(18)	CRN-2805-02-23-GG19	2805	dry filter	1995	CRN-2805-02-23-GG19-S
(19)	CRN-2805-03-23-GG19	2805	dry filter	2006	CRN-2805-03-23-GG19-S
(20)	CRN-3168-02-17-V28	3168	dry filter	1988	CRN-3168-02-17-V28-S

(21) Bomb Finishing Line, with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of 120 units per hour, consisting of the following units:

(i) CRN-2728-01-12-N42, exhausting to stack CRN-2728-01-12-N42-S, located in Building 2728, constructed in 1999, using a dry filter to control particulate matter emissions.

(ii) CRN-2728-02-12-N42, exhausting to stack CRN-2728-02-12-N42-S, located in Building 2728, constructed in 1999, using a dry filter to control particulate matter emissions.

(iii) CRN-2728-03-12-N42, exhausting to stack CRN-2728-03-12-N42-S, located in Building 2728, constructed in 1999, using a dry filter to control particulate matter emissions.

(22) CRN-0106-03-23-HH13, located in Building 106, constructed in 2005, equipped with four (4) HVLP guns to paint metal vehicles components, with a maximum primer usage of 5.82 lbs/hr and a maximum topcoat usage of 4.8 lbs/hr, using dry filters to control particulate matter emissions, and exhausting through stack PBS2. This paint booth is also equipped with one (1) 1.5 MMBtu/hr natural gas burner for paint curing.

(23) One (1) surface coating booth, identified as CRN-0106-04-23-PBS1, constructed in 2007 and located in Building 106, equipped with four (4) high volume low pressure (HVLP) spray applicators used to coat metal military kits, with a maximum primer usage rate of 0.8 gallons per hour and a maximum topcoat usage rate of 0.6 gallons per hour, using dry filters to control particulate matter emissions and exhausting to stack PBS1.

(24) One (1) paint booth, identified as CRN-0151-01-01-PB01, permitted in 2010, and modified in 2011, with a maximum throughput of 1 unit per hour, located in building 151, using HVLP paint guns and dry filters, exhausting to stack CRN-0151-01-01-PB01-S.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.4.1 PSD Minor Limits VOC [326 IAC 2-2]

Pursuant to SSM 101-11153-00005 (issued October 12, 1999), the VOC input to the three paint booths CRN-2728-01-12-N42 (Building 2728), CRN-2728-02-12-N42 (Building 2728), and CRN-2728-03-12-N42 (Building 2728) shall be limited to less than thirty-nine (39.0) tons, including coatings, dilution solvents, and cleaning solvents, per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit shall limit the VOC emissions to less than forty (40) tons per twelve (12) consecutive month period and render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to the three paint booths CRN-2728-01-12-N42 (Building 2728), CRN-2728-02-12-N42 (Building 2728), and CRN-2728-03-12-N42 (Building 2728).

D.4.1.1 PSD Minor Limits VOC [326 IAC 2-2]

Pursuant to SSM 101-30209-00005 (issued May 17, 2011) the VOC input to the two (2) paint booths CRN-3234-16-17-U26 (Building 3234) and CRN-3234-17-17-U26 (Building 3234) shall be limited to less than forty (40) tons, including coatings, dilution solvents, and cleaning solvents, per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits shall limit the VOC emissions to less than forty (40) tons per twelve (12) consecutive month period and render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to the two (2) paint booths CRN-3234-16-17-U26 (Building 3234) and CRN-3234-17-17-U26 (Building 3234).

D.4.2 General Provisions Relating to VOC Rules: Military Specifications [326 IAC 8-1-7] and Site-Specific RACT Plan [326 IAC 8-1-5]

Pursuant to 326 IAC 8-1-7 (Military Specifications) and Significant Source Modification No.: 101-11153-00005, the volatile organic compound (VOC) content of coating delivered to the following:

Bomb Finishing Line, with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of one hundred twenty (120) units per hour, consisting of the following units:

(1) CRN-2728-01-12-N42, located in Building 2728, constructed in 1999;
(2) CRN-2728-02-12-N42, located in Building 2728, constructed in 1999;
(3) CRN-2728-03-12-N42, located in Building 2728, constructed in 1999,

shall be limited to 5.45 pounds of VOCs per gallon of coating less water, for air dried coatings, averaged on a daily basis for each paint booth.

D.4.3 Miscellaneous Metal Coating Operations [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) content of coating delivered to each of the following paint booths shall be limited to 3.5 pounds of VOCs per gallon of coating less water averaged on a daily basis for each paint booth:

(1) CRN-3234-16-17-U26, located in Building 3234, permitted in 2011;
(2) CRN-3234-17-17-U26, located in Building 3234, permitted in 2011;
(3) CRN-3234-15-17-U26, located in Building 3234, constructed in 1994;
(4) CRN-0227-01-23-HH12, located in Building 227, constructed prior to 1991;
(5) CRN-0227-02-23-HH12, located in Building 227, constructed prior to 1991;
(6) CRN-2805-03-23-GG19, located in Building 2805, constructed in 2006;
(7) CRN-0106-03-23-HH13, located in Building 106, constructed in 2005;
(8) CRN-0106-04-23-PBS1, located in Building 106, constructed in 2007.
(11) CRN-0104-03-23-HH16, located in Building 104, constructed in 2010;
(12) CRN-0107-01-23-HH13, located in Building 107, constructed in 2014;
(13) CRN-0107-02-23-HH13, located in Building 107, constructed in 2014;
(12) CRN-0107-03-23-HH13, located in Building 107, constructed in 1980;
(13) CRN-0107-04-23-HH13, located in Building 107, constructed in 1980;
(14) CRN-0155-02-17-BB25, located in Building 155, constructed in 1986;
(15) CRN-0155-03-17-BB25, located in Building 155, constructed in 1986
(16) CRN-2697-01-17-W24, located in Building 2697, constructed in 1983; and
(17) CRN-0151-01-01-PB01, located in Building 151, permitted in 2010 and modified in 2011.

D.4.4 Volatile Organic Compounds (VOC) Limitations, Clean-up Requirements [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9(f), work practices shall be used to minimize VOC emissions from mixing operations, storage tanks, and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include, but not limited to, the following:

(a) Store all VOC containing coatings, thinners, coating related waste, and cleaning materials in closed containers.

(b) Ensure that mixing and storage containers used for VOC containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials.

(c) Minimize spills of VOC containing coatings, thinners, coating related waste, and cleaning materials.

(d) Convey VOC containing coatings, thinners, coating related waste, and cleaning materials from one (1) location to another in closed containers or pipes.

(e) Minimize VOC emissions from the cleaning application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

D.4.5 Particulate [326 IAC 6-3-2(d)]

Pursuant to 326 IAC 6-3-2(d), particulate (PM) emissions from each of the surface coating operations shall be controlled by a dry particulate filter, water wash, or an equivalent control device. The control device shall be operated in accordance with the manufacturer's specifications.

D.4.6 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for each surface coating operation and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.4.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-4][326 IAC 8-1-2(a)]

Compliance with the VOC content and usage limitations contained in Conditions D.4.1, D.4.1.1, D.4.2, and D.4.3 shall be determined as follows:

(a) Pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4; or

(b) Pursuant to 326 IAC 8-1-2(a)(7), using a volume weighted average of coatings on a daily basis. This volume weighted average shall be determined by the following equation:

$$A = [\sum (C) \times U) / \sum U]$$

Where:

A is the volume weighted average in pounds of VOC per gallon less water as applied;
C is the VOC content of the coating in pounds of VOC per gallon less water as applied; and
U is the usage rate of the coating in gallons per day.

D.4.8 Particulate Matter (PM and PM_{10}) Control [326 IAC 2-7-6(6)]

In order to comply with Condition D.4.4, the dry filters or water walls for PM and PM_{10} control shall be in operation at all times the surface coating operations are in use and the Permittee shall operate the control devices in accordance with manufacturer's specifications.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.4.9 Monitoring

(a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the dry filters (except for booth CRN-0198-01-23-II15, exhausting to vent II15, and CRN-3168-02-17-V28, exhausting to vent V28). Daily inspections shall be performed for the water wall to verify the level where surface agitation indicates impact of the air flow. Water shall be kept free of solids and floating material that reduces the capture efficiency of the water wall. To monitor the performance of the water wall and the dry filters, weekly observations shall be made of the overspray from the surface coating booth stacks while one or more of the booths are in operation (except for booth CRN-0198-01-23-II15, exhausting to vent II15, and CRN-3168-02-17-V28, exhausting to vent V28). If a condition exists which should result in a response step, the Permittee shall take reasonable response steps. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(b) Monthly inspections shall be performed of the coating emissions from the stack (except for booth CRN-0198-01-23-II15, exhausting to vent II15, and CRN-3168-02-17-V28, exhausting to vent V28) and the presence of overspray on the rooftops and the nearby ground. When there is a noticeable change in overspray emissions, or when evidence of overspray emissions is observed, the Permittee shall take reasonable response steps. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.4.10 Record Keeping Requirements

(a) To document compliance with Conditions D.4.1, D.4.1.1, and D.4.2, the Permittee shall maintain records in accordance with (1) through (3) below. Records maintained for (1) through (3) shall be taken monthly and shall be complete and sufficient to establish

compliance with the VOC usage limits established in Conditions D.4.1, D.4.1.1(c), and D.4.2.

(1) The VOC content of each coating material and solvent for each month.

(2) The amount of coating material and solvent used on monthly basis.

(A) Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.

(B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvent.

(3) The total VOC usage for each month.

(b) To document compliance with condition D.4.3, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken daily and shall be complete and sufficient to establish compliance with the VOC usage limit established in condition D.4.3.

(1) The VOC content of each coating material and solvent used less water.

(2) The amount of coating material and solvent used on daily basis.

(A) Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.

(B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvent.

(3) The volume weighted average VOC content of the coatings used for each day;

(4) The daily cleanup solvent usage; and

(5) The total VOC usage for each day.

(c) To document compliance with Condition D.4.9, the Permittee shall maintain a log of weekly overspray observations, daily and monthly inspections.

(d) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.4.11 Reporting Requirements

A quarterly report of VOC input and a quarterly summary of the information to document the compliance status with D.4.1 and D.4.1.1 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1(35).

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(e) Open burning/open detonation, constructed/installed before 1950, consisting of:

(1) Open Burning of Ordnance at the Ammunition Burning Ground, identified as CRN-ABG-01-19-DD43, with a maximum usage of 2.3 MMlb/yr (1,150 tons/yr) of Dunnage; 0.64 MMlb/yr (320 tons/yr) of Explosive; 4.7 MMlb/yr (2350 tons/yr) of Propellant.

(2) Open Detonation of Ordnance at the Demolition Range and the Surveillance Function Test Range, identified as CRN-DR/SFTR-01-24-KK21, with a combined maximum usage of 0.13 MMlb/yr (65 tons/yr) of Dunnage; 1.6 MMlb/yr (800 tons/yr) of Explosive; 0.52 MMlb/yr (260 tons/yr) of Propellant.

(3) Open Burning of Ordnance at the Old Rifle Range, identified as CRN-ORR-01-24-JJ24, with a maximum usage of 0.15 MMlb/yr (75 tons/yr) of Dunnage; 0.032 MMlb/yr (16 tons/yr) of Explosive; 0.012 MMlb/yr (6 tons/yr) of Propellant.

(4) Fast and Slow Cookoff at the Ordnance Test Area, identified as CRN-OTA-01-29-WW18, with a maximum usage of 10,000 units of various ordnance per year.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.5.1 RCRA Air Standards and Limitations

(a) The Permittee shall comply with all applicable provisions of 40 CFR 264, Subpart CC.

(b) The Permittee shall notify the Regional Administrator upon planning to treat more than 70 shots per event at the Demolition Range.

(c) The Permittee shall comply with all self-implementing provisions of any future air regulations promulgated under the provisions of Section 3004(n) of RCRA, as amended by Hazardous and Solid Waste Amendments of 1984 (HSWA).

(d) The Permittee shall not exceed the material quantities as follows:

(1) Ammunition Burning Grounds (ABG)

Unit Number	Material	Limited Treatment Quantity (NEW)	
		8-hour Period (pounds)	**Quarterly Period** (tons)
3a-ABG	Propellants	75,000	3,412.5
3b-ABG	Explosives	25,000	1,137.5
3c-ABG	Production Scrap	75,000	3,412.5
6-ABG	Red Phosphorus	1,600	72.8
7-ABG	Pyrotechnics	200	9.1
8-ABG	Black Powder Slurry	250	11.4
10-ABG	Contaminated Sludges	2,000	91.0
11-ABG	Red Phosphorus Sludge	200	9.1
12-ABG	Explosives/Propellants/ Pyrotechnics	300	13.7

Unit Number	Material	Limited Treatment Quantity (NEW)	
		8-hour Period (pounds)	**Quarterly Period** (tons)
13-ABG	Explosives/Pyrotechnics	50,000	2,275.0
4-ABG	Flammable Liquids/Explosives	200	9.1
5-ABG	Flammable liquids contaminated with reactive materials	300	13.7
9-ABG	Contaminated Waste Materials	400	18.2

(2) Old Rifle Range (ORR)

Unit Number	Material	Limited Treatment Quantity (NEW)	
		8-hour Period (pounds)	**Quarterly Period** (tons)
3a-ORR	Yellow D	6,000	273.0
3b-ORR	Projectile Bodies and Yellow D contaminated materials	9,000	409.5

(3) Demolition Range

Unit Number	Material	Limited Treatment Quantity (NEW)	
		24-hour Period (pounds)	**Quarterly Period** (tons)
3-DR	Explosives	55,000	2,502.5

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.5.2 Record Keeping Requirements

(a) To document the compliance status with Condition D.5.1(d), the Permittee shall maintain records detailing the type and amount of waste treated and records of all materials open burned and open detonated.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.5.3 Reporting Requirements

A quarterly report of the net explosive weight (NEW) of all materials open burned and open detonated and a quarterly summary of the information to document the compliance status with D.5.1(d) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1 (35).

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(f) Mixing and pouring equipment in Building 200 used as a plastic bonded explosive line, constructed in 1984, consisting of mixing and pouring operations, with a maximum process weight rate of 214 pounds per hour, using a carbon adsorption system with a wet scrubber to control particulate matter emissions.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.6.1 Particulate Matter Emissions Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate matter (PM) emissions from the mixing and pouring equipment shall not exceed 0.93 pounds per hour when operating at a process weight rate of 0.11 tons per hour.

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.6.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.6.3 Particulate Matter (PM) Control [326 IAC 2-7-6(6)]

In order to ensure compliance with Condition D.6.1, the scrubber for PM shall be in operation and control emissions from the mixing and pouring facility at all times the mixing and pouring facility is in operation.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.6.4 Visible Emissions Notations

(a) Visible emission notations of the wet scrubber stack exhaust from the mixing and pouring operations shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.6.5 Parametric Monitoring

The Permittee shall monitor and record the pressure drop across the scrubber at least once per day when the associated processes are in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a range of 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the response steps required by this condition. A pressure drop reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instruments used for determining the pressure drop shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.6.6 Record Keeping Requirements

(a) To document the compliance status with Condition D.6.4, the Permittee shall maintain daily records of the visible emission notations of the wet scrubber stack exhaust from the mixing and pouring operations. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).

(b) To document the compliance status with Condition D.6.5, the Permittee shall maintain a daily record of the pressure drop across the scrubber controlling the mixing and pouring operations. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(g) Explosive bomb loading operations consisting of:

(1) screening and weighing aluminum powder in Building 2714, constructed in 1987, using a baghouse for particulate control, with a maximum process weight rate of 161.5 pounds per hour;

(2) screening and weighing TNT in Building 153, constructed in 1987, using a wet scrubber for particulate control, with a maximum process weight rate of 641.8 pounds per hour; and

(3) melting and mixing aluminum powder and TNT in Building 152, constructed in 1987, using a wet scrubber for particulate control, with a maximum process weight rate of 8,032.5 pounds per hour.

(4) one (1) aluminum powder sieve, constructed in 2009, identified as CRN-0155-05-A1 and located in Building 155, with a total throughput of 20 lbs aluminum powder per hour using a baghouse, identified as CRN 0155-05A1-BHI, to control particulate emissions exhausting through stack CRN 0155-05A1-BHI.

Insignificant Activities

(dd) (38) One (1) steam kettle for the refinement of trinitrotoluene (TNT), constructed in 2009, identified as CRN-0160-01-A, with a maximum batch throughput of 120 lb TNT per hour and a total throughput of 2,400 lb TNT per day, controlled by a wet scrubber, identified as Scrubber 1, exhausting to stack S-1.

(39) One (1) steam kettle for the refinement of trinitrotoluene (TNT), constructed in 2009, identified as CRN-0160-02-B, with a maximum batch throughput of 120 lb TNT per hour and a total throughput of 2,400 lb TNT per day, controlled by a wet scrubber, identified as Scrubber 2, exhausting to stack S-2.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.7.1 Particulate Matter Emissions Limitations [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate matter (PM) emissions from the explosive bomb loading operations and the steam kettles shall not exceed the limitations in the table below:

Unit Description	**Maximum Throughput Rate** (tons/hr)	**Particulate Emission Limit** (lbs/hr)
Explosive Bomb Loading Operation (Screening and Weighing Aluminum Powder in Building 2714)	0.081	0.13
Explosive Bomb Loading Operation (Screening and Weighing TNT in Building 153)	0.32	1.91

Unit Description	Maximum Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
Explosive Bomb Loading Operation (Melting and Mixing Aluminum Powder in Building 152)	4.02	10.41
Steam Kettle CRN-0160-01-A	0.06	0.623
Steam Kettle CRN-0160-02-B	0.06	0.623

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

(b) Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the aluminum powder sieve identified as CRN-0155-05-A1 shall not exceed 0.551 pounds per hour when operating at a process rate of 0.010 tons per hour.

D.7.2 Prevention of Significant Deterioration (PSD) Minor Limit PM_{10} [326 IAC 2-2]

Pursuant to MPM 101-28267-00005 (issued November 10, 2009), the PM_{10} emissions from the aluminum powder sieve identified as CRN-0155-05-A1 shall be less than 3.42 pounds per hour. Compliance with the above limit shall limit PM_{10} to less than fifteen (15) tons per twelve (12) consecutive month period and render 326 IAC 2-2 not applicable to this modification.

D.7.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for the explosive bomb loading operations and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.7.4 Particulate Matter (PM) Control [326 IAC 2-7-6(6)]

(a) In order to ensure compliance with Condition D.7.1, the baghouses and wet scrubbers for PM control shall be in operation at all times the aluminum powder sieve and the explosive bomb loading operations, and the associated insignificant activities, respectively, are in operation and the Permittee shall operate the control devices in accordance with manufacturer's specifications.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.7.5 Visible Emissions Notations

(a) Visible emission notations of the baghouse stack exhausts from the screening and weighing aluminum powder in Building 2714 shall be performed once per day during normal daylight operation. A trained employee shall record whether emissions are normal or abnormal.

(b) Visible emission notations of the scrubber stack exhausts from the screening and weighing TNT in Building 153 shall be performed once per day during normal daylight operation. A trained employee shall record whether emissions are normal or abnormal.

(c) Visible emission notations of the scrubber stack exhausts from the melting and mixing aluminum powder and TNT in Building 152 shall be performed once per day during normal daylight operation. A trained employee shall record whether emissions are normal or abnormal.

(d) Visible emission notations of the baghouse stack exhaust (stack CRN 0155-05-A1) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(e) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(f) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(g) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(hf) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.7.6 Scrubber Parametric Monitoring

The Permittee shall monitor and record the pressure drop across the wet scrubbers used in conjuction with screening and weighing TNT in Building 153 and melting and mixing aluminum powder and TNT in Building 152 at least once per day when the associated processes are in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the response steps required by this condition. A pressure drop reading that is outside the above mentioned range(s) is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instruments used for determining the pressure drop shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.7.7 Broken or Failed Bag Detection

For the baghouse used in conjunction with the explosive bomb loading operation (screening and weighing aluminum powder in Building 2714) and the aluminum powder sieve located in Building 155:

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouses pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.7.8 Record Keeping Requirements

(a) To document the compliance status with Condition D.7.5, the Permittee shall maintain records of daily visible emission notations of the baghouse and wet scrubber stack exhausts from the explosive bomb loading operations and the aluminum powder sieve. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).

(b) To document the compliance status with Condition D.7.6, the Permittee shall maintain daily records of the pressure drop across the scrubbers controlling the explosive bomb loading operations (screening and weighing of TNT in Building 153 and the melting and mixing of aluminum powder and TNT in Building 152). The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.8 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(h) One natural gas-fired rotary kiln furnace in Building 69, used for white phosphorus conversion to phosphoric acid, constructed in 1983, with a maximum process weight rate of 480 pounds per hour, and equipped with an integral variable throat venturi scrubber for particulate control.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.8.1 Particulate Matter Emissions Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate matter (PM) emissions from the rotary kiln shall not exceed 1.58 pounds per hour when operating at a process weight rate of 0.24 tons per hour.

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.8.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for the rotary kiln furnace and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.8.3 Particulate Matter (PM) Control [326 IAC 2-7-6(6)]

In order to comply with Condition D.8.1, the variable throat venturi scrubber for PM control shall be in operation and control emissions from the rotary kiln furnace at all times the rotary kiln furnace is in operation.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.8.4 Visible Emissions Notations

(a) Visible emission notations of variable throat venturi scrubber stack exhausts shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.8.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.8.4, the Permittee shall maintain daily records of visible emission notations of the variable throat venturi scrubber stack exhaust from the rotary kiln furnace. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.9 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(i) Service Station (Gasoline/Diesel Dispensing), identified as CRN-3280-04-17-X23, located in Building 3280, with a maximum usage of 350,000 gallons of unleaded gasoline per year; and 350,000 gallons of diesel per year.

(1) Two (2) above ground vertical fixed-roof cone tanks, storing unleaded gasoline, constructed in 1995, identified as:

(A) CRN-3280-01-17-X23, located in Building 3280, with a maximum capacity of 11,600 gallons (43.9 m^3), and equipped with a vapor recovery system of 99.9+% removal efficiency;

(B) CRN-3280-02-17-X23, located in Building 3280, with a maximum capacity of 11,600 gallons (43.9 m^3), and equipped with a vapor recovery system of 99.9+% removal efficiency.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.9.1 Gasoline Dispensing Facilities [326 IAC 8-4-6]

Pursuant to 326 IAC 8-4-6 (Gasoline Dispensing Facilities),

(a) No owner or operator shall allow the transfer of gasoline between any transport and any storage tank unless such tank is equipped with the following:

(1) A submerged fill pipe.

(2) Either a pressure relief valve set to release at no less than seven-tenths (0.7) pounds per square inch or an orifice of five-tenths (0.5) inch in diameter.

(3) A vapor balance system connected between the tank and the transport, operating according to manufacturer's specifications.

(b) If the owner or the employees of the owner are not present during loading, it shall be the responsibility of the owner or the operator of the transport to make certain the vapor balance system is connected between the transport and the storage tank and is operating according to manufacturer's specifications.

D.9.2 Leaks from Transports and Vapor Collection Systems; Records [326 IAC 8-4-9]

Pursuant to 326 IAC 8-4-9 (Leaks from transports and vapor collection systems; records), the owner or operator of a vapor balance system or vapor control system shall:

(a) Design and operate the applicable system and the gasoline loading equipment in a manner that prevents:

(1) Gauge pressure from exceeding four thousand five hundred (4,500) pascals (eighteen (18) inches of H2O) and a vacuum from exceeding one thousand five hundred (1,500) pascals (six (6) inches of H2O) in the gasoline transport;

and

(2) Avoidable visible liquid leaks during loading or unloading operations at gasoline dispensing facilities, bulk plants, and bulk terminals; and

(b) Within fifteen (15) days, repair and retest a vapor balance, collection, or control system that exceeds the limits in subdivision (a).

(c) Maintain records of all certification testing, identifying the following:

(1) The vapor balance, vapor collection, or vapor control system.

(2) The date of the test and, if applicable, retest.

(3) The results of the test and, if applicable, retest.

The records shall be maintained in a legible, readily available condition for at least two (2) years after the date the testing and, if applicable, retesting were completed.

(d) During compliance tests conducted under 326 IAC 3-6 (stack testing), each vapor balance or control system shall be tested applying the standards described in 326 IAC 8-4-9 (d)(1)(B). Testers shall use 40 CFR 60, Appendix A, Method 21 to determine if there are any leaks from the hatches and the flanges of the gasoline transports. If any leak is detected, the transport cannot be used for the capacity of the compliance test of the bulk gas terminal. The threshold for leaks shall be as follows:

(1) Five hundred (500) parts per million methane for all bulk gas terminals subject to NESHAP/MACT (40 CFR 63, Subpart R).

(2) Ten thousand (10,000) parts per million methane for all bulk gas terminals subject to New Source Performance Standards (40 CFR 60, Subpart XX) and for all other bulk gas terminals.

D.9.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for the service station and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.9.4 Testing Requirements [326 IAC 2-1.1-11]

The Permittee is required to retest all vapor collection and control systems for vapor leakage and blockage, and successfully pass the test, at least every five (5) years or upon major system replacement or modification. A major system modification is considered to be replacing, repairing, or upgrading seventy five percent (75%) or more of vapor collection and control system of the facility. Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

SECTION D.10 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

(j) Testing of fuses, boosters, other explosive devices and dissection of batteries, consisting of:

(1) One (1) containment chamber in Building 2167, constructed in 1986, used to test burn pyrotechnic items, with a maximum process weight rate of 0.66 pounds per hour.

(2) Ten (10) test cells in Building 3235, constructed in 1991, used to test lithium batteries, with a maximum throughput of 149 batteries per year, using a vertical packed-bed tower to control particulate matter emissions.

(3) One (1) battery dissection fume hood in Building 3235, permitted to construct in 2007, used to dissect batteries, using a scrubber for control, with a maximum throughput of 730 batteries per year.

(4) One (1) flare testing operation in Building 2869, constructed in 1977, identified as CRN-2869-01-02-V01; using a baghouse for control and having a combined maximum process weight rate less than 100 pounds per hour.

(5) One (1) flare testing operation in Building 366, constructed in 1988, identified as CRN-0366-01-02-V01; using a baghouse for control and having a combined maximum process weight rate less than 100 pounds per hour.

(6) One (1) decoy flare testing operation located at Building 3087, identified as CRN-3087-01-01-W01; constructed in 1981, and permitted in 2011, having a maximum capacity of 240 pounds of net explosive weight (NEW) per day.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.10.1 Particulate Matter Emissions Limitations [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate matter (PM) emissions from the testing of fuses, boosters and other explosive devices shall not exceed the limitations in the table below:

Unit Description	**Maximum Throughput Rate** (tons/hr)	**Particulate Emission Limit** (lbs/hr)
Testing of Fuses, Boosters and Other Explosive Devices (Containment Chamber in Building 2167)	< 0.05	< 0.551
Testing of Fuses, Boosters and Other Explosive Devices (Test Cells in Building 3235)	< 0.05	< 0.551
Testing of Fuses, Boosters and Other Explosive Devices (Flare Testing in Buildings 2869 and 366)	< 0.05	< 0.551
Testing of net explosive weight (NEW) (Flare Testing at Building 3087)	< 0.05	0.551

Pursuant to 326 IAC 6-3-2(e)(2), since the process weight rate for each of the testing activities listed above is less than one hundred (100) pounds per hour, the allowable rate of emission is five hundred fifty-one thousandths (0.551) pound per hour.

(b) The amount of Net Explosive Weight (NEW) from the decoy flare testing operation located at Building 3087, identified as CRN-3087-01-01-W01, shall not exceed 1.6 lb NEW per MJU, with compliance determined as the average NEW content at the end of each day.

D.10.2 PSD Minor Limits PM/ PM_{10} [326 IAC 2-2]

Pursuant to SPM 101-30211-00005 (issued July 11, 2011):

(a) The PM emissions from the decoy flare testing operation located at Building 3087, identified as CRN-3087-01-01-W01, shall be limited to less than 2.41 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM_{10} emissions from the decoy flare testing operation located at Building 3087, identified as CRN-3087-01-01-W01, shall be limited to less than fifteen (15) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit shall limit the PM emissions to less than twenty-five (25) tons per twelve (12) consecutive month period and PM_{10} emissions to less than fifteen (15) tons per twelve (12) consecutive month period and render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to the decoy flare testing operation (Building 3087).

D.10.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for each facility and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.10.4 PM and PM_{10} Emissions [326 IAC 2-7-6(1),(6)]

Compliance with the PM and PM_{10} emission limits in Condition D.10.2 shall be determined using the following equation:

$$E = \frac{\sum_{i=1}^{i=n} \left(T_i \times C_i \times EF \right)}{2000 lb / ton}$$

where:
E = Particulate emissions in tons/month
T_i = MJU Throughput in units of each type of MJU (*i*)/month
C_i = NEW of each MJU in lb NEW / MJU_i
EF = Particulate Emission Factor in lb pollutant /lb NEW; 1.5 lb particulate / lb NEW or other value as determined during the most recent valid compliance demonstration

D.10.5 Particulate Matter (PM) Control [326 IAC 2-7-6(6)]

(a) In order to comply with Condition D.10.1, the vertical packed bed tower and baghouse for PM control shall be in operation at all times when the testing operations are in use and the Permittee shall operate the control devices in accordance with manufacturer's specifications.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be

repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.10.6 Battery Dissection

The Permittee shall record the Manufacturer's Safety Data Sheet serial number for each battery dissected and the number of batteries dissected per day.

D.10.7 Visible Emissions Notations

(a) Visible emission notations of the vertical packed-bed tower, battery dissection fume hood and baghouse stack exhausts from the testing operations shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.10.8 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouses pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

D.10.9 Vertical Packed-Bed Tower Failure Detection

In the event that a vertical packed-bed tower failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency

and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.10.10 Record Keeping Requirements

(a) To document the compliance status with Condition D.10.6, the Permittee shall maintain daily records of the number of batteries dissected and each batteries Manufacturer's Safety Data Sheet serial number.

(b) To document the compliance status with Condition D.10.7, the Permittee shall maintain records of daily visible emission notations of the vertical packed-bed tower, battery dissection fume hood and baghouse stack exhausts from the dissection of batteries, testing of fuses, boosters and other explosive devices. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).

(c) [RESERVED]

(d) To document the compliance status with Conditions D.10.1(b), D.10.2 and D.10.4, the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) through (2) shall be taken monthly and shall be complete and sufficient to establish the compliance status with the PM and PM_{10} emission limits established in Conditions D.10.1 and D.10.2.

(1) MJU Throughput.

(2) Net Explosive Weight (NEW) of each MJU and the daily average NEW.

(e) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.10.12 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.10.2 shall be submitted, not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.11 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

Insignificant Activities:

(a) Natural gas-fired combustion sources with inputs less than ten million (10,000,000) Btu per hour, identified as:

(1) Natural gas-fired boilers, existing and in operation before September 21, 1983, located in the following buildings:

(i) one boiler in each of the following buildings: 7,14, 18, 224, 1909, 2037, 2044, 2059, 2074, 2084, 2721, 2749, 2993, 3006 [326 IAC 6-2-3]

(ii) two boilers in the following building: 2521 [326 IAC 6-2-3]

(iii) One (1) 0.862 MMBtu natural gas-fired boiler, constructed in 2003, located in Building 74 [326 IAC 6-2-3]

(2) Natural gas-fired boilers, constructed after September 21, 1983, located in the following buildings:

(i) one boiler in each of the following buildings: 2, 4, 5, 8, 10, 11, 34, 36, 38, 40, 45, 47, 66, 74, 77, 128, 180, 199, 300, 363, 365, 366, 479, 966, 2036, 2045, 2167, 2390, 2516, 2518, 2521, 2547, 2692, 2693, 2720, 2748, 2807, 2963, 2987, 3054, 3083, 3149, 3173, 3188, 3271, 3272, 3278, 3235, 3239, 3243, 3250, 3271, 3272, 3278, 3284, 3285, 3319, 3324, 3325, 3333, 3339, 3344, 3347, 3348, 3422 [326 IAC 6-2-4]

(ii) two boilers in each of the following buildings: 200, 1819, 2035, 2517, 2523, 2540, 3168, 3373, 3395, 3484 [326 IAC 6-2-4]

(iii) three boilers in each of the following buildings: 3287 and 3291 [326 IAC 6-2-4]

(iv) eleven boilers in the following building: 3330 [326 IAC 6-2-4]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.11.1 Particulate Matter Emissions Limitations [326 IAC 6-2-3]

Pursuant to 326 IAC 6-2-3 (Particulate Matter Emissions for Sources of Indirect Heating), the PM emissions from the boilers listed in subsection (1) above, which were existing and in operation prior to September 21, 1983, shall not exceed 0.05 pounds per million Btu heat input (lb/MMBtu).

D.11.2 Particulate Matter Emissions Limitations [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emissions Limitations for Source of Indirect Heating), particulate (PM) emissions from the boilers listed in subsection (2) above, which were constructed

after September 21, 1983, shall not exceed the following (in pounds per million Btu heat input (lb/MMBtu) for each boiler).

Building Location	**Installation Date**	**Pt** (lb/MMBtu)
7, 74, 2521	1983 (after September 21)	0.37
5,36,2694,2807	1984	0.37
66,2035,2036	1985	0.34
34,40,47,77,363,365,3149	1986	0.34
366,3168,3188	1987	0.31
364,2045,3173	1989	0.28
39,3239	1990	0.28
8,2902	1991	0.28
10,3233,3234	1992	0.29
2963,3235,3241,3243,3250,3330N, 3330S,3330C	1993	0.28
3251	1994	0.28
2995,3168,3284,3287	1995	0.28
3285,3291	1996	0.28
3319	1998	0.26
180,3324	1999	0.26
2518	2000	0.26
180,3334	2001	0.26
2084,3339	2002	0.26
3325,3333	2004	0.26
3291, 3330C	2008	0.26

SECTION D.12 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

(k) One (1) contained detonation chamber, identified as P01, constructed in 2001, located in building 3339, with a maximum capacity of 7,500 pounds per hour gross weight of munitions, 750 pounds per hour net explosive weight (NEW), equipped with one (1) baghouse for particulate control, and exhausting to stack S01.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.12.1 PSD Minor Limits PM, PM_{10}, CO, NO_X [326 IAC 2-2]

Pursuant to Significant Permit Modification No.: 101-14889-00005 issued on June 12, 2002, for the Contained Detonation Chamber (P01):

(a) The input to the Contained Detonation Chamber (P01) shall not exceed 1,700 tons of net explosive weight per consecutive twelve (12) month period, with compliance determined at the end of each month.

(b) The carbon monoxide (CO) emissions from the Contained Detonation Chamber shall not exceed 0.0568 pounds of CO per pound of net explosive weight (NEW) treated.

(c) The nitrogen oxide (NO_X) emissions from the Contained Detonation Chamber shall not exceed 0.0085 pounds of NO_X per pound of net explosive weight (NEW) treated.

(d) The particulate matter (PM) emissions from the Contained Detonation Chamber shall not exceed 0.0003 pounds of PM per pound of net explosive weight (NEW) treated.

(e) The particulate matter, with a diameter of less than 10 micrometers (PM_{10}), emissions from the Contained Detonation Chamber shall not exceed 0.0003 pounds of PM_{10} per pound of net explosive weight (NEW) treated.

Compliance with these limits and Condition D13.1 shall limit the carbon monoxide emissions to less than one hundred (100) tons per twelve (12) consecutive month period, the nitrogen oxide emissions to less than forty (40) tons per twelve (12) consecutive month period, the PM emissions to less than twenty-five (25) tons per twelve (12) consecutive month period, and the PM_{10} emissions to less than fifteen (15) tons per twelve (12) consecutive month period and render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

D.12.2 RCRA Air Standards and Limitations

The Permittee shall comply with all applicable provisions of RCRA, as amended by the Hazardous and Solid Waste amendments of 1984 (HSWA).

D.12.3 Particulate Matter Emissions Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Process Operations), the particulate (PM) emissions from the contained detonation chamber shall not exceed 2.13 pounds per hour when operating at a process weight rate of 750 pounds per hour of net explosive weight.

D.12.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for this facility and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.12.5 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

(a) Within 90 days after issuance of this Part 70 permit or operation of the detonation chamber, the Permittee shall conduct a one-time stack test to verify the emission factor used to determine the potential CO emissions from the detonation chamber baghouse utilizing methods as approved by the Commissioner.

(b) Within 90 days after issuance of this Part 70 permit or operation of the detonation chamber, in order to demonstrate compliance with Conditions D.12.1 and D.12.3, the Permittee shall test for PM, and PM_{10} on the detonation chamber baghouse utilizing methods as approved by the Commissioner. PM_{10} includes filterable and condensable PM_{10}. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration.

Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

D.12.6 Particulate Matter (PM and PM_{10}) Control [326 IAC 2-7-6(6)]

(a) In order to ensure compliance with Conditions D.12.1(d), D.12.1(e), and D.12.3, the baghouse for particulate (PM and PM_{10}) control shall be in operation and control emissions from the contained detonation chamber at all times the contained detonation chamber is in operation.

(b) In the event that baghouse cartridge failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.12.7 Visible Emissions Notations

(a) Visible emission notations of the CDC baghouse stack exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation

with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.12.8 Broken or Failed Baghouse Cartridge Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Baghouse cartridge failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.12.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.12.1(a), the Permittee shall maintain records of the total amount of the Net Explosive Weight (NEW) of the materials fed to the contained detonation chamber (P01) each month.

(b) To document the compliance status with Condition D.12.7, the Permittee shall maintain records of daily visible emission notations of the contained detonation chamber baghouse stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).

(c) To document the compliance status with Condition D.12.8, the Permittee shall maintain records of the pressure drop across the baghouse controlling the contained detonation chamber. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).

(d) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.12.10 Reporting Requirements

A quarterly report of the net explosive weight input to the Contained Detonation Chamber (P01) and a quarterly summary of the information to document the compliance status with D.12.1(a) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1 (35).

SECTION D.13 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

(l) One (1) diesel-fueled 4160-volt, 1000 kW generator, identified as CRN-3345-01-23-KK11, located in Building 3345, constructed in 2002, exhausting at stack S03, and decommissioned in 2014.

Under 40 CFR 63, Subpart ZZZZ, the generator is considered an affected facility.

(m) One (1) APE 1236 rotary kiln incinerator, identified as P03, constructed in 2003, modified in 2015, located in Building 3343, used to deactivate (combust) the munitions and associated components, with a maximum feed rate of 240 pounds of net explosive weight (NEW) per hour and a maximum heat input rate of 5.0 MMBtu/hr. The waste stream vents through one (1) cyclone (identified as C05, for PM control), one (1) 7.5 MMBtu/hr natural gas-fired afterburner (identified as C06, for VOC and CO control), and one (1) baghouse (identified as C07, for PM control) and exhausts through stack S03.

Under 40 CFR 63, Subpart EEE, the APE 1236 rotary kiln incinerator (P03) is considered a new affected facility under 40 CFR 63.1206(a)(1)(i)(B) and an existing affected facility under 40 CFR 63.1206(a)(1)(ii)(A).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.13.1 PSD Minor Limits PM, PM_{10}. CO, NO_X [326 IAC 2-2]

(a) Pursuant to Significant Permit Modification No.: 101-14889-00005 issued on June 12, 2002, for the diesel generator (since decommissioned):

(1) For the diesel generator, identified as CRN-3345-01-23-KK11:

(A) The total amount of diesel fuel used in the generator engine shall be limited to 89,604 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(B) The carbon monoxide (CO) emissions from the diesel generator shall not exceed 3.23 pounds per hour of operation.

(C) The nitrogen oxide (NOx) emissions from the diesel generator shall not exceed 28.23 pounds per hour of operation.

Compliance with these limits, together with the limits on the Contained Detonation Chamber in Condition D.12.1, will limit the potential to emit of NOx and CO to less than forty (40) tons and one hundred (100) tons, respectively; and the PM and PM_{10} emissions to less than twenty-five (25) tons and fifteen (15) tons, respectively, per twelve (12) consecutive month period; and render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

(b) Pursuant to Significant Source Modification No.: 101-17239-00005 (issued on October 22, 2003), for the APE 1236 the Permittee shall comply with the following:

(1) The net explosive weight (NEW) of the materials fed into the APE 1236 incinerator (P03) shall not exceed 347 tons per consecutive twelve (12) month period, with compliance determined at the end of each month.

(2) Baghouse C07 and Cyclone C05, for the APE 1236 incinerator (P03), shall be in operation at all times that the APE 1236 incinerator (P03) is in operation. The particulate matter (PM and PM_{10}) emissions from baghouse C07 shall not exceed 2.017 pounds per ton of net explosive weight (NEW) treated.

Compliance with these limits, will limit the potential to emit of NOx to less than forty (40) tons, and the PM and PM_{10} emissions to less than twenty-five (25) tons and fifteen (15) tons, respectively, per twelve (12) consecutive month period; and render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

D.13.2 RCRA Air Standards and Limitations

The Permittee shall comply with all self-implementing provisions of any future air regulations promulgated under the provisions of Section 30004(n) of RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA).

D.13.3 [RESERVED]

D.13.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for the hazardous waste combustor, APE 1236 and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.13.5 Testing Requirements [326 IAC 2-1-3(i)(8)][326 IAC 2-1.1-11]

(a) Pursuant to 326 IAC 3-6-3(b)(2), any tests shall be conducted under representative operating conditions.

(b) Pursuant to 326 IAC 3-6-3(b), during any performance tests, the APE 1236 incinerator (P03) must be operating at 95 percent of its maximum production capacity or more, or under other capacities or conditions specified and approved by IDEM, to be considered a valid test.

(c) Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

D.13.6 Continuous Emissions Monitoring [326 IAC 3-5][326 IAC 2-7-6(1),(6)][40 CFR 63.1200, Subpart EEE]

(a) Pursuant to 326 IAC 3-5 (Continuous Monitoring of Emissions) continuous emission monitoring systems for carbon monoxide (CO) shall be calibrated, maintained, and operated for measuring CO which meet all applicable performance specifications of 326 IAC 3-5-2.

(b) All continuous emissions monitoring systems are subject to monitor system certification requirements pursuant to 326 IAC 3-5-3.

(c) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to 326 IAC 3-5 and 40 CFR 63.1200, Subpart EEE.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

D.13.7 CO Continuous Emissions Monitoring (CEMS) Equipment Downtime

(a) In the event that a breakdown of a CO continuous emissions monitoring system (CEMS) occurs, a record shall be made of the time and reason of the breakdown and efforts made to correct the problem.

(b) Whenever a CO continuous emissions monitoring system (CEMS) is malfunctioning or is down for maintenance or repairs for a period of twenty-four (24) hours or more and a backup CO CEMS is not online within twenty-four (24) hours of shutdown or malfunction of the primary CO CEMS, the Permittee shall comply with the following:

At any time the natural gas-fired afterburner (C06) for APE 1236 rotary kiln incinerator (P03), is operating, the Permittee shall monitor and record afterburner temperatures to demonstrate that the operation of the afterburner continues in a manner typical for the rotary kiln incinerator load.

(c) Parametric monitoring shall begin not more than twenty-four (24) hours after the start of the malfunction or down time at least twice per day during normal operations, with at least four (4) hours between each set of readings, until a CO-CEMS is online.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.13.8 Record Keeping Requirements

(a) Pursuant to 326 IAC 3-7-5(a), the Permittee shall develop a standard operating procedure (SOP) to be followed for sampling, handling, analysis, quality control, quality assurance, and data reporting of the information collected pursuant to 326 IAC 3-7-2 through 326 IAC 3-7-4. In addition, any revision to the SOP shall be submitted to IDEM, OAQ.

(b) To document compliance with Condition D.13.1(a)(1), the Permittee shall maintain records of the fuel usage of the MPTS generator.

(c) To document the compliance status with Condition D.13.1(b), the Permittee shall maintain records of the total amount of the Net Explosive Weight (NEW) of the materials fed to the APE 1236 incinerator (P03) each month.

(d) The Permittee shall record the output of the continuous monitoring system pounds per hour and shall perform the required record keeping pursuant to 326 IAC 3-5-6 and 326 IAC 3-5-7.

(e) In the event that a breakdown of the CO continuous emission monitoring systems (CEMS) occurs, the Permittee shall maintain records of all CEMS malfunctions, out of control periods, calibration and adjustment activities, and repair or maintenance activities.

(f) At any time the natural gas-fired afterburner (C06) for APE 1236 rotary kiln incinerator (P03), is operating, the Permittee shall monitor and record afterburner temperatures to demonstrate that the operation of the afterburner continues in a manner typical for the load of the rotary kiln incinerator.

(g) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required by this condition.

D.13.9 Reporting Requirements [326 IAC 2-7-5(3)(A)(iii)][326 IAC 3-5]

(a) A quarterly report of the net explosive weight (NEW) of the materials fed into the APE 1236 incinerator (P03), and a quarterly summary of the information to document the compliance status with Conditions D.13.1(a)(1) and D.13.1(b) shall be submitted not later than thirty

(30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1 (35).

(b) The Permittee shall prepare and submit to IDEM, OAQ a written report of the results of the calibration gas audits and relative accuracy test audits every four (4) successive QA operating quarters. A calendar quarter that does not qualify as a QA operating quarter shall be excluded in determining the deadline for the next RATA. The report must contain the information required by 326 IAC 3-5-5(f)(1).

The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official,” as defined by 326 IAC 2-7-1 (35).

(c) Pursuant to 326 IAC 3-5-7(c)(4), reporting of continuous monitoring system instrument downtime, except for zero (0) and span checks, which shall be reported separately, shall include the following:

(1) date of downtime;

(2) time of commencement;

(3) duration of each downtime;

(4) reasons for each downtime; and

(5) nature of system repairs and adjustments.

SECTION D.14 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

(o) One (1) flare manufacturing process located in Buildings 2504 and 145, constructed in 2002, with a maximum manufacturing capacity of 180 pounds of magnesium teflon viton (MTV) compound per day.

(p) One (1) flare manufacturing process, located in Building 198, constructed in 2002, with a maximum manufacturing capacity of 150 pounds of magnesium teflon viton (MTV) compound per day, discharging to Stacks 1 through 11.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.14.1 Volatile Organic Compounds and PSD Minor Limit VOC [326 IAC 8-1-6][326 IAC 2-2]

Pursuant to MPM 101-18186-00005 (issued June 4, 2004):

(a) The total number of batches from the flare manufacturing in Buildings 2504 and 145 shall be limited to less than 833 batches per consecutive twelve (12) month period, with compliance determined at the end of each month. VOC emissions shall not exceed 0.015 tons/batch and the maximum weight of each batch shall not exceed 60 pounds.

(b) The total number of batches from the flare manufacturing in Building 198 shall be limited to less than 833 batches per consecutive twelve (12) month period, with compliance determined at the end of each month. VOC emissions shall not exceed 0.015 tons/batch and the maximum weight of each batch shall not exceed 60 pounds.

Compliance with the above limits combined with VOC emissions the generator CRN-3345-01-23-KK11, and P01 (Building 3339), shall limit the VOC emissions from this modification to less than forty (40) tons per twelve (12) consecutive month period and render 326 IAC 2-2 (PSD) not applicable to the flare manufacturing processes in Buildings 2504 and 145; and 198.

Compliance with the above limits shall limit the VOC emissions from Buildings 2504 and 145; and 198 to less than twenty-five (25) tons per twelve (12) consecutive month period and render 326 IAC 8-1-6 (VOC BACT) not applicable to the flare manufacturing processes in Buildings 2504 and 145; and 198.

D.14.2 Hazardous Air Pollutants [326 IAC 2-4.1]

(a) The total number of batches from the flare manufacturing process in Buildings 2504 and 145 shall be limited to less than 833 batches per consecutive twelve (12) month period, with compliance determined at the end of each month.

(b) Total HAP emissions from the flare manufacturing process in Buildings 2504 and 145 shall not exceed 0.012 tons/batch and the maximum weight of each batch shall not exceed 60 pounds.

(c) The total number of batches from the flare manufacturing process in Building 198 shall be limited to less than 833 batches per consecutive twelve (12) month period, with compliance determined at the end of each month.

(d) Total HAP emissions from the flare manufacturing process in Building 198 shall not exceed 0.012 tons/batch and the maximum weight of each batch shall not exceed 60 pounds.

Compliance with these limits shall limit emissions of any single HAP and any combination of HAPs from the flare manufacturing process to less than ten (10) and twenty-five (25) tons per twelve (12) consecutive month period, respectively, and render the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants) not applicable to the flare manufacturing processes in Buildings 2504 and 145, and 198.

D.14.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for the flare manufacturing operations. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.14.4 Record Keeping Requirements

(a) To document the compliance status with Conditions D.14.1 and D.14.2 the Permittee shall maintain records in accordance with (1) through (3) below. Records maintained for (1) through (3) shall be taken monthly and shall be completed and sufficient to establish the compliance status with the VOC and HAP emission limits established in Conditions D.14.1 and D.14.2.

(1) The total number of batches processed each month for each flare manufacturing process.

(2) The weight of HAPs and VOCs emitted for each manufacturing process for each month.

(3) The weight of HAPs and VOCs emitted for each manufacturing process for each compliance period.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.14.5 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.14.1 and D.14.2 shall be submitted, not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.15 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Specifically Regulated Insignificant Activities

(d) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6. [326 IAC 8-3]

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.15.1 Cold Cleaner Degreaser Control Equipment and Operating Requirements [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Degreaser Control and Equipment Operating Requirements), the Permittee shall:

(a) Ensure the following control equipment and operating requirements are met:

(1) Equip the degreaser with a cover.

(2) Equip the degreaser with a device for draining cleaned parts.

(3) Close the degreaser cover whenever parts are not being handled in the degreaser.

(4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(5) Provide a permanent, conspicuous label that lists the operating requirements in subdivisions (3), (4), (6), and (7).

(6) Store waste solvent only in closed containers.

(7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(b) Ensure the following additional control equipment and operating requirements are met:

(1) Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
(B) A water cover when solvent used is insoluble in, and heavier than, water.
(C) A refrigerated chiller.
(D) Carbon adsorption.
(E) An alternative system of demonstrated equivalent or better control as those outlined in clauses (A) through (D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.

(3) If used, solvent spray:
(A) must be a solid, fluid stream; and
(B) shall be applied at a pressure that does not cause excessive splashing

D.15.2 Material Requirements for Cold Cleaner Degreasers [326 IAC 8-3-8]

Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers), on and after January 1, 2015, the Permittee shall not operate a cold cleaning degreaser with a solvent that has a VOC composite partial vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)][326 IAC 2-8-16]

D.15.3 Record Keeping Requirements

To document the compliance status with Condition D.15.2, on and after January 1, 2015, the Permittee shall maintain the following records for each purchase of solvent used in the cold cleaner degreasing operations. These records shall be retained on-site or accessible electronically for the most recent three (3) year period and shall be reasonably accessible for an additional two (2) year period.

(a) The name and address of the solvent supplier.

(b) The date of purchase.

(c) The type of solvent purchased.

(d) The total volume of the solvent purchased.

(e) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(f) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.16 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(p) One (1) mill/classifier unit, permitted in 2010, identified as CRN-0126-02-17-W24, located in Building 126, with a maximum flow rate of 300 acfm, using a packed bed scrubber as control, and exhausting to stack CRN-0126-02-17-W24-F.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.16.1 PSD Minor Limits PM_{10} [326 IAC 2-2]

Pursuant to SSM 101-28903-00005 (issued May 19, 2010), the PM_{10} emission rate from the one (1) Mill/classifier, identified as CRN-0126-02-17-W24, shall be less than 3.4 pounds per hour.

Compliance with this emission limit will ensure that the potential to emit from this modification is less than fifteen (15) tons of PM_{10} per twelve (12) consecutive month period and therefore will render the requirements of 326 IAC 2-2 not applicable to the mill/classifier, identified as CRN-0126-02-17-W24.

D.16.2 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e), the particulate matter (PM) from the mill/classifier, CRN-0126-02-17-W24, shall not exceed 0.551 pounds per hour when operating at a process weight rate of 100 pounds per hour. The pound per hour limitation was calculated with the following equation:

(a) Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

The packed bed scrubber shall be in operation at all times the mill/classifier, CRN-0126-02-17-W24, is in operation, in order to comply with this limit.

D.16.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for the mixing and pouring equipment and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.16.4 Particulate Matter (PM) Control [326 IAC 2-7-6(6)]

In order to comply with Condition D.16.1 and D.16.2, the scrubber for PM control shall be in operation and control emissions from the mill/classifier unit at all times the mill/classifier unit is in operation.

D.16.5 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.16.1 and D.16.2, the Permittee shall perform PM and PM_{10} testing for the mill/classifier unit, identified as CRN-0126-02-17-W24, and the packed bed scrubber within 180 days of initial startup utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid

compliance demonstration. Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.16.6 Visible Emissions Notations

(a) Visible emission notations of the wet scrubber stack exhaust from the mill/classifier unit shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.16.7 Scrubber Operating Condition

The Permittee shall monitor and record the pressure drop across the scrubber at least once per day when the associated processes are in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the response steps required by this condition. A pressure drop reading that is outside the above mentioned range(s) is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instruments used for determining the pressure drop shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.16.8 Record Keeping Requirements

(a) To document the compliance status with Condition D.16.6, the Permittee shall maintain records of daily visible emission notations of the wet scrubber stack exhaust from the mill/classifier unit. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g. the process did not operate that day).

(b) To document the compliance status with Condition D.16.7, the Permittee shall maintain daily records of the pressure drop for the scrubber controlling the mixing and pouring operations. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION D.17 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(q) One (1) chemical conversion process, constructed in 2001, permitted in 2010, identified as CRN-0105-01-12-A12, located in Building 105 with maximum production rate of 2,500 lbs/day picric acid, with emissions controlled by two (2) condensers, identified by CRN-0105-01-12-A12-HX-6 and CRN-0105-01-12-A12-HX-7 and exhausting to stack CRN-0105-01-12-A12-S.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.17.1 Volatile Organic Compounds (VOCs) [326 IAC 8-1-6]

Pursuant to SSM 101-29478-00005 (issued October 25, 2010), the following conditions shall apply to the B105 chemical conversion process;

The VOC emissions from the B105 chemical conversion process shall not exceed 24.7 tons of VOC per 12 consecutive month period, with compliance determined at the end of each month.

Compliance with this limit will limit the VOC emissions from the B105 chemical conversion process to less than twenty-five (25) tons per twelve (12) consecutive month period and render 326 IAC 8-1-6 (New Facilities, General Reduction requirements) not applicable to the B105 chemical conversion process.

D.17.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for chemical conversion process and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.17.3 Volatile Organic Compounds (VOCs) Emissions Determination

Compliance with Conditions D.17.1 shall be determined by calculating the VOC emissions associated with B105 chemical conversion process using the following equation:

VOC emissions (tons/month) = [T1 (lbs/day) x D1 (days/month) + T2 (lbs/day) x D2 (days/month)] x 1 ton/2000 lbs

Where:

T1 = Emissions of VOC in pounds per day from condenser 1 = 262.5 lbs/day or as determined from the most recent compliance stack testing

T2 = Emissions of VOC in pounds per day from condenser 2 = 13.125 lbs/day or as determined from the most recent compliance stack testing

D1 = Numbers of days operated per month for condenser 1

D2 = Numbers of days operated per month for condenser 2

D.17.4 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.17.1, the Permittee shall conduct VOC emissions testing, and record the temperature and the flow rate at the exhaust of the two (2) condensers utilizing methods as approved by the commissioner at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.17.5 Parametric Monitoring

(a) A continuous monitoring system shall be installed, calibrated, maintained, and operated on the two condensers for measuring operating temperature of the condensers. For the purposes of this condition, continuous monitoring shall mean no less often than once per fifteen (15) minutes. The output from this monitoring system and the three hour average temperatures shall be recorded whenever the condensers are in operation.

(b) If the primary continuous monitoring system is not in operation, the outlet condensers temperatures will be recorded using some manner of secondary system, such as with back-up electro-mechanical hardware or manually if necessary. Nothing in this permit shall excuse the Permittee from complying with the requirement to continuously monitor the temperature of the condensers. Continuous monitoring shall mean no less often than once per fifteen (15) minutes.

(c) The condensers shall operate such that if the three-hour average temperature falls below the 3 hour block average minimum required temperature of 35^{o}F determined from the latest stack test, corrective actions shall be taken within 15 minutes to return outlet condensers temperature to at least the required minimum temperature of 35^{o}F. A reading that is below the temperature (35^{o}F) or as established in the most recent compliant stack test is not a deviation from this permit. Failure to take response steps shall be considered as a deviation from the permit.

(d) The Permittee shall record the cooling water flow rate of the two condensers, at least once per day when the four (4) reactors are in operation.

(1) When for any one reading, the cooling water flow rate across the condenser, identified as CRN-0105-01-12-A12-HX6 is below a minimum of 0.75 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the cooling water flow rate across the condenser, identified as CRN-0105-01-12-A12-HX7 is below a minimum of 1.0 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

A cooling water flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.17.6 Record Keeping Requirements

(a) To document the compliance status with Condition D.17.1, the Permittee shall maintain monthly records of the amount of VOC removed.

(b) To document the compliance status with Condition D.17.5(c), the Permittee shall maintain continuous temperature records and 3 hour average temperature records of the two condensers.

(c) To document the compliance status with Condition D.17.5(d), the Permittee shall maintain the daily records of the cooling water flow rate reading across the condensers, identified as CRN 0105-01-12-A12-HX6 and CRN-0105-01-12-A12-HX7. The Permittee shall include in its daily record when a cooling water flow rate reading is not taken and the reason for the lack of a cooling water flow rate readings, (e.g. the process did not operate that day).

(d) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required by this condition.

D.17.7 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.17.1 shall be submitted, not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

SECTION E.1 NSPS

Emission Unit Description- Insignificant Activities

(y) Activities associated with emergencies, including diesel generators not exceeding 1,600 horsepower. [326 IAC 2-7-1(21)(J)(xxii)(BB)(bb)]

(1) Diesel-fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture Date (Permitted) Date	NSPS	NESHAP
(A)	CRN-0002-02-17-U21	2	134	1989		ZZZZ
(B)	CRN-0004-01-17-U21	4	174	2007	IIII	ZZZZ
(C)	CRN-0010-01-17-U21	10	268	2007	IIII	ZZZZ
(D)	CRN-0069-01-23-KK11	69	536	1986		ZZZZ
(E)	CRN-0105-01-23-EE13	105	107	2005		ZZZZ
(F)	CRN-0104-05-23-HH16	104	33.53	2009	IIII	ZZZZ
(G)	CRN-0150-04-17-CC23	150	308	2009	IIII	ZZZZ
(H)	CRN-0160-03-17-AA24	160	33.5	2009	IIII	ZZZZ
(I)	CRN-0200-02-23-KK13	200	619	2014	IIII	ZZZZ
(J)	CRN-1819-03-17-Y23	1819	268	1987		ZZZZ
(K)	CRN-1820-15-17-Y23	1820	268	1987		ZZZZ
(L)	CRN-1894-01-17-W22	1894	17	1984		ZZZZ
(M)	CRN-2384-01-16-BB13	2384	40	1984		ZZZZ
(N)	CRN-2540-01-23-H14	2540	201	2010	IIII	ZZZZ
(O)	CRN-2540-02-23-H14	2540	359	2015	IIII	ZZZZ
(P)	CRN-2688-01-21-Y64	2688	67	2008	IIII	ZZZZ
(Q)	CRN-2737-08-12-M41	2737	168	2008 (2013)	IIII	ZZZZ
(R)	CRN-2928-01-2-J17	2928	40	1972 (2013)		
(S)	CRN-3049-01-23-FF17	3049	671	1993		ZZZZ
(T)	CRN-3049-02-23-FF18	3049	1194	2014	IIII	ZZZZ
(U)	CRN-3114-01-2-L11	3114	174	2000		ZZZZ
(V)	CRN-3173-01-17-W24	3173	1006	1988		ZZZZ
(W)	CRN-3173-02-17-W24	3173	1006	1998		ZZZZ
(X)	CRN-3235-01-17-V26	3235	134	1990 (2013)		ZZZZ
(Y)	CRN-3287-01-17-X25	3287	201	1996		ZZZZ
(Z)	CRN-3372-01-23-MM11	3372	27	2004	IIII	ZZZZ
(AA)	CRN-3373-01-17-W25	3373	275	2006	IIII	ZZZZ
(BB)	CRN-3398-01-24-II21	3398	34	2009	IIII	ZZZZ

(2) Diesel-fired emergency pumps:

(A) One (1) diesel-fired emergency sewer lift pump, identified as CRN-2517-03-10-T21, located in Building 2517, with a maximum capacity of 55 hp and manufactured in 2007.

Under NSPS, Subpart IIII, the emergency generator is considered an affected facility.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E. 1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission units listed above, except as otherwise specified in 40 CFR Part 60, Subpart IIII.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E. 1.2 40 CFR 60.4200, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12][40 CFR Part 60, Subpart IIII]

Pursuant to 40 CFR Part 60, Subpart IIII, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart IIII, which are incorporated by reference as 326 IAC 12 (included as Attachment A to this permit), for the emission unit(s) listed above as specified as follows.

(1) 40 CFR Part 60.4200(a)(2)(i), (c), and (d)
(2) 40 CFR Part 60.4204
(3) 40 CFR Part 60.4205(a)
(4) 40 CFR Part 60.4206
(5) 40 CFR Part 60.4207(a), (b), (c), and (e)
(6) 40 CFR Part 60.4208
(7) 40 CFR Part 60.4209
(8) 40 CFR Part 60.4211
(9) 40 CFR Part 60.4212
(10) 40 CFR Part 60.4214
(11) 40 CFR Part 60.4218
(12) 40 CFR Part 60.4219
(13) Table 1 to 40 CFR Part 60, Subpart IIII
(14) Table 2 to 40 CFR Part 60, Subpart IIII
(15) Table 8 to 40 CFR Part 60, Subpart IIII

SECTION E.2 NESHAP

Emission Unit Description:

(m) One (1) APE 1236 rotary kiln incinerator, identified as P03, constructed in 2003, modified in 2015, located in Building 3343, used to deactivate (combust) the munitions and associated components, with a maximum feed rate of 240 pounds of net explosive weight (NEW) per hour and a maximum heat input rate of 5.0 MMBtu/hr. The waste stream vents through one (1) cyclone (identified as C05, for PM control), one (1) 7.5 MMBtu/hr natural gas-fired afterburner (identified as C06, for VOC and CO control), and one (1) baghouse (identified as C07, for PM control) and exhausts through stack S03.

Under 40 CFR 63, Subpart EEE, the APE 1236 rotary kiln incinerator (P03) is considered a new affected facility under 40 CFR 63.1206(a)(1)(i)(B) and an existing affected facility under 40 CFR 63.1206(a)(1)(ii)(A).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E. 2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to Table 1 to Subpart EEE of Part 63—General Provisions Applicable to Subpart EEE 40 CFR, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, for the emission units listed above, as specified in 40 CFR Part 63, Subpart EEE, in accordance with the schedule in 40 CFR Part 63, Subpart EEE.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.2.2 40 CFR 63.1200, Subpart EEE: National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors NESHAP [40 CFR Part 63, Subpart EEE][326 IAC 20-28]

Pursuant to 40 CFR Part 63, Subpart EEE, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart EEE which are incorporated by reference as 326 IAC 20-28 (included as Attachment B to this permit), for the emission unit(s) listed above, as specified as follows.

(1) 40 CFR Part 63.1200, (a), and (c)
(2) 40 CFR Part 63.1201
(3) 40 CFR Part 63.1203(b), (c), (d), and (e)

(4) 40 CFR Part 63.1206(a)(1)(i)(B), (a)(1)(ii)(A), (a)(3), (b), and (c)
(5) 40 CFR Part 63.1207
(6) 40 CFR Part 63.1208
(7) 40 CFR Part 63.1209(a)(1)(i), (a)(1)(ii)(C), (a)(1)(ii)(D), (a)(1)(iii), (a)(2), (a)(3), (a)(4), (a)(5), (a)(6), (a)(7), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m)(1)(iv), (m)(2), (m)(3), (n)(1), (n)(2)(i), (n)(2)(ii), (n)(2)(vii), (n)(3), (n)(4), (n)(5), (o)(1)(i), (o)(2), (p), (q), and (r)
(8) 40 CFR Part 63.1210
(9) 40 CFR Part 63.1211
(10) 40 CFR Part 63.1212
(11) 40 CFR Part 63.1214
(12) 40 CFR Part 63.1215
(13) 40 CFR Part 63.1219(a), (c), (d), and (e)
(14) Table 1 to Subpart EEE of Part 63
(15) Appendix to Subpart EEE of Part 63

SECTION E.3 NSPS

Emission Unit Description:

(b) Twenty-six (26) boilers, consisting of:

	Unit ID	Make	Building	Fuels*	Initially Constructed	Reconstructed	Max Capacity (MMBtu/hr)	Exhaust Stack
(1)	CRN-0115-01-23-GG12	Cleaver Brooks	115	NG	1997	--	16.75	CRN-0115-01-23-GG12-S
(2)	CRN-0128-01-17-W25	Cleaver Brooks	128	NG	1997	--	16.75	CRN-0128-01-17-W25-S
(3)	CRN-0115-03-23-GG12	Cleaver Brooks	115	NG/FO	1997	--	16.75	CRN-0115-02-23-GG12-S
(4)	CRN-0128-03-17-W25	Cleaver Brooks	128	NG/FO	1997	--	16.75	CRN-0128-03-17-W25-S
(5)	CRN-0064-02-10-T27	Cleaver Brooks	64	NG/FO	1976	2010	16.00	CRN-0064-01-10-T27-S
	The above boilers (b)(1), (b)(2), (b)(3), (b)(4) and (b)(5) are affected boilers under 40 CFR 60, Subpart Dc.							

*NG - Natural Gas / FO - distillate fuel No.2

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E. 3.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1]
[40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission units listed above, except as otherwise specified in 40 CFR Part 60, Subpart Dc.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E. 3.2 40 CFR 60.40c, Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units NSPS [326 IAC 12][40 CFR Part 60, Subpart Dc]

Pursuant to 40 CFR Part 60, Subpart Dc, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart Dc, which are incorporated by reference as 326 IAC 12 (included as Attachment C to this permit), for the emission unit(s) listed above as specified as follows.

(1) 40 CFR Part 60.40c(a), (b), (c), and (d)
(2) 40 CFR Part 60.41c
(3) 40 CFR Part 60.48c(a), (a)(1), (a)(2), (a)(3), (f)(4), (g), (i), and (j)

SECTION E.4 NESHAP

Emission Unit Description:

(o) One (1) flare manufacturing process located in Buildings 2504 and 145, constructed in 2002, with a maximum manufacturing capacity of 180 pounds of magnesium teflon viton (MTV) compound per day.

(p) One (1) flare manufacturing process, located in Building 198, constructed in 2002, with a maximum manufacturing capacity of 150 pounds of magnesium teflon viton (MTV) compound per day, discharging to Stacks 1 through 11.

(q) One (1) chemical conversion process, constructed in 2001, permitted in 2010, identified as CRN-0105-01-12-A12, located in Building 105 with maximum production rate of 2,500 lbs/day picric acid, with emissions controlled by two (2) condensers, identified by CRN-0105-01-12-A12-HX-6 and CRN-0105-01-12-A12-HX-7 and exhausting to stack CRN-0105-01-12-A12-S.

Under the National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing (40 CFR Part 63, Subpart FFFF), the flare manufacturing processes located in Buildings 2504, 145, and 198, and the chemical conversion process (CRN-0105-01-12-A12) are considered the new affected source.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E. 4.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.2540, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, for the emission units listed above, as specified in 40 CFR Part 63, Subpart FFFF, in accordance with the schedule in 40 CFR Part 63, Subpart FFFF.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.4.2 40 CFR 63.2430, Subpart FFFF: National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing [40 CFR Part 63, Subpart FFFF][326 IAC 20-84]

Pursuant to 40 CFR Part 63, Subpart FFFF, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart FFFF, which are incorporated by reference as 326 IAC 20-84 (included as Attachment D to this permit), for the emission unit(s) listed above, as specified as follows.

(1) 40 CFR Part 63.2430
(2) 40 CFR Part 63.2435(a), (b), and (d)
(3) 40 CFR Part 63.2440
(4) 40 CFR Part 63.2445(a), (c), (d), (e), and (f)
(5) 40 CFR Part 63.2450
(6) 40 CFR Part 63.2460
(7) 40 CFR Part 63.2480
(8) 40 CFR Part 63.2495
(9) 40 CFR Part 63.2500
(10) 40 CFR Part 63.2505
(11) 40 CFR Part 63.2515
(12) 40 CFR Part 63.2520
(13) 40 CFR Part 63.2525
(14) 40 CFR Part 63.2540
(15) 40 CFR Part 63.2545
(16) 40 CFR Part 63.2550
(17) Table 2 of 40 CFR Part 63, Subpart FFFF
(18) Table 6 of 40 CFR Part 63, Subpart FFFF
(19) Table 11 of 40 CFR Part 63, Subpart FFFF
(20) Table 12 of 40 CFR Part 63, Subpart FFFF

SECTION E.5 NSPS

Emission Unit Description- Insignificant Activities:

(z) Natural gas turbines not exceeding 16,000 hp, including the following:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture (Approved for Installation) Date	NSPS	NESHAP
(1)	CRN-0005-01-10-T21	5	80.64	2013	JJJJ	ZZZZ
(2)	CRN-0010-02-17-U21	10	40.23	2007	JJJJ	ZZZZ
(3)	CRN-0059-01-8-N6	59	10.6	2008	JJJJ	ZZZZ
(7)	CRN-3320-01-17-R21	3320	33.53	2009	JJJJ	ZZZZ
(8)	CRN-3334-01-17-V26	3334	402.3	2012	JJJJ	ZZZZ
(9)	CRN-3334-02-17-V26	3334	402.3	2012	JJJJ	ZZZZ
(10)	CRN-3461-01-10-K22	3461	33.52	2009	JJJJ	ZZZZ

(gg) Seven (7) Propane fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufactured (Installed) [Permitted]	NSPS	NESHAP
(5)	CRN-3450-01-MW-01	3450	47	2009 (2009)	JJJJ	ZZZZ
(6)	CRN-3452-01-MW-02	3452	47	2009 (2009)	JJJJ	ZZZZ
(7)	CRN-3454-01-MW-03	3454	47	2009 (2009)	JJJJ	ZZZZ

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.5.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1]
[40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission units listed above, except as otherwise specified in 40 CFR Part 60, Subpart JJJJ.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.5.2 40 CFR 60.4230, Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines NSPS [326 IAC 12][40 CFR Part 60, Subpart JJJJ]

Pursuant to 40 CFR Part 60, Subpart JJJJ, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart JJJJ, which are incorporated by reference as 326 IAC 12 (included as Attachment E to this permit), for the emission unit(s) listed above as specified as follows.

(1) 60.4230
(2) 60.4233
(3) 60.4234
(4) 60.4236
(5) 60.4237
(6) 60.4243(a),(b),(e),(f),(g),(h)
(7) 60.4244
(8) 60.4245
(9) 60.4246
(10) 60.4248
(11) Table 2
(12) Table 3

SECTION E.6 NESHAP

Emission Unit Description:

Insignificant Units:

(y) Activities associated with emergencies, including diesel generators not exceeding 1,600 horsepower. [326 IAC 2-7-1(21)(J)(xxii)(BB)(bb)]

(1) Diesel-fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture Date (Permitted) Date	NSPS	NESHAP
(A)	CRN-0002-02-17-U21	2	134	1989		ZZZZ
(B)	CRN-0004-01-17-U21	4	174	2007	IIII	ZZZZ
(C)	CRN-0010-01-17-U21	10	268	2007	IIII	ZZZZ
(D)	CRN-0069-01-23-KK11	69	536	1986		ZZZZ
(E)	CRN-0105-01-23-EE13	105	107	2005		ZZZZ
(F)	CRN-0104-05-23-HH16	104	33.53	2009	IIII	ZZZZ
(G)	CRN-0150-04-17-CC23	150	308	2009	IIII	ZZZZ
(H)	CRN-0160-03-17-AA24	160	33.5	2009	IIII	ZZZZ
(I)	CRN-0200-02-23-KK13	200	619	2014	IIII	ZZZZ
(J)	CRN-1819-03-17-Y23	1819	268	1987		ZZZZ
(K)	CRN-1820-15-17-Y23	1820	268	1987		ZZZZ
(L)	CRN-1894-01-17-W22	1894	17	1984		ZZZZ
(M)	CRN-2384-01-16-BB13	2384	40	1984		ZZZZ
(N)	CRN-2540-01-23-H14	2540	201	2010	IIII	ZZZZ
(O)	CRN-2540-02-23-H14	2540	359	2015	IIII	ZZZZ
(P)	CRN-2688-01-21-Y64	2688	67	2008	IIII	ZZZZ
(Q)	CRN-2737-08-12-M41	2737	168	2008 (2013)	IIII	ZZZZ
(R)	CRN-2928-01-2-J17	2928	40	1972 (2013)		
(S)	CRN-3049-01-23-FF17	3049	671	1993		ZZZZ
(T)	CRN-3049-02-23-FF18	3049	1194	2014	IIII	ZZZZ
(U)	CRN-3114-01-2-L11	3114	174	2000		ZZZZ
(V)	CRN-3173-01-17-W24	3173	1006	1988		ZZZZ
(W)	CRN-3173-02-17-W24	3173	1006	1998		ZZZZ
(X)	CRN-3235-01-17-V26	3235	134	1990 (2013)		ZZZZ
(Y)	CRN-3287-01-17-X25	3287	201	1996		ZZZZ
(Z)	CRN-3372-01-23-MM11	3372	27	2004	IIII	ZZZZ
(AA)	CRN-3373-01-17-W25	3373	275	2006	IIII	ZZZZ
(BB)	CRN-3398-01-24-II21	3398	34	2009	IIII	ZZZZ

(z) Natural gas turbines not exceeding 16,000 hp, including the following:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture (Approved for Installation) Date	NSPS	NESHAP
(1)	CRN-0005-01-10-T21	5	80.64	2013	JJJJ	ZZZZ
(2)	CRN-0010-02-17-U21	10	40.23	2007	JJJJ	ZZZZ
(3)	CRN-0059-01-8-N6	59	10.6	2008	JJJJ	ZZZZ
(4)	CRN-0061-01-5-D43	61	10.6	1976		ZZZZ
(5)	CRN-0300-01-17-X21	300	44.25	1993		ZZZZ
(6)	CRN-3318-01-22-LL9	3318	33.53	1999		ZZZZ
(7)	CRN-3320-01-17-R21	3320	33.53	2009	JJJJ	ZZZZ
(8)	CRN-3334-01-17-V26	3334	402.3	2012	JJJJ	ZZZZ
(9)	CRN-3334-02-17-V26	3334	402.3	2012	JJJJ	ZZZZ
(10)	CRN-3461-01-10-K22	3461	33.52	2009	JJJJ	ZZZZ

(gg) Seven (7) Propane fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufactured (Installed) [Permitted]	NSPS	NESHAP
(1)	CRN-0002-01-17-U21	2	181	2006 (2006)		ZZZZ
(2)	CRN-0016-01-10-R22	16	168	1942 (1942)		ZZZZ
(3)	CRN-2516-01-17-W22	2516	27	1992 (1992)		ZZZZ
(4)	CRN-2517-04-10-T21	2517	27	(1990) [2013]		ZZZZ
(5)	CRN-3450-01-MW-01	3450	47	2009 (2009)	JJJJ	ZZZZ
(6)	CRN-3452-01-MW-02	3452	47	2009 (2009)	JJJJ	ZZZZ
(7)	CRN-3454-01-MW-03	3454	47	2009 (2009)	JJJJ	ZZZZ

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.6.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.6665, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, for the emission units listed above, as specified in 40 CFR Part 63, Subpart ZZZZ, in accordance with the schedule in 40 CFR Part 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue

MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.6.2 40 CFR 63.6580, Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines NESHAP
[40 CFR Part 63, Subpart ZZZZ][326 IAC 20-82]

Pursuant to 40 CFR Part 63, Subpart ZZZZ, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart ZZZZ, which are incorporated by reference as 326 IAC 20-82 (included as Attachment F to this permit), for the emission unit(s) listed above, as specified as follows.

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585
(3) 40 CFR 63.6590(a), (b), (c)
(4) 40 CFR 63.6595(a)
(5) 40 CFR 63.6600
(6) 40 CFR 63.6601
(7) 40 CFR 63.6602
(8) 40 CFR 63.6605
(9) 40 CFR 63.6610
(10) 40 CFR 63.6612
(11) 40 CFR 63.6615
(12) 40 CFR 63.6640 (f)
(13) 40 CFR 63.6645
(14) 40 CFR 63.6655
(15) 40 CFR 63.6660
(16) 40 CFR 63.6665
(17) 40 CFR 63.6670
(18) 40 CFR 63.6675
(19) Table 1a to Subpart ZZZZ of Part 63
(20) Table 1b to Subpart ZZZZ of Part 63
(21) Table 2c to Subpart ZZZZ of Part 63
(22) Table 4 to Subpart ZZZZ of Part 63
(23) Table 6 to Subpart ZZZZ of Part 63
(24) Table 8 to Supbart ZZZZ of Part 63

SECTION E.7 NESHAP

Emission Unit Description:-

(b) Twenty-six (26) boilers, consisting of:

	Unit ID	Make	Building	Fuels*	Initially Constructed	Reconstructed	Max Capacity (MMBtu/hr)	Exhaust Stack
(1)	CRN-0115-01-23-GG12	Cleaver Brooks	115	NG	1997	--	16.75	CRN-0115-01-23-GG12-S
(2)	CRN-0128-01-17-W25	Cleaver Brooks	128	NG	1997	--	16.75	CRN-0128-01-17-W25-S
(3)	CRN-0115-03-23-GG12	Cleaver Brooks	115	NG/FO	1997	--	16.75	CRN-0115-02-23-GG12-S
(4)	CRN-0128-03-17-W25	Cleaver Brooks	128	NG/FO	1997	--	16.75	CRN-0128-03-17-W25-S
(5)	CRN-0064-02-10-T27	Cleaver Brooks	64	NG/FO	1976	2010	16.00	CRN-0064-01-10-T27-S
	The above boilers (b)(1), (b)(2), (b)(3), (b)(4) and (b)(5) are affected boilers under 40 CFR 60, Subpart Dc.							
(6)	CRN-0115-02-23-GG12	Cleaver Brooks	115	NG/FO	1985	--	6.2	CRN-0115-03-23-GG12-S
(7)	CRN-0140-03-17-Y25	Cleaver Brooks	140	NG/FO	2013	--	5.1	CRN-0140-03-17-Y25-S
(8)	CRN-0140-04-17-Y25	Cleaver Brooks	140	NG/FO	2013	--	5.1	CRN-0140-02-17-Y25-S
(9)	CRN-0150-01-17-CC23	Cleaver Brooks	150	NG/FO	April 1989	--	25.2	CRN-0150-01-17-CC23-S
(10)	CRN-0150-03-17-CC23	Cleaver Brooks	150	NG/FO	April 1989	--	25.2	CRN-0150-03-17-CC23-S
(11)	CRN-0199-01-23-JJ14	Cleaver Brooks	199	NG/FO	1978	--	17.5	CRN-0199-01-23-JJ14-S
(12)	CRN-0199-02-23-JJ14	Cleaver Brooks	199	NG/FO	1978	--	17.5	CRN-0199-02-23-JJ14-S
(13)	CRN-2737-01-12-M41	Cleaver Brooks	2737	NG/FO	1987	--	12.5	CRN-2737-01-12-M41-S
(14)	CRN-2737-02-12-M41	Cleaver Brooks	2737	NG/FO	1987	--	12.5	CRN-2737-02-12-M41-S
(15)	CRN-3234-02-17-U26	Superior	3234	NG/FO	1992	--	8.4	CRN-3234-02-17-U26-S
(16)	CRN-3234-03-17-U26	Superior	3234	NG/FO	1992	--	8.4	CRN-3234-03-17-U26-S
(17)	CRN-0041-04-17-U26	York-Shipley	41	NG/FO	1983	2011	6.9	CRN-0041-02-17-U26-S
(18)	CRN-0041-03-17-U26	Hurst	41	NG/FO	1977	2008	8.4	CRN-0041-02-17-U26-S

(19)	CRN-0128-02-17-W25	Cleaver Brooks	128	NG/FO	1984	--	6.2	CRN-0128-02-17-W25-S
(20)	CRN-0149-01-10-S30	Cleaver Brooks	149	NG/FO	1980	2015	6.2	CRN-0149-01-10-S30-S
(21)	CRN-0149-02-10-S30	Cleaver Brooks	149	NG/FO	1980	2015	6.2	CRN-0149-02-10-S30-S
(22)	CRN-0180-01-17-W22	Cleaver Brooks	180	NG/FO	1999	--	4.19	CRN-0180-01-17-W22-S
(23)	CRN-0180-02-17-W22	Cleaver Brooks	180	NG/FO	1999	--	4.19	CRN-0180-02-17-W22-S
(24)	CRN-2674-03-00-0001	Cleaver Brooks	2674	NG/FO	2013	--	6.7	CRN-2674-03-00-0001-S
(25)	CRN-2674-04-00-0001	Cleaver Brooks	2674	NG/FO	2013	--	6.7	CRN-2674-02-00-0001-S
(26)	CRN-2737-04-12-M41	Cleaver Brooks	2737	NG/FO	2014	--	5.02	CRN-2737-03-12-M41-S

*NG - Natural Gas / FO - distillate fuel No.2

Under 40 CFR 63.7480, Subpart DDDDD: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, the above boilers are considered affected facilities.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.7.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.6665, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, for the emission units listed above, as specified in 40 CFR Part 63, Subpart DDDDD, in accordance with the schedule in 40 CFR Part 63, Subpart DDDDD.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard

Chicago, Illinois 60604-3590

E.7.2 40 CFR 63.7480, Subpart DDDDD: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters NESHAP
[40 CFR Part 63, Subpart DDDDD][326 IAC 20-95]

Pursuant to 40 CFR Part 63, Subpart DDDDD, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart DDDDD, which are incorporated by reference as 326 IAC 20-95 (included as Attachment G to this permit), for the emission unit(s) listed above, as specified as follows.

(1) 40 CFR 63.7480
(2) 40 CFR 63.7485
(3) 40 CFR 63.7490
(4) 40 CFR 63.7495
(5) 40 CFR 63.7500
(6) 40 CFR 63.7501
(7) 40 CFR 63.7505
(8) 40 CFR 63.7510
(9) 40 CFR 63.7515
(10) 40 CFR 63.7520
(11) 40 CFR 63.7521
(12) 40 CFR 63.7522
(13) 40 CFR 63.7525
(14) 40 CFR 63.7530
(15) 40 CFR 63.7535
(16) 40 CFR 63.7540
(17) 40 CFR 63.7541
(18) 40 CFR 63.7545
(19) 40 CFR 63.7550
(20) 40 CFR 63.7555
(21) 40 CFR 63.7556
(22) 40 CFR 63.7565
(23) 40 CFR 63.7570
(24) 40 CFR 63.7575
(25) Table 3
(26) Table 5

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

PART 70 OPERATING PERMIT CERTIFICATION

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify): _____

☐ Report (specify): _____

☐ Notification (specify): _____

☐ Affidavit (specify): _____

☐ Other (specify): _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Phone:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

100 North Senate Avenue
MC 61-53, IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), no later than four (**4**) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance and Enforcement Branch); and
- The Permittee must submit notice in writing or by facsimile no later than two (**2**) days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency
Describe the cause of the Emergency

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? ☐ Y ☐ N Describe: Type of Pollutants Emitted: ☐ TSP ☐ PM_{10} ☐ SO_2 ☐ VOC ☐ NO_X ☐ CO ☐ Pb ☐ other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005
Facility: The Bomb Finishing Line and the Projectile Renovation Operations (CRN-2728-01-12-N42, CRN-2728-02-12-N42, CRN-2728-03-12-N42)
Parameter: VOC emissions
Limit: The total VOC emissions from the Bomb Refinishing Line and the Projectile Renovation Operations shall be limited to less than 40 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	VOC emissions for This Month (tons)	VOC emissions for Previous 11 Months (tons)	VOC emissions for 12-Month Period (tons)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005
Facility: Building 3234 Paint Booths (CRN-3234-16-17-U26 and CRN-3234-17-17-U26)
Parameter: VOC emissions
Limit: The total VOC emissions from the Building 3234 Paint Booths shall be limited to less than 40 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	VOC emissions for This Month (tons)	VOC emissions for Previous 11 Months (tons)	VOC emissions for 12-Month Period (tons)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005
Facility: Open Burning/Open Detonation Operations
Parameter: Type and amount of waste materials open burned or open detonated
Limit: see tables below

QUARTER: _____ YEAR: _____

(1) Ammunition Burning Grounds (ABG)

Unit Number	Material	Limited Treatment Quantity (NEW)	
		8-hour Period (pounds)	**Quarterly Period** (tons)
3a-ABG	Propellants	75,000	3,412.5
3b-ABG	Explosives	25,000	1,137.5
3c-ABG	Production Scrap	75,000	3,412.5
6-ABG	Red Phosphorus	1,600	72.8
7-ABG	Pyrotechnics	200	9.1
8-ABG	Black Powder Slurry	250	11.4
10-ABG	Contaminated Sludges	2,000	91.0
11-ABG	Red Phosphorus Sludge	200	9.1
12-ABG	Explosives/Propellants/ Pyrotechnics	300	13.7
13-ABG	Explosives/Pyrotechnics	50,000	2,275.0
4-ABG	Flammable Liquids/Explosives	200	9.1
5-ABG	Flammable liquids contaminated with reactive materials	300	13.7
9-ABG	Contaminated Waste Materials	400	18.2

(2) Old Rifle Range (ORR)

Unit Number	Material	Limited Treatment Quantity (NEW)	
		8-hour Period (pounds)	**Quarterly Period** (tons)
3a-ORR	Yellow D	6,000	273.0
3b-ORR	Projectile Bodies and Yellow D contaminated materials	9,000	409.5

(3) Demolition Range

Unit Number	Material	Limited Treatment Quantity (NEW)		Actual Usage
		24-hour Period (pounds)	Quarterly Period (tons)	(tons)
3-DR	Explosives	55,000	2502.5	

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005
Facility: B3087 Decoy Flare Operation
Parameter: PM Emissions
Limit: Less than 2.41 tons of PM per twelve (12) consecutive month period

$$E = \frac{\sum_{i=1}^{i=n}\left(T_i \times C_i \times EF\right)}{2000 lb / ton}$$

where:
E = Particulate emissions in tons/month
T_i = MJU Throughput in units of each type of MJU (*i*)/month
C_i = NEW of each MJU in lb NEW / MJU_i
EF = PM Emission Factor in lb pollutant /lb NEW; 1.5 lb PM / lb NEW or other value as determined during the most recent valid compliance demonstration

QUARTER: _____ YEAR: _____

Month	PM Emissions for This Month (tons)	PM Emissions for Previous 11 Months (tons)	PM Emissions for 12-Month Period (tons)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005
Facility: B3087 Decoy Flare Operation
Parameter: PM_{10} Emissions
Limit: Less than fifteen (15) tons of PM_{10} per twelve (12) consecutive month period

$$E = \frac{\sum_{i=1}^{i=n}\left(T_i \times C_i \times EF\right)}{2000 lb/ton}$$

where:
E = Particulate emissions in tons/month
T_i = MJU Throughput in units of each type of MJU (*i*)/month
C_i = NEW of each MJU in lb NEW / MJU_i
EF = PM_{10} Emission Factor in lb pollutant /lb NEW; 1.5 lb PM_{10} / lb NEW or other value as determined during the most recent valid compliance demonstration

QUARTER: _____ YEAR: _____

Month	PM_{10} Emissions for This Month (tons)	PM_{10} Emissions for Previous 11 Months (tons)	PM_{10} Emissions for 12-Month Period (tons)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____
Title/Position: _____
Signature: _____
Date: _____
Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005
Facility: Contained Detonation Chamber (P01)
Parameter: Net Explosive Weight (NEW) Input
Limit: The input of NEW to the Contained Detonation Chamber shall be less than 1,700 tons per consecutive twelve (12) month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Net Explosive Weight (NEW) Input for This Month (tons)	Net Explosive Weight (NEW) Input for Previous 11 Months (tons)	Net Explosive Weight (NEW) Input for 12-Month Period (tons)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005
Facility: APE 1236 Rotary Kiln Incinerator (P03)
Parameter: Net Explosive Weight (NEW) Input
Limit: The input of NEW to the APE 1236 Rotary Kiln Incinerator (P03) shall be less than 347 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Net Explosive Weight (NEW) Input for This Month (tons)	Net Explosive Weight (NEW) Input for Previous 11 Months (tons)	Net Explosive Weight (NEW) Input for 12-Month Period (tons)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005
Facility: Flare Manufacturing Process in Building 198
Parameter: Number of batches
Limit: The total number of batches shall be limited to less than 833 batches per consecutive twelve (12) month period, with compliance determined at the end of each month.
Equation: Each batch shall not exceed 60 pounds.

QUARTER: _____ YEAR: _____

Month	Total Batches for This Month	Total Batches for Previous 11 Months	Total Batches for 12-Month Period

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005
Facility: B105 Chemical Conversion Process
Parameter: Volatile Organic Compounds (VOC)
Limit: Less than 25 tons of VOC per twelve (12) consecutive month period

QUARTER: _____ YEAR: _____

Month	VOC Emissions for This Month (tons)	VOC Emissions for Previous 11 Months (tons)	VOC Emissions for 12-Month Period (tons)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Crane Division, Naval Surface Warfare Center (NSWC Crane)
Source Address: 300 Highway 361, Crane, Indiana 47522
Part 70 Permit No.: T101-32904-00005

Months: _____ **to** _____ **Year:** _____

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".
☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.
☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD
Permit Requirement (specify permit condition #)
Date of Deviation: **Duration of Deviation:**
Number of Deviations:
Probable Cause of Deviation:
Response Steps Taken:
Permit Requirement (specify permit condition #)
Date of Deviation: **Duration of Deviation:**
Number of Deviations:
Probable Cause of Deviation:
Response Steps Taken:

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Appendix A: Emission Calculations
PTE Summary

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Uncontrolled Potential to Emit (tons/yr)								
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**CO2e**
Abrasive Blasting	430.24	430.24	430.24	-	-	-	-	-
Boilers (Natural Gas Combustion Only)	1.12	4.49	4.49	0.35	59.02	3.25	49.58	71,248.07
Boilers (Natural Gas and No. 2 Fuel Oil Combustion)	15.41	18.34	16.41	547.04	154.09	5.82	88.83	166,290.32
Bldg 2674 Replacement Boilers	0.84	1.00	0.89	29.77	8.38	0.32	4.83	9,048.16
Bldg 2737 Replacement Boiler	0.31	0.37	0.33	11.15	3.14	0.12	1.81	3,389.68
Bldg 149 Replacement Boilers	0.42	0.50	0.45	14.88	4.19	0.16	2.42	4,524.08
Carpentry Shops	249.51	249.51	249.51	-	-	-	-	-
Surface Coating Operations (Other)	125.79	125.79	125.79	-	-	324.78	-	-
Surface Coating Operations - (CRN-0107-01-23-HH13, CRN-0107-02-23-HH13)	9.22	9.22	9.22	-	-	23.87	-	-
Surface Coating (Bomb Refinishing and Projectile Renovation CRN-2728-01-12-N42, CRN-2728-02-12-N42, CRN-2728-03-12-N42)	23.71	23.71	23.71	-	-	58.57	-	-
Surface Coating (CRN-0106-03-23-HH13)	8.71	8.71	8.71	-	-	18.98	-	-
Surface Coating (CRN-0106-04-23-PBS1)	4.38	4.38	4.38	-	-	21.77	-	-
Surface Coating (CRN-2805-03-23-GG19)	3.86	3.86	3.86	-	-	6.63	-	-
Mixing and Pouring (Building 200)	407.34	407.34	407.34	-	-	-	-	-
Screening and Weighing Aluminum Powder (Building 2714)	1.06E-03	1.06E-03	1.06E-03	-	-	-	-	-
Screening and Weighing TNT (Building 153)	4.22E-03	4.22E-03	4.22E-03	-	-	-	-	-
Melting and Mixing Aluminum Powder and TNT (Building 152)	0.05	0.05	0.05	-	-	-	-	-
Al Sieve (CRN-0155-05A1-BH1)	17.52	17.52	17.52	-	-	-	-	-
Rotary Kiln Furnace (Building 69)	106.38	106.38	106.38	-	-	-	-	-
Gasoline and Diesel Dispensing (CRN-3280-01-17-X23 and CRN-3280-02-17-X23)	-	-	-	-	-	8.48	-	-
Flare Manufacturing Processes (Buildings 2504, 145, and 198) & Flare Testing (Buildings 2869 & 366)	-	-	-	-	-	14.04	-	-
Detonation Chamber (P01)	985.50	985.50	985.50	0.16	27.92	0.36	186.59	N/A
APE 1236 Rotary Kiln Incinerator P03	35.13	35.13	35.13	4.90	120.89	0.33	1.05	NA
Mill/Classifier Unit (CRN 0126 02-17-W24)	43.80	43.80	43.80	-	-	-	-	-
Chemical Conversion Process (CRN-0105-01-12-A12)	-	-	-	-	-	0.00	-	-
Natural Gas Furnaces	1.75	7.00	7.00	0.55	92.11	5.07	77.37	111,187.42
Diesel Emergency Generators <= 600 HP	2.13	2.13	2.13	1.98	29.97	2.43	6.46	1,115.56
Diesel Emergency Generators > 600 HP	0.61	0.35	0.35	3.55	21.05	0.62	4.82	1,021.15
Diesel Emergency Generator (CRN-0200-02-23-KK13)	0.11	0.06	0.06	0.63	3.71	0.11	0.85	180.18
Diesel Emergency Generator (CRN-3049-02-23-FF18)	0.21	0.12	0.12	1.21	7.16	0.21	1.64	347.56
Nat Gas Emergency Generators	0.02	0.04	0.04	1.26E-03	4.73	0.06	7.96	303.56
Extruder Processing Line	0.00E+00	0.00E+00	0.00E+00	-	-	0.95	-	-
Propane Emergency Generators	6.18E-03	0.01	0.01	3.83E-04	1.48	0.02	2.28	71.94
Steam Kettle (CRN-0160-01-A)	6.58	6.58	6.58	-	-	-	-	-
Total	**2,474.09**	**2,485.56**	**2,483.44**	**616.17**	**537.86**	**496.93**	**436.50**	**368,727.68**

** PM2.5 listed is direct PM2.5*

Appendix A: Emission Calculations
PTE Summary

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Potential to Emit after Control (tons/yr)								
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**CO2**
Abrasive Blasting	1.42	1.42	1.42	-	-	-	-	-
Boilers (Natural Gas Combustion Only)	1.12	4.49	7.60	0.35	59.02	3.25	49.58	71,248.07
Boilers (Natural Gas and No. 2 Fuel Oil Combustion)	15.41	18.34	16.41	547.04	154.09	5.82	88.83	166,290.32
Bldg 2674 Replacement Boilers	0.84	1.00	0.89	29.77	8.38	0.32	4.83	9,048.16
Bldg 2737 Replacement Boiler	0.31	0.37	0.33	11.15	3.14	0.12	1.81	3,389.68
Bldg 149 Replacement Boilers	0.42	0.50	0.45	14.88	4.19	0.16	2.42	4,524.08
Carpentry Shops	2.48	2.48	2.48	-	-	-	-	-
Surface Coating Operations (Other)	6.99	6.99	125.79	-	-	324.78	-	-
Surface Coating Operations - (CRN-0107-01-23-HH13, CRN-0107-02-23-HH13)	0.46	0.46	9.22	-	-	23.87	-	-
Surface Coating (Bomb Refinishing and Projectile Renovation CRN-2728-01-12-N42, CRN-2728-02-12-N42, CRN-2728-03-12-N42)	1.19	1.19	1.19	-	-	58.57	-	-
Surface Coating (CRN-0106-03-23-HH13)	1.74	1.74	1.74	-	-	18.98	-	-
Surface Coating (CRN-0106-04-23-PBS1)	0.46	0.46	0.46	-	-	21.77	-	-
Surface Coating (CRN-2805-03-23-GG19)	0.19	0.19	0.19	-	-	6.63	-	-
Mixing and Pouring Building 200	4.07	4.07	4.07	-	-	-	-	-
Screening and Weighing Aluminum Powder (Building 2714)	1.06E-05	1.06E-05	1.06E-05	-	-	-	-	-
Screening and Weighing TNT (Building 153)	4.22E-05	4.22E-05	4.22E-05	-	-	-	-	-
Melting and Mixing Aluminum Powder and TNT (Building 152)	5.28E-04	5.28E-04	5.28E-04	-	-	-	-	-
Al Sieve (CRN-0155-05A1-BH1)	17.52	17.52	17.52	-	-	-	-	-
Rotary Kiln Furnace (Building 69)	2.66	2.66	2.66	-	-	-	-	-
Gasoline and Diesel Dispensing (CRN-3280-01-17-X23 and CRN-3280-02-17-X23)	-	-	-	-	-	0.00	-	-
Flare Manufacturing Processes (Buildings 2504, 145, and 198) & Flare Testing (Buildings 2869 & 366)	-	-	-	-	-	0.07	-	
Detonation Chamber (P-01)**	0.99	0.99	0.99	1.64E-04	1.64E-04	3.61E-04	186.59	NA
APE 1236 Rotary Kiln Incinerator P03	0.35	0.35	0.35	4.90	120.89	0.33	1.05	NA
Mill/Classifier Unit (CRN 0126 02-17-W24)	4.38E-03	4.38E-03	4.38E-03	-	-	-	-	-
Chemical Conversion Process (CRN-0105-01-12-A12)	-	-	-	-	-	0.00	-	-
Natural Gas Furnaces	1.75	7.00	7.00	0.55	92.11	5.07	77.37	111,187.42
Diesel Emergency Generators <= 600 HP	2.13	2.13	2.13	1.98	29.97	2.43	6.46	1,115.56
Diesel Emergency Generators > 600 HP	0.61	0.35	0.35	3.55	21.05	0.62	4.82	1,021.15
Diesel Emergency Generator (CRN-0200-02-23-KK13)	0.11	0.06	0.06	0.63	3.71	0.11	0.85	180.18
Diesel Emergency Generator (CRN-3049-02-23-FF18)	0.21	0.12	0.12	1.21	7.16	0.21	1.64	347.56
Nat Gas Emergency Generators	0.02	0.04	0.04	1.26E-03	4.73	0.06	7.96	303.56
Extruder Processing Line	0.00E+00	0.00E+00	0.00E+00	-	-	0.95	-	-
Propane Emergency Generators	6.18E-03	0.01	0.01	3.83E-04	1.48	0.02	2.28	71.94
Steam Kettle (CRN-0160-01-A)	0.14	0.14	0.14	-	-	-	-	-
Total	**63.46**	**74.93**	**203.48**	**616.00**	**509.93**	**474.11**	**436.50**	**368,727.68**

** PM2.5 listed is direct PM2.5*

Appendix A: Emission Calculations
PTE Summary

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Emission Unit	PM	PM10	PM2.5 *	SO_2	NOx	VOC	CO	CO2
Abrasive Blasting	419.37	430.24	430.24	-	-	-	-	-
Boilers (Natural Gas Combustion Only)	1.12	4.49	7.60	0.35	59.02	3.25	49.58	71,248.07
Boilers (Natural Gas and No. 2 Fuel Oil Combustion)	15.41	18.34	16.41	547.04	154.09	5.82	88.83	166,290.32
Bldg 2674 Replacement Boilers	0.84	1.00	0.89	29.77	8.38	0.32	4.83	9048.2
Bldg 2737 Replacement Boiler	0.31	0.37	0.33	11.15	3.14	0.12	1.81	3389.7
Bldg 149 Replacement Boilers	0.42	0.50	0.45	14.88	4.19	0.16	2.42	4,524.08
Carpentry Shops	21.11	21.11	249.51	-	-	-	-	-
Surface Coating Operations (Other)	6.99	6.99	125.79	-	-	324.78	-	-
Surface Coating Operations - (CRN-0107-01-23-HH13, CRN-0107-02-23-HH13)	0.46	0.46	9.22	-	-	23.87	-	-
Surface Coating (Bomb Refinishing and Projectile Renovation CRN-2728-01-12-N42, CRN-2728-02-12-N42, CRN-2728-03-12-N42)	1.19	1.19	23.71	-	-	39.00	-	-
Surface Coating (CRN-0106-03-23-HH13)	1.74	1.74	8.71	-	-	18.98	-	-
Surface Coating (CRN-0106-04-23-PBS1)	0.66	0.66	4.38	-	-	21.77	-	-
Surface Coating (CRN-2805-03-23-GG19)	0.19	0.19	3.86	-	-	6.63	-	-
Mixing and Pouring Building 200	4.07	4.07	407.34	-	-	-	-	-
Screening and Weighing Aluminum Powder (Building 2714)	0.57	1.06E-03		-	-	-	-	-
Screening and Weighing TNT (Building 153)	4.22E-03	4.22E-03	4.22E-03	-	-	-	-	-
Melting and Mixing Aluminum Powder and TNT (Building 152)	0.05	0.05	0.05	-	-	-	-	-
Al Sieve (CRN-0155-05A1-BH1)	14.98	17.52	17.52					
Rotary Kiln Furnace (Building 69)	6.92	106.38	106.38	-	-	-	-	-
Gasoline and Diesel Dispensing (CRN-3280-01-17-X23 and CRN-3280-02-17-X23)	-	-	-	-	-	8.48	-	-
Flare Manufacturing Processes (Buildings 2504, 145, and 198) & Flare Testing (Buildings 2869 & 366)	-	-	-	-	-	14.04	-	
Detonation Chamber (P01)	0.51	0.51	985.50	0.09	14.45	0.19	96.56	N/A
APE 1236 Rotary Kiln Incinerator P03	0.35	0.35	35.13	1.62	39.91	0.35	0.04	NA
Mill/Classifier Unit (CRN 0126 02-17-W24)	2.41	14.89	43.80	-	-	-	-	-
Chemical Conversion Process (CRN-0105-01-12-A12)	-	-	-	-	-	24.70	-	-
Natural Gas Furnaces	1.75	7.00	7.00	0.55	92.11	5.07	77.37	111,187.42
Diesel Emergency Generators <= 600 HP	2.13	2.13	2.13	1.98	29.97	2.43	6.46	1,115.56
Diesel Emergency Generators > 600 HP	0.61	0.35	0.35	3.55	21.05	0.62	4.82	1,021.15
Diesel Emergency Generator (CRN-0200-02-23-KK13)	0.11	0.06	0.06	0.63	3.71	0.11	0.85	180.18
Diesel Emergency Generator (CRN-3049-02-23-FF18)	0.21	0.12	0.12	1.21	7.16	0.21	1.64	347.56
Nat Gas Emergency Generators	0.02	0.04	0.04	1.26E-03	4.73	0.06	7.96	303.56
Extruder Processing Line	0.00E+00	0.00E+00	0.00E+00	-	-	0.95	-	-
Propane Emergency Generators	6.18E-03	0.01	0.01	3.83E-04	1.48	0.02	2.28	71.94
Steam Kettle (CRN-0160-01-A)	0.00	6.58	6.58	-	-	-	-	-
Total	**504.52**	**647.35**	**2,493.13**	**612.81**	**443.40**	**501.91**	**345.46**	**368,727.68**

** PM2.5 listed is direct PM2.5*

Note: The shaded cells indicate where limits are included.

Note: Pursuant to 326 IAC 6-3-2(d), the particulate emissions from surface coating operations shall be controlled by dry particulate filters and the Permittee shall operate the control devices in accordance with the manufacturer's specifications. Compliance with this standard, in conjuction with a conservative assumption of 95% or lower capture and control, shall limit PM, PM10, and PM2.5 emissions from the surface coating operations to the values shown.

*** Only uncontrolled and after-issuance emissions estimates available. Uncontrolled used as conservative estimate.*

Appendix A: Emission Calculations
HAP's Emissions Summary

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Note: Totals on next page.

Uncontrolled Potential to Emit (tons/year)

Pollutant	Boilers (Natural Gas Combustion Only)	Boilers (Natural Gas and No. 2 Fuel Oil Combustion)	Building 2674 Replacement Boilers	Building 2737 Replacement Boilers	Carpentry Shops	Surface Coating Operations (Other)	Surface Coating Operations (Bldg 107 Replacements)	Surface Coating (Bomb Refinishing and Projectile Renovation CRN-2728-01-12-N42, CRN-2728-02-12-N42, CRN-2728-03-12-N42)	Surface Coating (CRN-0106-03-23-HH13)	Surface Coating (CRN-0106-04-23-PBS1)	Surface Coating (CRN-2805-03-23-GG19)	Diesel Generators
Xylene						33.64	2.47	2.79	0.54	7.15		0.01
Toluene	2.01E-03	3.60E-03	1.96E-04	7.33E-05		3.59	0.26	0.43	0.38	1.08		0.02
Ethyl Benzene						5.61	0.41	0.35		0.62		
Bis Phthalate						16.82	1.24	1.04				
Hexane	1.06	1.90	0.10	0.04								
2,2,4-Trimethylpentane												
MIBK									1.19	5.44		
Selenium												
Nickel												
Manganese												
HCL												
Napthalene												
Dibutylphthalate												
2,4 Dinitrotoluene												
Hexachlorobenzene												
Formaldehyde	0.04	0.08	4.32E-03	1.62E-03								0.05
Mercury												
Magnesium												
Lead												
Dioxins												
Cadmium												
Arsenic												
Beryllium												
Chromium												
Benzene	1.24E-03	2.22E-03	1.21E-04	4.53E-05								0.04
Dichlorobenzene	7.08E-04	1.27E-03	6.90E-05	2.59E-05								
Carbon Tetrachloride												
Chlorobenzene												
Chloroform												
Methylene Chloride												
Phenol												
Trichloroethylene												
Tetrachloroethylene												
1,3-Butadiene												1.69E-03
Acetaldehyde												0.03
Acrolein												3.99E-03
C-4 HAPs												
Ethane												
Methanol												
Polyaromatic Hydrocarbons												
Total	1.11	1.99	0.11	0.04	0	59.66	4.38	4.60	2.11	14.29	0	0.16

Appendix A: Emission Calculations
HAP's Emissions Summary

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Uncontrolled Potential to Emit (tons/year)

issions Generating Activity

Pollutant	Detonation Chamber (P01)	APE 1236 Rotary Kiln Incinerator P03	Battery Dissection Fume Hood	Gasoline and Diesel Dispensing	Flare Manufacturing Processes (Buildings 2504, 145, and 198) & Flare Testing (Buildings 2869 & 366)	Natural Gas Furnaces	Diesel Emergency Generators <=600 HP	Diesel Emergency Generators >600 HP	Natural Gas Emergency Generators	Extruder Processing Line	Propane Emergency Generators	**Total**
Xylene				0.76			1.93E-03	1.35E-06	4.17E-04		2.22E-04	**47.37**
Toluene		6.90E-08		0.69		3.13E-03	2.77E-03	1.97E-06	1.19E-03		6.35E-04	6.46
Ethyl Benzene				0.14								7.13
Bis Phthalate		2.00E-07										19.09
Hexane				0.20	11.23	1.66				0.76		16.96
2,2,4-Trimethylpentane				0.20								0.20
MIBK												6.63
Selenium												-
Nickel												-
Manganese												-
HCL			1.93									1.93
Napthalene		1.90E-06										1.90E-06
Dibutylphthalate		1.00E-04										1.00E-04
2,4 Dinitrotoluene		1.00E-04										1.00E-04
Hexachlorobenzene		1.00E-04										1.00E-04
Formaldehyde						0.07	7.99E-03	5.52E-07	0.04		0.02	0.32
Mercury												-
Magnesium	0.05											5.04E-02
Lead	8.34											8.34
Dioxins												-
Cadmium												-
Arsenic												-
Beryllium												-
Chromium	5.65											5.65
Benzene		5.89E-03				1.93E-03	6.31E-03		3.38E-03		1.80E-03	0.06
Dichlorobenzene						1.11E-03						3.18E-03
Carbon Tetrachloride		3.50E-08										3.50E-08
Chlorobenzene		5.20E-08										5.20E-08
Chloroform		1.60E-07										1.60E-07
Methylene Chloride		9.50E-08										9.50E-08
Phenol		2.70E-06										2.70E-06
Trichloroethylene		2.30E-07										2.30E-07
Tetrachloroethylene		1.30E-08										1.30E-08
1,3-Butadiene							2.65E-04		1.42E-03		7.54E-04	4.13E-03
Acetaldehyde							5.19E-03	1.76E-07	5.97E-03		3.17E-03	0.05
Acrolein							6.26E-04	5.52E-08	5.63E-03		2.99E-03	0.01
C-4 HAPs										0.19		0.19
Ethane											0.08	0.08
Methanol									6.55E-03		3.48E-03	0.01
Polyaromatic Hydrocarbons							1.14E-03	1.48E-06	3.02E-04		1.60E-04	1.60E-03
Total	14	6.19E-03	1.93E+00	2.00E+00	11.23	1.73	0.03	5.59E-06	0.07	0.95	0.12	**120.57**

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit Number: 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

REFER TO "Diesel Em Gen <=600hp" TAB
CAN DELETE THIS SHEET FOR NEXT PERMIT

B. Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	359.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	179,500

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.20	0.20	0.20	0.18	2.78	0.23	0.60

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	5.86E-04	2.57E-04	1.79E-04	2.46E-05	7.41E-04	4.82E-04	5.81E-05	1.06E-04

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**2.43E-03**

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]

Appendix A: Emission Calculations
PM Emission Calculations
Abrasive Blasting Units

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Maximum Hours of Operation = 8,760.00

Emission Unit ID	Control Device	Control Efficiency (%)	Actual Hours Per Year	Abrasive Collected (lbs/yr)	Abrasive Used (lbs/yr)	Potential PM/PM10/PM2.5 Emissions (before controls) (lbs/hr)	Potential PM/PM10/PM2.5 Emissions (after controls) (lbs/hr)	Potential PM/PM10/PM2.5 Emissions (before controls) (tons/yr)	Potential PM/PM10/PM2.5 Emissions (after controls) (tons/yr)	Process Weight Rate (pounds/hr)	PM Emission limitation (lb/hr)*	PM10 Emission limitation (lb/hr)*	Potential PM Emissions (limited) (tons/yr)**	Potential PM10 Emissions (limited) (tons/yr)**
CRN-0041-06-17-V25	Filter System	0.9900	2,080.00		1,000.00	0.11	1.14E-03	0.50	5.00E-03	0.11			0.50	0.50
CRN-0041-07-17-V25	Filter System	0.9900	2,080.00		1,000.00	0.11	1.14E-03	0.50	5.00E-03	0.11			0.50	0.50
CRN-0041-08-17-V25	Filter System	0.9900	2,080.00		1,000.00	0.11	1.14E-03	0.50	5.00E-03	0.11			0.50	0.50
CRN-0104-03-23-HH16	Filter System	0.9990	2,080.00		1,000.00	0.48	4.81E-04	2.11	2.11E-03	0.48			2.11	2.11
CRN-0106-02-23-HH13	Baghouse	0.9990	2,080.00		3,000.00	1.44	1.44E-03	6.32	6.32E-03	1.44	0.50	2.19	2.19	6.32
CRN-0107-06-23-HH13	Filter System	0.9900	8,760.00	30,660.00	31,010.40	3.54	0.04	15.51	0.16	960.00	2.00	8.76	8.76	15.51
CRN-0107-07-23-HH13	Filter System	0.9900	8,760.00	183,960.00	185,712.00	21.20	0.21	92.86	0.93	2,500.00			92.86	92.86
CRN-0227-03-23-HH12	Baghouse	0.9990	2,080.00		3,000.00	1.44	1.44E-03	6.32	6.32E-03	1.44			6.32	6.32
CRN-2521-07-02-J17	Filter System	0.9990	2,080.00	36,000.00	36,036.00	17.33	0.02	75.88	0.08	17.33			75.88	75.88
CRN-2521-08-02-J17	Filter System	0.9990	2,080.00	36,000.00	36,036.00	17.33	0.02	75.88	0.08	17.33			75.88	75.88
CRN-2521-09-02-J17	Filter System	0.9990	2,080.00	36,000.00	36,036.00	17.33	0.02	75.88	0.08	17.33			75.88	75.88
CRN-3168-03-17-V28	Filter System	0.9990	2,080.00		1,000.00	0.48	4.81E-04	2.11	2.11E-03	0.48			2.11	2.11
CRN-3234-14-17-U26	Filter System	0.9990	2,080.00	36,000.00	36,036.00	17.33	0.02	75.88	0.08	17.33			75.88	75.88
PM/PM10/PM2.5 Potential to Emit before Controls (tons/yr) =								**430.24**						
PM/PM10/PM2.5 Potential to Emit after Controls (tons/yr) =									**1.42**					
PM/PM10/PM2.5 Potential to Emit - limited (tons/yr) =													**419.37**	**430.24**

Methodology

Uncontrolled PM and PM10/PM2.5 emissions were conservatively estimated assuming that all abrasive used becomes particulate emissions.

Potential PM/PM10/PM2.5 Emissions (before controls) (lbs/hr) = Abrasive Used (lbs/yr) / Actual Hours Per Year

Potential PM/PM10/PM2.5 Emissions (after controls) (lbs/hr) = Abrasive Used (lbs/yr) / Actual Hours Per Year x (1 - Control Efficiency (%))

Potential PM/PM10/PM2.5 Emissions (before controls) (tons/yr) = Abrasive Used (lbs/yr) / Actual Hours Per Year x Maximum Hours of Operation (hrs/yr) x (1 ton/2,000 lbs)

Potential PM/PM10/PM2.5 Emissions (after controls) (tons/yr) = Abrasive Used (lbs/yr) / Actual Hours Per Year x Maximum Hours of Operation (hrs/yr) x (1 ton/2,000 lbs) (1 - Control Efficiency (%))

*Federally enforceable limit included in permit.

** Lesser of uncontrolled and limited

1.2048
5.95

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Facility	Building Location	Fuel Type		Operating Capacity (MMBtu/hr)
	2167	Natural gas	1968	1.00
	2987	Natural Gas	1974	0.54
	1	Natural Gas	1977	0.40
	1	Natural Gas	1977	1.20
	1	Natural Gas	1977	0.84
	2	Natural Gas	1977	1.25
	4	Natural Gas	1977	1.08
	224	Natural Gas	1978	3.35
	300	Natural Gas	1978	0.25
	2516	Natural Gas	1978	1.68
	2721	Natural Gas	1978	0.71
	2044	Natural Gas	1979	3.35
	2059	Natural Gas	1979	0.52
	2084	Natural Gas	1979	0.51
	2693	Natural Gas	1979	0.55
	2748	Natural Gas	1979	0.54
	18	Natural Gas	1980	1.15
	1909	Natural Gas	1980	2.35
	479	Natural Gas	1981	1.20
CRN-1819-01-17-Y23	1819	Natural Gas	1981	0.86
	14	Natural Gas	1982	0.19
	2037	Natural Gas	1982	0.37
	3006	Natural Gas	1982	0.62
	7	Natural Gas	1983	2.00
	7	Natural Gas	1983	2.00
	45	Natural Gas	1983	0.28
	74	Natural Gas	1983	0.86
	2074	Natural Gas	1983	0.40
	2521	Natural Gas	1983	2.70
	2749	Natural Gas	1983	0.40
	2993	Natural Gas	1983	0.46
	4	Natural Gas	1984	0.95
	36	Natural Gas	1984	4.18
	2720	Natural Gas	1984	1.50
	2807	Natural Gas	1984	2.50
	66	Natural Gas	1985	0.13
	2036	Natural Gas	1985	0.60
	34	Natural Gas	1986	3.35
	40	Natural Gas	1986	1.27
	47	Natural Gas	1986	0.40
	77	Natural Gas	1986	1.80
	363	Natural Gas	1986	0.39
	3149	Natural Gas	1986	2.06
	366	Natural Gas	1987	0.35
	3188	Natural Gas	1987	0.50
	2035	Natural Gas	1989	0.48
	2045	Natural Gas	1989	0.51
	3173	Natural Gas	1989	0.91
	966	Natural Gas	1990	0.96
	8	Natural Gas	1991	0.53
	8	Natural Gas	1991	0.53
	10	Natural Gas	1992	1.80
	364	Natural Gas	1992	0.26
CRN-3234-03-17-U26	3234	Natural Gas	1992	0.57
	2035	Natural Gas	1993	0.25
	3235	Natural Gas	1993	0.91

Note: Continued on next page with totals.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
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Date: 11/30/2015

	3243	Natural Gas	1993	1.90
	3250	Natural Gas	1993	0.66
	3271	Natural Gas	1994	0.12
	3330	Natural Gas	1994	0.75
	3330	Natural Gas	1994	0.75
	3330	Natural Gas	1994	0.75
	3330	Natural Gas	1994	0.75
	3278	Natural Gas	1995	0.30
	3284	Natural Gas	1995	0.49
	3287	Natural Gas	1995	1.60
	3287	Natural Gas	1995	1.60
	3285	Natural Gas	1996	2.05
	3287	Natural Gas	1996	2.93
	3291	Natural Gas	1996	2.93
	38	Natural Gas	1998	4.75
	364	Natural Gas	1998	0.25
	3083	Natural Gas	1998	0.20
	3319	Natural Gas	1998	2.40
	3324	Natural Gas	1999	0.79
	2518	Natural Gas	2000	8.37
	3330	Natural Gas	2000	2.90
CRN-0180-03-17-W22	180	Natural Gas	2001	1.40
	2390	Natural Gas	2001	0.33
	3054	Natural Gas	2001	0.23
	3334	Natural Gas	2001	2.65
	3272	Natural Gas	2002	0.13
	3339	Natural Gas	2002	0.85
	3344	Natural Gas	2002	0.07
	3347	Natural Gas	2002	0.49
	2693	Natural Gas	2003	0.24
	3348	Natural Gas	2003	0.81
	11	Natural Gas	2004	0.41
	3239	Natural Gas	2004	0.37
	3287	Natural Gas	2004	2.40
	3325	Natural Gas	2004	2.42
	3333	Natural Gas	2004	2.15
	3373	Natural Gas	2006	1.04
	3373	Natural Gas	2006	1.04
	3395	Natural Gas	2006	1.20
	3395	Natural Gas	2006	1.20
	3412	Natural Gas	2007	0.32
	3412	Natural Gas	2007	0.40
	3422	Natural Gas	2007	1.03
	200	Natural Gas	2008	2.10
	200	Natural Gas	2008	2.10
	3291	Natural Gas	2008	1.20
	3330	Natural Gas	2008	1.20
CRN-1819-02-17-Y23	1819	Natural Gas	2009	3.35
	2540	Natural Gas	2009	1.00
	3330	Natural Gas	2009	0.50
	3330	Natural Gas	2009	0.50
	3330	Natural Gas	2009	0.50
	2540	Natural Gas	2010	1.00
	3330	Natural Gas	2010	1.08
	3330	Natural Gas	2010	1.08
	3334	Natural Gas	2011	1.09
	3334	Natural Gas	2011	1.09
			Total	**137.45**

HHV	Potential
mmBtu	Throughput
mmscf	MMCF/yr
1,020.00	**1,180.45**

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.90	7.60	7.60	0.60	100.00 **see below	5.50	84.00
Potential Emission in tons/yr	1.12	4.49	4.49	0.35	59.02	3.25	49.58

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

HAPS Calculations

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.10E-03	1.20E-03	0.08	1.80	3.40E-03	
Potential Emission in tons/yr	1.24E-03	7.08E-04	0.04	1.06	2.01E-03	**1.11**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03	
Potential Emission in tons/yr	2.95E-04	6.49E-04	8.26E-04	2.24E-04	1.24E-03	**3.23E-03**
					Total HAPs	**1.11**
					Worst HAP	**1.06**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000.00	2.30	2.20
Potential Emission in tons/yr	70,827.18	1.36	1.30
Summed Potential Emissions in tons/yr	70,829.83		
CO2e Total in tons/yr	71,248.07		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Dual-Fuel: Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Facility	Building	Fuel Type	Construction Date	Operating	HHV mmBtu mmscf	Potential Throughput MMCF/yr
CRN-0064-02-10-T27	64	Dual Fuel	1976	16.00		
CRN-0041-03-17-U26	41	Dual Fuel	1977	8.40		
CRN-0199-01-23-JJ14	199	Dual Fuel	1978	17.50		
CRN-0199-02-23-JJ14	199	Dual Fuel	1978	17.50		
CRN-0041-04-17-U26	41	Dual Fuel	1983	6.90		
CRN-0128-02-17-W25	128	Dual Fuel	1984	6.20		
CRN-0115-02-23-GG12	115	Dual Fuel	1985	6.20		
CRN-2737-01-12-M41	2737	Dual Fuel	1987	12.50		
CRN-2737-02-12-M41	2737	Dual Fuel	1987	12.50		
CRN-0150-01-17-CC23	150	Dual Fuel	1989	25.20		
CRN-0150-03-17-CC23	150	Dual Fuel	1989	25.20		
CRN-3234-02-17-U26	3234	Dual Fuel	1992	8.40		
CRN-3234-03-17-U26	3234	Dual Fuel	1992	8.40		
CRN-0115-03-23-GG12	115	Dual Fuel	1997	16.75		
CRN-0128-01-17-W25	128	Dual Fuel	1997	16.75		
CRN-0128-03-17-W25	128	Dual Fuel	1997	16.75		
CRN-0115-03-23-GG12	115	Dual Fuel	1997	16.750		
CRN-0180-01-17-W22	180	Dual Fuel	1999	4.19		
CRN-0180-02-17-W22	180	Dual Fuel	1999	4.19		
			Total	**246.27**	1,020.00	**2,115.02**

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.90	7.60	7.60	0.60	100.00 **see below	5.50	84.00
Potential Emission in tons/yr	2.01	8.04	8.04	0.63	105.75	5.82	88.83

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Dual-Fuel: Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

HAPS Calculations

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.10E-03	1.20E-03	0.08	1.80	3.40E-03	
Potential Emission in tons/yr	2.22E-03	1.27E-03	0.08	1.90	3.60E-03	**1.99**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03	
Potential Emission in tons/yr	5.29E-04	1.16E-03	1.48E-03	4.02E-04	2.22E-03	**5.80E-03**

Total HAPs	**2.00**
Worst HAP	**1.90**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000.00	2.30	2.20
Potential Emission in tons/yr	126,901.48	2.43	2.33
Summed Potential Emissions in tons/yr	126,906.24		
CO2e Total in tons/yr	127,655.59		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Facility	Building	Fuel Type		Operating
CRN-0064-02-10-T27	64	Dual Fuel	1976	16.00
CRN-0041-03-17-U26	41	Dual Fuel	1977	8.40
CRN-0199-01-23-JJ14	199	Dual Fuel	1978	17.50
CRN-0199-02-23-JJ14	199	Dual Fuel	1978	17.50
CRN-0041-04-17-U26	41	Dual Fuel	1983	6.90
CRN-0128-02-17-W25	128	Dual Fuel	1984	6.20
CRN-0115-02-23-GG12	115	Dual Fuel	1985	6.20
CRN-2737-01-12-M41	2737	Dual Fuel	1987	12.50
CRN-2737-02-12-M41	2737	Dual Fuel	1987	12.50
CRN-0150-01-17-CC23	150	Dual Fuel	1989	25.20
CRN-0150-03-17-CC23	150	Dual Fuel	1989	25.20
CRN-3234-02-17-U26	3234	Dual Fuel	1992	8.40
CRN-3234-03-17-U26	3234	Dual Fuel	1992	8.40
CRN-0115-03-23-GG12	115	Dual Fuel	1997	16.75
CRN-0128-01-17-W25	128	Dual Fuel	1997	16.75
CRN-0128-03-17-W25	128	Dual Fuel	1997	16.75
CRN-0115-03-23-GG12	115	Dual Fuel	1997	16.750
CRN-0180-01-17-W22	180	Dual Fuel	1999	4.19
CRN-0180-02-17-W22	180	Dual Fuel	1999	4.19
			Total	**246.27**

HHV	Potential
mmBtu	Throughput
kgal	kgals/year
140.00	**15,409.47**

S = Weight % Sulfur

0.50

	Pollutant						
	PM*	PM10	direct PM2.5	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.00	2.38	2.13	71.00 *(142.0S)*	20.00	0.34	5.00
Potential Emission in tons/yr	15.41	18.34	16.41	547.04	154.09	2.62	38.52

Methodology

1.30

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu

Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)

*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
See page 2 for HAPs emission calculations.

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/mmBtu	4.00E-06	3.00E-06	3.00E-06	3.00E-06	9.00E-06
Potential Emission in tons/yr	4.31E-03	3.24E-03	3.24E-03	3.24E-03	9.71E-03

	HAPs - Metals (continued)			
	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/mmBtu	3.00E-06	6.00E-06	3.00E-06	1.50E-05
Potential Emission in tons/yr	3.24E-03	6.47E-03	3.24E-03	0.02

Methodology

No data was available in AP-42 for organic HAPs.

Potential Emissions (tons/year) = Throughput (mmBtu/hr)*Emission Factor (lb/mmBtu)*8,760 hrs/yr / 2,000 lb/ton

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/kgal	21,500.00	0.22	0.26
Potential Emission in tons/yr	165,651.76	1.66	2.00
Summed Potential Emissions in tons/yr	165,655.42		
CO2e Total in tons/yr	166,290.32		

Methodology

The CO2 Emission Factor for #1 Fuel Oil is 21500. The CO2 Emission Factor for #2 Fuel Oil is 22300.

Emission Factors are from AP 42, Tables 1.3-3, 1.3-8, and 1.3-12 (SCC 1-03-005-01/02/03) Supplement E 9/99 (see erata file)

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Make	Building	Fuels	Constructed Date	Max Capacity (MMBtu/hr)	Exhaust Stack		
20	CRN-2674-01-00-0001	Cleaver	2674	NG/FO	2013	6.70	CRN-2674-01-00-		
21	CRN-2674-02-00-0001	Cleaver	2674	NG/FO	2013	6.70	CRN-2674-02-00-		
					Total	**13.40**		1,020.00	**115.08**

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.90	7.60	7.60	0.60	100.00 **see below	5.50	84.00
Potential Emission in tons/yr	0.11	0.44	0.44	0.03	5.75	0.32	4.83

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

HAPS Calculations

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.10E-03	1.20E-03	0.08	1.80	3.40E-03	
Potential Emission in tons/yr	1.21E-04	6.90E-05	4.32E-03	0.10	1.96E-04	**0.11**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03	
Potential Emission in tons/yr	2.88E-05	6.33E-05	8.06E-05	2.19E-05	1.21E-04	**3.15E-04**

Total HAPs	**0.11**
Worst HAP	**0.10**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000.00	2.30	2.20
Potential Emission in tons/yr	6,904.94	0.13	0.13
Summed Potential Emissions in tons/yr	6,905.20		
CO2e Total in tons/yr	6,945.97		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil
Buiding 2674 Replacement Boilers

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Make	Building	Fuels	Constructed Date	Max Capacity (MMBtu/hr)	Exhaust Stack	HHV mmBtu	Potential Throughput
25	CRN-2674-01-00-0001	Cleaver Brooks	2674	NG/FO	2013	6.70	CRN-2674-01-00-0001-S	kgal	kgals/year
26	CRN-2674-02-00-0001	Cleaver Brooks	2674	NG/FO	2013	6.70	CRN-2674-02-00-0001-S		
					Total	**13.40**		140.00	**838.46**

S = Weight % Sulfur
0.50

	Pollutant						
	PM*	PM10	direct PM2.5	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.00	2.38	2.13	71.00 *(142.0S)*	20.00	0.34	5.00
Potential Emission in tons/yr	0.84	1.00	0.89	29.77	8.38	0.14	2.10

Methodology

1.30

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu

Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)

*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
See page 2 for HAPs emission calculations.

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/mmBtu	4.00E-06	3.00E-06	3.00E-06	3.00E-06	9.00E-06
Potential Emission in tons/yr	2.35E-04	1.76E-04	1.76E-04	1.76E-04	5.28E-04

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil
Buiding 2674 Replacement Boilers

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe

	HAPs - Metals (continued)			
	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/mmBtu	3.00E-06	6.00E-06	3.00E-06	1.50E-05
Potential Emission in tons/yr	1.76E-04	3.52E-04	1.76E-04	8.80E-04
			Total HAPs	**2.88E-03**
			Worst HAP	**8.80E-04**

Methodology

No data was available in AP-42 for organic HAPs.

Potential Emissions (tons/year) = Throughput (mmBtu/hr)*Emission Factor (lb/mmBtu)*8,760 hrs/yr / 2,000 lb/ton

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/kgal	21,500.00	0.22	0.26
Potential Emission in tons/yr	9,013.41	0.09	0.11
Summed Potential Emissions in tons/yr	9,013.61		
CO2e Total in tons/yr	9,048.16		

Methodology

The CO2 Emission Factor for #1 Fuel Oil is 21500. The CO2 Emission Factor for #2 Fuel Oil is 22300.

Emission Factors are from AP 42, Tables 1.3-3, 1.3-8, and 1.3-12 (SCC 1-03-005-01/02/03) Supplement E 9/99 (see erata file)

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Summary for Building 2674 Replacement Boilers

Emission Unit	PM	PM10	PM2.5 *	SO_2	NOx	VOC	CO	CO2e
Building 2674 Replacement Boilers (Natural Gas and No. 2 Fuel Oil Combustion)	0.84	1.00	0.89	29.77	8.38	0.32	4.83	9,048.16

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Make	Building	Fuels	Constructed Date	Max Capacity (MMBtu/hr)	Exhaust Stack		
20	CRN-2737-04-12-M41-S	Cleaver	2,737.00	NG/FO	2014	5.02	CRN-2737-03-12-M41-S		
					Total	**5.02**		1,020.00	**43.11**

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.90	7.60	7.60	0.60	100.00 **see below	5.50	84.00
Potential Emission in tons/yr	0.04	0.16	0.16	0.01	2.16	0.12	1.81

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

HAPS Calculations

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.10E-03	1.20E-03	0.08	1.80	3.40E-03	
Potential Emission in tons/yr	4.53E-05	2.59E-05	1.62E-03	0.04	7.33E-05	**0.04**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03	
Potential Emission in tons/yr	1.08E-05	2.37E-05	3.02E-05	8.19E-06	4.53E-05	**1.18E-04**

Total HAPs	**0.04**
Worst HAP	**0.04**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000.00	2.30	2.20
Potential Emission in tons/yr	2,586.78	0.05	0.05
Summed Potential Emissions in tons/yr	2,586.87		
CO2e Total in tons/yr	2,602.15		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil
Buiding 2674 Replacement Boilers

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Make	Building	Fuels	Constructed Date	Max Capacity (MMBtu/hr)	Exhaust Stack	HHV mmBtu	Potential Throughput
20	CRN-2737-04-12-M41-S	Cleaver Brooks	2,737.00	NG/FO	2014	5.02	CRN-2737-03-12-M41-S	kgal	kgals/year
					Total	**5.02**		140.00	**314.11**

S = Weight % Sulfur
0.50

	Pollutant						
	PM*	PM10	direct PM2.5	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.00	2.38	2.13	71.00 *(142.0S)*	20.00	0.34	5.00
Potential Emission in tons/yr	0.31	0.37	0.33	11.15	3.14	0.05	0.79

Methodology

1.30

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu

Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)

*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
See page 2 for HAPs emission calculations.

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/mmBtu	4.00E-06	3.00E-06	3.00E-06	3.00E-06	9.00E-06
Potential Emission in tons/yr	8.80E-05	6.60E-05	6.60E-05	6.60E-05	1.98E-04

	HAPs - Metals (continued)			
	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/mmBtu	3.00E-06	6.00E-06	3.00E-06	1.50E-05
Potential Emission in tons/yr	6.60E-05	1.32E-04	6.60E-05	3.30E-04
			Total HAPs	**1.08E-03**
			Worst HAP	**3.30E-04**

Methodology
No data was available in AP-42 for organic HAPs.
Potential Emissions (tons/year) = Throughput (mmBtu/hr)*Emission Factor (lb/mmBtu)*8,760 hrs/yr / 2,000 lb/ton

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil
Buiding 2674 Replacement Boilers

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/kgal	21,500.00	0.22	0.26
Potential Emission in tons/yr	3,376.67	0.03	0.04
Summed Potential Emissions in tons/yr	3,376.74		
CO2e Total in tons/yr	3,389.68		

Methodology

The CO2 Emission Factor for #1 Fuel Oil is 21500. The CO2 Emission Factor for #2 Fuel Oil is 22300.

Emission Factors are from AP 42, Tables 1.3-3, 1.3-8, and 1.3-12 (SCC 1-03-005-01/02/03) Supplement E 9/99 (see erata file)

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Summary for Building 2674 Replacement Boilers

Emission Unit	PM	PM10	PM2.5 *	SO_2	NOx	VOC	CO	CO2e
Building 2674 Replacement Boilers (Natural Gas and No. 2 Fuel Oil Combustion)	0.31	0.44	0.44	11.15	5.75	0.32	4.83	6,945.97

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Make	Building	Fuels	Constructed Date	Max Capacity (MMBtu/hr)	Exhaust Stack		
	CRN-0149-01-10-S30	Cleaver	169	NG/FO	2014	6.70	CRN-0149-01-10-S30-S		
	CRN-0149-02-10-S31	Cleaver	169	NG/FO	2014	6.70	CRN-0149-02-10-S30-S		
					Total	**6.70**		1,020.00	**57.54**

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.90	7.60	7.60	0.60	100.00 **see below	5.50	84.00
Potential Emission in tons/yr	0.05	0.22	0.22	0.02	2.88	0.16	2.42

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

HAPS Calculations

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.10E-03	1.20E-03	0.08	1.80	3.40E-03	
Potential Emission in tons/yr	6.04E-05	3.45E-05	2.16E-03	0.05	9.78E-05	**0.05**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03	
Potential Emission in tons/yr	1.44E-05	3.16E-05	4.03E-05	1.09E-05	6.04E-05	**1.58E-04**

Total HAPs	**0.05**
Worst HAP	**0.05**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000.00	2.30	2.20
Potential Emission in tons/yr	3,452.47	0.07	0.06
Summed Potential Emissions in tons/yr	3,452.60		
CO2e Total in tons/yr	3,472.99		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil
Buiding 2674 Replacement Boilers

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Make	Building	Fuels	Constructed Date	Max Capacity (MMBtu/hr)	Exhaust Stack	HHV mmBtu	Potential Throughput kgals/year
	CRN-0149-01-10-S30	Cleaver Brooks	169	NG/FO	2014	6.70	CRN-0149-01-10-S30-S	kgal	
	CRN-0149-02-10-S31	Cleaver Brooks	169	NG/FO	2014	6.70	CRN-0149-02-10-S30-S		
					Total	**6.70**		140.00	**419.23**

S = Weight % Sulfur
0.50

	Pollutant						
	PM*	PM10	direct PM2.5	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.00	2.38	2.13	71.00 *(142.0S)*	20.00	0.34	5.00
Potential Emission in tons/yr	0.42	0.50	0.45	14.88	4.19	0.07	1.05

Methodology

1.30

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu

Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)

*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
See page 2 for HAPs emission calculations.

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/mmBtu	4.00E-06	3.00E-06	3.00E-06	3.00E-06	9.00E-06
Potential Emission in tons/yr	1.17E-04	8.80E-05	8.80E-05	8.80E-05	2.64E-04

	HAPs - Metals (continued)			
	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/mmBtu	3.00E-06	6.00E-06	3.00E-06	1.50E-05
Potential Emission in tons/yr	8.80E-05	1.76E-04	8.80E-05	4.40E-04

Total HAPs	**1.44E-03**
Worst HAP	**4.40E-04**

Methodology
No data was available in AP-42 for organic HAPs.
Potential Emissions (tons/year) = Throughput (mmBtu/hr)*Emission Factor (lb/mmBtu)*8,760 hrs/yr / 2,000 lb/ton

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil
Buiding 2674 Replacement Boilers

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/kgal	21,500.00	0.22	0.26
Potential Emission in tons/yr	4,506.71	0.05	0.05
Summed Potential Emissions in tons/yr	4,506.81		
CO2e Total in tons/yr	4,524.08		

Methodology

The CO2 Emission Factor for #1 Fuel Oil is 21500. The CO2 Emission Factor for #2 Fuel Oil is 22300.

Emission Factors are from AP 42, Tables 1.3-3, 1.3-8, and 1.3-12 (SCC 1-03-005-01/02/03) Supplement E 9/99 (see erata file)

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Summary for Building 149 Replacement Boilers

Emission Unit	PM	PM10	PM2.5 *	SO_2	NOx	VOC	CO	CO2e
Building 149 Replacement Boilers (Natural Gas and No. 2 Fuel Oil Combustion)	0.42	0.50	0.45	14.88	4.19	0.16	2.42	4,524.08

Appendix A: Emission Calculations
PM Emission Calculations
Carpentry Shops

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Maximum Hours of Operation = 8,760.00

Emission Unit ID	Control Device	Control Efficiency (%)	Actual Hours Per Year	Hopper Capacity (acf)	Hopper Emptied (times/yr)	Sawdust Collected (lbs/yr)	Sawdust Generated (lbs/yr)	Potential $PM/PM_{10}/PM_{2.5}$ Emissions (before controls) (lbs/hr)	Potential $PM/PM_{10}/PM_{2.5}$ Emissions (after controls) (lbs/hr)	Potential $PM/PM_{10}/PM_{2.5}$ Emissions (before controls) (tons/yr)	Potential $PM/PM_{10}/PM_{2.5}$ Emissions (after controls) (tons/yr)	PM Emission limitation (lb/hr)*	Emission limitation (tons/yr)*	Potential PM Emissions (limited) (tons/yr)**
CRN-0224-02-23-HH12	Cyclone	0.990	2,080.00	324.00	26.00	101,088.00	102,109.00	49.09	0.49	215.02	2.15	3.20	14.02	14.02
CRN-2720-04-23-GG12	Cyclone	0.990	80.00	26.00	2.00	624.00	630.00	7.88	0.08	34.49	0.33	1.62	7.10	7.10

PM/PM10/PM2.5 Potential to Emit before Controls (tons/yr) = 249.51
PM/PM10/PM2.5 Potential to Emit after Controls (tons/yr) = 2.48
PM Potential to Emit after permit limit (tons/yr) = 21.11

Methodology
Uncontrolled PM and PM10/PM2.5 emissions were conservatively estimated assuming that all sawdust generated becomes particulate emissions.
Potential PM/PM10/PM2.5 Emissions (before controls) (lbs/hr) = Sawdust Generated (lbs/yr) / Actual Hours Per Year
Potential PM/PM10/PM2.5 Emissions (after controls) (lbs/hr) = Sawdust Generated (lbs/yr) - Sawdust Collected / Actual Hours Per Year
Potential PM/PM10/PM2.5 Emissions (before controls) (tons/yr) = Sawdust Generated (lbs/yr) / Actual Hours Per Year x Maximum Hours of Operation (hrs/yr) x (1 ton/2,000 lbs)
Potential PM/PM10/PM2.5 Emissions (after controls) (tons/yr) = Sawdust Generated (lbs/yr) - Sawdust Collected / Actual Hours Per Year x Maximum Hours of Operation (hrs/yr) x (1 ton/2,000 lbs)
*Federally enforceable limit included in permit.
** Lesser of uncontrolled and limited

Appendix A: Emissions Calculations
VOC, HAP, and Particulate Emissions
From Surface Coating Operations - Not Specified Elsewhere (18 Booths)**

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

1. VOC and PM Emissions:

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gallons of material (gals/hr)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	PM Control Efficiency (%)*	Particulate Potential (after Controls) (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Enamel OD - As Applied	9.09	0.54	0	0.54	0	0.37	0.76	4.88	4.88	3.69	88.51	16.15	6.97	0.95	0.35	N/A	0.50
Primer - As Applied	9.41	0.58	0	0.58	0	0.33	0.76	5.45	5.45	4.12	98.87	18.04	6.55	0.95	0.33	N/A	0.50
Enamel Yellow - As Applied	9.22	0.54	0	0.54	0	0.34	0.76	5.00	5.00	3.78	90.78	16.57	6.99	0.95	0.35	N/A	0.50
Potential Emissions (tons/yr) =										**4.12**	**98.87**	**18.04**	**6.99**		**0.35**		
Potential Emissions (tons/yr) for eighteen. (18) booths =										**74.15**	**1,779.64**	**324.78**	**125.79**		**6.99**		

Methodology
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) x Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) x Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (8,760 hr/yr) x (1 ton/2,000 lbs)
Particulate Potential Tons per Year = Gallons of material (gal/hr) x Density (lbs/gal) x (1- Weight % Volatiles) x (1-Transfer efficiency) x (8,760 hrs/yr) x (1 ton/2,000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) x Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used
* Assumed a PM control efficiency of 95% for dry filers.

2. HAP Emissions:

Material	Density (Lbs/Gal)	Gallons of Material (gal/hour)	Weight % of Toluene	Weight % of Xylene	Weight % of Ethyl Benzene	Weight % of Bis Phthalate	PTE of Toluene (tons/yr)	PTE of Xylene (tons/yr)	PTE of Ethyl Benzene (tons/yr)	PTE of Bis Phthalate (tons/yr)
Enamel OD - As Applied	9.09	0.76	0	0.01	0	0	0	0.30	0	0
Primer - As Applied	9.41	0.76	6.40E-03	0.06	0.01	0.03	0.20	1.87	0.31	0.93
Enamel Yellow - As Applied	9.22	0.76	5.50E-03	0.01	0	0	0.17	0.31	0	0
Potential Emissions (tons/yr) =							**0.20**	**1.87**	**0.31**	**0.93**

Worst-Case Single HAP Emissions (tons/yr) = **1.87 (xylene)**
Worst-Case Total HAP Emissions (tons/yr) = **3.31**
Worst-Case Single HAP Emissions (tons/yr) for eighteen booths = **37.4(xylene)**
Worst-Case Total HAP Emissions (tons/yr) for eighteen booths = **59.58**

Methodology
HAP emission rate (tons/yr) = Density (lb/gal) x Gallons of Material (gal/hr) x Weight % HAP x 8,760 hrs/yr x 1 ton/2,000 lbs

**Surface coating booth CRN-3168-02-17-V28 is not included above. The potential emissions of VOC for this booth are less than 25 tons per year.
In-kind replacement booths for CRN-0107-01-23-HH13 and CRN-0107-02-23-HH13 are accounted for in 'Surface Coat - Bldg 107 Replace' sheet.

Appendix A: Emissions Calculations
VOC, HAP, and Particulate Emissions
Surface Coating Operations - Building 107 In-Kind Replacement Booths

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

1. VOC and PM Emissions:

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gallon of paint/unit	Units/hr	Gallons of material (gals/hr)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	PM Control Efficiency (%)*	Particulate Potential (after Controls)	lb VOC/gal solids	Transfer Efficiency
Enamel OD - As Applied	9.09	0.54	0	0.54	0	0.37	6.25E-03	80.00	0.50	4.88	4.88	2.44	58.54	10.68	4.61	0.95	0.23	N/A	0.50
Primer - As Applied	9.41	0.58	0	0.58	0	0.33	6.25E-03	80.00	0.50	5.45	5.45	2.72	65.39	11.93	4.33	0.95	0.22	N/A	0.50
Enamel Yellow - As Applied	9.22	0.54	0	0.54	0	0.34	6.25E-04	80.00	0.05	5.00	5.00	0.25	6.00	1.10	0.46	0.95	0.02	N/A	0.50

Potential Emissions (tons/yr) = **2.72** **65.39** **11.93** **4.61** **0.23**
Potential Emissions (tons/yr) for two (2) booths = **5.45** **130.78** **23.87** **9.22** **0.46**

Methodology
A maximum potential of 800 units can be processed in one 10 hour shift. The number of units processed is limited by the speed of the painting line.
The current usage (max potential of 800 rounds) is 5 gallons of Primer, 5 gallons of Top Coat Enamel, and 0.5 gallons of yellow. The yellow is for a stripe. At the end of the 10 hour shift, all 800 rounds are completely painted through all 3 coatings.
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) x Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) x Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (8,760 hr/yr) x (1 ton/2,000 lbs)
Particulate Potential Tons per Year = Gallons of material (gal/hr) x Density (lbs/gal) x (1- Weight % Volatiles) x (1-Transfer efficiency) x (8,760 hrs/yr) x (1 ton/2,000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) x Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used
* Assumed a PM control efficiency of 95% for dry filers.

2. HAP Emissions:

Material	Density (Lbs/Gal)	Gallon of paint/unit	Units/hr	Gallons of Material (gal/hour)	Weight % of Toluene	Weight % of Xylene	Weight % of Ethyl Benzene	Weight % of Bis Phthalate	PTE of Toluene (tons/yr)	PTE of Xylene (tons/yr)	PTE of Ethyl Benzene (tons/yr)	PTE of Bis Phthalate (tons/yr)
Enamel OD - As Applied	9.09	6.25E-03	80.00	0.50	0	0.01	0	0	0	0.20	0	0
Primer - As Applied	9.41	6.25E-03	80.00	0.50	6.40E-03	0.06	0.01	0.03	0.13	1.24	0.21	0.62
Enamel Yellow - As Applied	9.22	6.25E-04	80.00	0.05	5.50E-03	0.01	0	0	0.01	0.02	0	0
Potential Emissions (tons/yr) =									**0.13**	**1.24**	**0.21**	**0.62**

Worst-Case Single HAP Emissions (tons/yr) = **1.24** **(xylene)**
Worst-Case Total HAP Emissions (tons/yr) = **2.19**
Worst-Case Single HAP Emissions (tons/yr) for two booths = **2.47** **(xylene)**
Worst-Case Total HAP Emissions (tons/yr) for two booths = **4.38**

Methodology
HAP emission rate (tons/yr) = Density (lb/gal) x Gallons of Material (gal/hr) x Weight % HAP x 8,760 hrs/yr x 1 ton/2,000 lbs

Appendix A: Emissions Calculations
VOC, HAP, and Particulate Emissions
From Surface Coating Operations - Bomb Refinishing Line and Projectile Renovation Operations

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

1. VOC and PM Emissions:

Emission Unit ID	Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gallons of material (gals/hr)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	PM Control Efficiency (%)*	Particulate Potential (after Controls) (ton/yr)	lb VOC/gal solids	Transfer Efficiency
CRN-2728-01-12-N42	Enamel OD - As Applied	9.09	0.54	0	0.54	0	0.37	0.84	4.88	4.88	4.09	98.10	17.90	7.72	0.95	0.39	N/A	0.50
CRN-2728-02-12-N42	Primer - As Applied	9.41	0.58	0	0.58	0	0.33	0.84	5.45	5.45	4.57	109.58	20.00	7.26	0.95	0.36	N/A	0.50
CRN-2728-03-12-N42	Enamel Yellow - As Applied	9.22	0.54	0	0.54	0	0.34	0.94	5.00	5.00	4.72	113.23	20.66	8.72	0.95	0.44	N/A	0.50
Potential Emissions (tons/yr) =											**13.37**	**320.91**	**58.57**	**23.71**		**1.19**		

Methodology
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) x Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) x Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (8,760 hr/yr) x (1 ton/2,000 lbs)
Particulate Potential Tons per Year = Gallons of material (gal/hr) x Density (lbs/gal) x (1- Weight % Volatiles) x (1-Transfer efficiency) x (8,760 hrs/yr) x (1 ton/2,000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) x Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used
* Assumed a PM control efficiency of 95% for dry filers.

2. HAP Emissions:

Emission Unit ID	Material	Density (Lbs/Gal)	Gallons of Material (gal/hour)	Weight % of Toluene	Weight % of Xylene	Weight % of Ethyl Benzene	Weight % of Bis Phthalate	PTE of Toluene (tons/yr)	PTE of Xylene (tons/yr)	PTE of Ethyl Benzene (tons/yr)	PTE of Bis Phthalate (tons/yr)
CRN-2728-01-12-N42	Enamel OD - As Applied	9.09	0.84	0	0.01	0	0	0	0.33	0	0
CRN-2728-02-12-N42	Primer - As Applied	9.41	0.84	6.40E-03	0.06	0.01	0.03	0.22	2.07	0.35	1.04
CRN-2728-03-12-N42	Enamel Yellow - As Applied	9.22	0.94	5.50E-03	0.01	0	0	0.21	0.38	0	0
Potential Emissions (tons/yr) =								**0.43**	**2.79**	**0.35**	**1.04**

Worst-Case Single HAP Emissions (tons/yr) = **2.79**
Worst-Case Total HAP Emissions (tons/yr) = **4.60**

Methodology
HAP emission rate (tons/yr) = Density (lb/gal) x Gallons of Material (gal/hr) x Weight % HAP x 8,760 hrs/yr x 1 ton/2,000 lbs

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations (CRN-0106-03-23-HH13)

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

1. VOC and PM Emissions:

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gallons of material (gals/hr)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	PM Control Efficiency (%)*	Particulate Potential (after Controls) (ton/yr)	lb VOC/gal solids	Transfer Efficiency**
Primer - As Applied	10.40	0.56	0.23	0.33	0	0.37	0.56	3.41	3.41	1.91	45.85	8.37	3.93	0.80	0.79	N/A	0.65
Topcoat - As Applies	10.00	0.35	0	0.35	0	0.33	0.48	3.50	3.50	1.68	40.32	7.36	4.78	0.80	0.96	N/A	0.65
Clean-up Solvent	7.42	1.00	0	1.00	0	0.34	0.10	7.42	7.42	0.74	17.81	3.25	0	0.80	0	N/A	0.65
Potential Emissions (tons/yr) =										**4.33**	**103.97**	**18.98**	**8.71**		**1.74**		

Methodology
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) x Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) x Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (8,760 hr/yr) x (1 ton/2,000 lbs)
Particulate Potential Tons per Year = Gallons of material (gal/hr) x Density (lbs/gal) x (1- Weight % Volatiles) x (1-Transfer efficiency) x (8,760 hrs/yr) x (1 ton/2,000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) x Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used
* A PM control efficiency of 80% was assumed for the dry filers.
** HVLP application method is used in this booth. The transfer efficiency is from a HVLP document prepared by BINKS.

2. HAP Emissions:

Material	Density (Lbs/Gal)	Gallons of Material (gal/hour)	Weight % of Toluene	Weight % of Xylene	Weight % of MIBK	PTE of Toluene (tons/yr)	PTE of Xylene (tons/yr)	PTE of MIBK (tons/yr)
Primer - As Applied	10.40	0.56	0	0.01	0.01	0	0.32	0.26
Topcoat - As Applies	10.00	0.48	0	0	0.04	0	0	0.94
Clean-up Solvent	7.42	0.10	0.12	0.07	0	0.38	0.22	0
Potential Emissions (tons/yr) =						**0.38**	**0.54**	**1.19**

Worst-Case Single HAP Emissions (tons/yr) = **1.19**
Worst-Case Total HAP Emissions (tons/yr) = **2.11**

Methodology
HAP emission rate (tons/yr) = Density (lb/gal) x Gallons of Material (gal/hr) x Weight % HAP x 8,760 hrs/yr x 1 ton/2,000 lbs

Appendix A: Emission Calculations
VOCs and PM Emission Calculations
Surface Coating Operations

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Worst-Case Emissions for Surface Coating Booth PBS1

Coating Type	Emission Unit ID	Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Maximum Usage (gal/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency	Control Device	Control Efficiency (%)	Controlled Particulate Potential (ton/yr)
Primer	CRN-0106-04-23-PBS1	White Epoxy-Polyimide Primers (Component A + Component B)	7.64	0.54	0	0.54	0	0.46	0.80	4.12	4.12	3.30	79.10	14.44	3.08	8.94	0.75	Dry Filter	0.85	0.46
Worst-Case (Primer) Emissions (tons/yr)														**14.44**	**3.08**					**0.46**

Coating Type	Emission Unit ID	Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Maximum Usage (gal/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency	Control Device	Control Efficiency (%)	Controlled Particulate Potential (ton/yr)
Topcoat	CRN-0106-04-23-PBS1	Polyurethanes	4.77	0.58	0	0.58	0	0.42	0.60	2.79	2.79	1.67	40.18	7.33	1.30	6.72	0.75	Dry Filter	0.85	0.20
Worst-Case (Topcoat) Emissions (tpy)														**7.33**	**1.30**					**0.20**

Worst-Case Emissions (Primer + Topcoat) (tons/yr) =														**21.77**	**4.38**					**0.66**

Methodology

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) x Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) x Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (8,760 hr/yr) x (1 ton/2,000 lbs)
Particulate Potential Tons per Year = Gallons of material (gal/hr) x Density (lbs/gal) x (1- Weight % Volatiles) x (1-Transfer efficiency) x (8,760 hrs/yr) x (1 ton/
Pounds VOC per Gallon of Solids = (Density (lbs/gal) x Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used
The source utilizes dry filters to control emissions of particulates. The control efficiency of the dry filters, for particulate control, has conservatively been estimated at 85%.

Appendix A: Emission Calculations
HAP Emission Calculations
Surface Coating Operations

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Worst-Case HAP Emissions for Surface Coating Booth CRN-0106-04-23-PBS1

Material	Density (Lb/Gal)	Maximum Usage (gal/hour)	Weight % of Xylenes	Weight % of Ethyl Benzene	Weight % of Toluene	Weight % of Naphthalene	Weight % of MIBK	PTE of Xylenes (tons/yr)	PTE of Ethyl Benzene (tons/yr)	PTE of Toluene (tons/yr)	PTE of Naphthalene (tons/yr)	PTE of MIBK (tons/yr)
White Epoxy-Polyimide Primers (Component A + Component B)	7.64	0.80	0.27	0.02	0	0	0.08	7.15	0.62	0	0	2.19
Polyurethanes	4.77	0.60	0	0	0.09	1.09E-03	0.26	0	0	1.08	0.01	3.26
Worst-Case Emissions (Primer + Topcoat) (tons/yr) =								**7.15**	**0.62**	**1.08**	**0.01**	**5.44**

Worst-Case Single HAP Emissions (tons/yr) = **7.15**
Worst-Case Total HAP Emissions (tons/yr) = **14.31**

Methodology

HAP emission rate (tons/yr) = Density (lb/gal) x Gallons of Material (gal/hr) x Weight % HAP x 8,760 hrs/yr x 1 ton/2,000 lbs

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations (CRN-2805-03-23-GG19)

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics		Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	PM Control Efficiency (%)*	Particulate Potential (after Controls) (ton/yr)	lb VOC/gal solids	Transfer Efficiency
MIL-C-53039A AM-2	11.07	0.36	0.09	0.27	0.13	0.41	0.05	10.00	3.48	3.03	1.51	36.35	6.63	3.86	0.95	0.19	7.39	0.75
Potential Emissions (tons/yr) =											**1.51**	**36.35**	**6.63**	**3.86**		**0.19**		

Methodology

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) x Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) x Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) x Gallons of Material (gal/hr) x (8,760 hr/yr) x (1 ton/2,000 lbs)
Particulate Potential Tons per Year = Gallons of material (gal/hr) x Density (lbs/gal) x (1- Weight % Volatiles) x (1-Transfer efficiency) x (8,760 hrs/yr) x (1 ton/2,000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) x Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used
* Assumed a PM control efficiency of 95% for dry filers.
Surface coating operation does not utilize HAP emitting coatings.

Appendix A: Emission Calculations
Mixing and Pouring Bldg 200

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

PM/PM10PM2.5 Uncontrolled

0.93 lb / hr	1.00 (1-.99) efficiency	8760 hr / yr	1 ton / 2000 lb	=	**407.34**	tons / yr	PM/PM10/PM2.5 Uncontrolled

407.34	*.01 =	**4.07**	tons / yr	PM/PM10/PM2.5 After Controls and Limits

NOTE: Source agreed to 0.93 lb/hr emission limitation per 326 IAC 6-3-2. Assume 99% control efficiency from scrubber.

Appendix A: Emission Calculations
Screening and Weighing TNT, Building 2714

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Capacity (lb/hr)	Capacity (tons/hr)	PM/PM10/PM2.5 Emission Factor (lbs PM/ton)	PTE PM/PM10/PM2.5 (lbs/hr)	PTE PM/PM10/P2.5 (tons/yr)	PTE PM/PM10/P2.5 After Control (tons/yr)	PM Limit (lbs/hr)	PM Limited (tons/year)
Screening and Weighing Aluminum (Building 2714)	161.5	0.08075	0.003	2.42E-04	1.06E-03	1.06106E-05	0.13	0.5694

Emission Factors are from AP 42, Chapter 11.19.2 - Crushed Stone Processing and Pulverized Mineral Processing, Fines Crushing (SCC 3-05-020-05) Table 11.19.2-2 (August 2004).

Methodology:

PM10/PM2.5 Emission Factor assumed equal to PM Emission Factor

PTE PM/PM10/PM2.5 (lbs/hr) = Capacity (tons/hr) * PM Emission Factor (lbs PM/ton)

PTE PM/PM10/PM2.5 (tons/yr) = Capacity (tons/hr) * PM Emission Factor (lbs PM/ton) * 1 ton / 2000 lbs * 8760 hours / 1 yr

Appendix A: Emission Calculations
Screening and Weighing TNT, Building 153

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Capacity (lb/hr)	Capacity (tons/hr)	PM/PM10/PM2.5 Emission Factor (lbs PM/ton)	PTE PM/PM10/PM2.5 (lbs/hr)	PTE PM/PM10/P2.5 (tons/yr)	After Control (tons/yr)	PM Limit (lbs/hr)	PM Limited (tons/year)
Screening and Weighing TNT (Building 153)	641.8	0.3209	0.003	9.63E-04	4.22E-03	4.21663E-05	1.91	8.3658

Emission Factors are from AP 42, Chapter 11.19.2 - Crushed Stone Processing and Pulverized Mineral Processing, Fines Crushing (SCC 3-05-020-05) Table 11.19.2-2 (August 2004).

Methodology:

PM10/PM2.5 Emission Factor assumed equal to PM Emission Factor

PTE PM/PM10/PM2.5 (lbs/hr) = Capacity (tons/hr) * PM Emission Factor (lbs PM/ton)

PTE PM/PM10/PM2.5 (tons/yr) = Capacity (tons/hr) * PM Emission Factor (lbs PM/ton) * 1 ton / 2000 lbs * 8760 hours / 1 yr

Appendix A: Emission Calculations
Melting and Mixing Aluminum Powder and TNT in Building 152

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Capacity (lb/hr)	Capacity (tons/hr)	PM/PM10/PM2.5 Emission Factor (lbs PM/ton)	PTE PM/PM10/PM2.5 (lbs/hr)	PTE PM/PM10/P2.5 (tons/yr)	After Control (tons/yr)	PM Limit (lbs/hr)	PM Limited (tons/year)
Melt and Mix Aluminum powder and TNT (Building 152)	8032.5	4.01625	0.003	1.20E-02	0.05	5.28E-04	10.41	45.5958

Emission Factors are from AP 42, Chapter 11.19.2 - Crushed Stone Processing and Pulverized Mineral Processing, Fines Crushing (SCC 3-05-020-05) Table 11.19.2-2 (August 2004).

Methodology:

PM10/PM2.5 Emission Factor assumed equal to PM Emission Factor

PTE PM/PM10/PM2.5 (lbs/hr) = Capacity (tons/hr) * PM Emission Factor (lbs PM/ton)

PTE PM/PM10/PM2.5 (tons/yr) = Capacity (tons/hr) * PM Emission Factor (lbs PM/ton) * 1 ton / 2000 lbs * 8760 hours / 1 yr

Appendix A: Emission Calculations
Aluminum Powder Sieve

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Emission Unit ID	Control Device	Control Efficiency (%)	Emission Factor (lbs/ton)	Process Weight Rate (tons/hour)	Emissons (lbs/hour)	Maximum hours of operation	PTE of PM/PM10 (tons/year)	After Controls (tons/year)	After Controls (lbs/hour)	326 IAC 6-3-1 Limit (lb/hr)	PM10 PSD Minor Limit (lb/hr)	PM10 PSD Minor Limit (tons/year)
Aluminum Powder Sieve - CRN 0155-05-A1	Baghouse - CRN 0155-05A1-BH1	99.00%	400	0.01	4.00	8760	17.52	0.1752	0.04	Limit is 0.551 lbs/hour; process rate less than 100 lbs/hour	3.42	14.9796

Methodology
1) The aluminum powder sieve is equipped with one (1) baghouse to control particulate matter emissions.
2 Particulate matter is assumed to be both PM and PM10.
3) This is a batch operation. The source operates one ten-hour shift per day. The sieve can process eight (8) 25 gallon containers during the ten hour shift.
4) PTE of PM/PM10, ton/yr = (emissions(lb/hr) x (8760 hrs/year) x 1 ton/2000lb)
8) Emission factors were estimated base on data provided by the source.
9) Emissions are based on a 8760 hours/year to reflect worst possible case emissions.

				Pounds per hour limit/PSD Minor Limit
Significant Level	Ton	year		
	15	2000	8760	3.42

Appendix A: Emission Calculations
Conversion of White Phosphorus to Phosphoric Acid
Rotary Kiln, Building 69

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

						Before Controls		After Control	Limited (6-3-2)	
	Capacity (lb/hr)	Capacity (tons/hr)	PM/PM10/PM2.5 *Controlled* Emission Factor (lbs PM/ton)	Nominal Control Efficiency (%)	PM/PM10/PM2.5 *Uncontrolled* Emission Factor (lbs PM/ton)	PTE PM/PM10/PM2.5 (lbs/hr)	PTE PM/PM10/P2.5 (tons/yr)	PTE PM/PM10/P2.5 (tons/yr)	PM Limit (lbs/hr)	PM Limited (tons/year)
Conversion of White Phosphorus to Phosphoric Acid (Building 69)	480	0.24	2.53	97.50%	101.2	24.29	106.38	2.66	1.58	6.92

lb/hr: 0.61

Emission Factors are from AP 42,Chapter 8: Inorganic Chemical Industry, Table 8.9-3: Controlled Emission Factors for Thermal Phosphoric Acid Production (Venturi Scrubber)

Methodology:

PM10/PM2.5 Emission Factor assumed equal to PM Emission Factor

PTE PM/PM10/PM2.5 (lbs/hr) = Capacity (tons/hr) * PM Emission Factor (lbs PM/ton)

PTE PM/PM10/PM2.5 (tons/yr) = Capacity (tons/hr) * PM Emission Factor (lbs PM/ton) * 1 ton / 2000 lbs * 8760 hours / 1 yr

Appendix A: Emission Calculations
Fuel Dispensing Operation

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Fuel Dispensing Operations PTE

> This worksheet documents potential VOC and HAP emissions from storage tanks and vehicle refueling associated with the gasoline and diesel dispensing operations at the Marion Facility.

Storage Tanks Uncontrolled PTE

> Potential VOC and HAP emissions are quantified using EPA's TANKS v4.0.9d program for calculating loading and standing losses from storage tanks.

EUID	Emission Unit Description	Tank Diameter (ft)	Tank Height (ft)	Volume (gal)	Max Annual Throughput (gal/yr)	TANKS v4.0.9d VOC Emissions (lb/yr)	TANKS v4.0.9d VOC Emissions (tpy)	VOC Emissions after control
CRN-3280-01-17-X23	Gasoline Tank	10.5	18.8	11,600	175,000	6,432.09	3.22	3.22E-02
CRN-3280-02-17-X23	Gasoline Tank	10.5	18.8	11,600	175,000	6,432.09	3.22	3.22E-02

Vehicle Refueling Uncontrolled PTE

> Potential VOC emissions from vehicle refueling with gasoline are based on AP-42, Table 5.2-7 emission factors for evaporative emissions from gasoline service station operations.

> Potential VOC emissions from vehicle refueling with diesel are based on the AP-42, Table 5.2-1 saturation factor for calculating petroleum liquid loading losses (splash loading assumed) and the following equation from AP-42, Section 5.2:

Loading Loss (lb/Mgal) = 12.46 * Saturation Factor * True Vapor Pressure at 60°F (psia) * Vapor Molecular Weight (lb/lb-mole) / Bulk Liquid Temperature (°R)

> Diesel true vapor pressure at 60°F and vapor molecular weight per AP-42, Table 7.1-2.

> Bulk liquid temperature of diesel assumed. Temperature in °R calculated based on the following equation:

Bulk Liquid Temperature (°R) = Bulk Liquid Temperature (°F) + 460

> Vapor recovery system for control with 99.9+% removal efficiency = **99.99%**

EUID	Emission Unit Description	Max Annual Throughput (Kgal/yr)	VOC Displacement Losses (lb/Kgal)	VOC Spillage Losses (lb/Kgal)	Annual VOC Emissions (tpy)	After control (tpy)	Basis
F1	Gasoline Dispensing	350	11.00	0.70	2.05	2.05E-04	AP-42, Table 5.2-7, Vehicle Refueling Operations (Stage II)

EUID	Emission Unit Description	Max Annual Throughput (Kgal/yr)	Saturation Factor	True Vapor Pressure at 60°F (psia)	Vapor Molecular Weight (lb/lb-mole)	Bulk Liquid Temperature (°F)	Bulk Liquid Temperature (°R)	Loading Loss (lb/Kgal)	Annual VOC Emissions (tpy)	After Control (tpy)
F2	Diesel Dispensing	350	1.45	0.0065	130	60	520	0.03	5.14E-03	5.14E-07

Appendix A: Emission Calculations
Fuel Dispensing Operation

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Project PTE Summary

> Total VOC and HAP emissions from the project are summarized below.

EUID	Emission Unit Description	Annual VOC Emissions Gasoline (tpy)	Annual VOC Emissions Diesel (tpy)	Annual VOC Emissions Total (tpy)	After Controls
CRN-3280-01-17-X23	Gasoline Tank #1	3.22			
CRN-3280-02-17-X23	Gasoline Tank #2	3.22			
F1	Gasoline Dispensing	2.05			
F2	Diesel Dispensing		5.14E-03		
	Total PTE (tpy):	8.48	5.14E-03	**8.48**	**8.48E-04**

Hazardous Air Pollutants (HAPs)

Volatile Organic HAP	CAS#	HAP Content for Gasoline (% by weight)**	PTE of HAP (tons/yr)	After Controls (tons/yr)	
1,3-Butadiene	106-99-0	3.70E-5%	3.14E-04	3.14E-08	
2,2,4-Trimethylpentane	540-84-1	2.40%	0.20	2.04E-05	
Benzene	71-43-2	1.90%	0.16	1.61E-05	
Ethylbenzene	100-41-4	1.70%	0.14	1.44E-05	
Methyl-tert-butylether	1634-04-4	0.33%	2.80E-02	2.80E-06	
Naphthalene	91-20-3	0.25%	2.12E-02	2.12E-06	
n-Hexane	110-54-3	2.40%	0.20	2.04E-05	
Toluene	108-88-3	8.10%	0.69	6.87E-05	
Total Xylenes	1330-20-7	9.00%	0.76	7.63E-05	
	Total PTE of HAPs (tons/yr)		**2.21**	**2.2E-04**	
	PTE of Worst Single HAP (tons/yr)		**0.76**	**7.6E-05**	**(xylenes)**

**Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: http://www.aehsfoundation.org/Publications.aspx

PTE of HAP (tons/yr) = [HAP Content of Gasoline (% by weight)] * [PTE of VOC (tons/yr)]

Appendix A: Emission Calculations
Flare Manufacturing Processes in Buildings 2504, 145 and 198

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Buildings 2504 and 198		
Maximum Batches for Each Building = 9 batches/week x 52 weeks/yr =	468.00	batches/yr each
VOC PTE = 0.015 tons of VOC/batch x maximum batches/yr	7.02	tons/yr each
Hexane PTE = 0.012 tons of VOC/batch x maximum batches/yr	5.62	tons/yr each
Combined VOC PTE =	**14.04**	**tons/yr**
VOC PTE after controls (99.5%)	**0.07**	
Combined Hexane PTE =	**11.23**	**tons/yr**

Note: VOC and HAP emission factors are from the Part 70 Operating Permit.

Flare Testing in Buildings 2869 and 366

Maximum Throughput = 25 flares/day
Emission Factor = 2.9375 lb PM/flare
Potential Uncontrolled Emissions = 25 flares/day x 365 days/year x 2.9375 lb PM/flare x 1 ton PM/2000 lbs PM = 13.4 tons PM/year 58.692
Controlled Emissions = 13.4 tons PM/year x (1-.995) = 0.07 tons/year 0.3066
Note: Emission Factor is based on the fact that the average flare weighs 5.875 pounds and 50% of the weight is assumed to be emitted as PM.

Appendix A: Emission Calculations
Contained Detonation Chamber (P01)

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

PTE based on a maximum throughput of 750 lbs of NEW (Net explosive weight - TNT equivalent) per hour
Emissions factors based on 5/24/2000 test results from blast chamber at Blue Grass Army Deport (BGAD).*

PTE							
Continuous Operation		**Before Controls**		**After Controls**		**After Controls (Baghouse) and Limit of 1700 TPY of NEW**	
Pollutant	**lb/lb NEW**	**PTE (lb/hr)**	**PTE (tons/yr)**	**PTE (lb/hr)**	**PTE (tons/yr)**	**PTE (lb/hr)**	**PTE (tons/yr)**
PM**	0.30	225.00	985.50	0.23	0.99	0.22	0.51
SO_2	5.00E-05	0.04	0.16	3.75E-05	1.64E-04	0.04	0.09
NOx	8.50E-03	6.38	27.92	6.38E-03	0.03	6.38	14.45
VOC	1.10E-04	0.08	0.36	8.25E-05	3.61E-04	0.08	0.19
CO	0.06	42.60	186.59	42.60	186.59	42.60	96.56

HAPs PTE							
Continuous Operation		**Before Controls**		**After Controls**		**After Controls (Baghouse) and Limit of 1700 TPY of NEW**	
Pollutant	**lb/lb NEW**	**PTE (lb/hr)**	**PTE (tons/yr)**	**PTE (lb/hr)**	**PTE (tons/yr)**	**PTE (lb/hr)**	**PTE (tons/yr)**
Mn***	N/A	0.01	0.05	1.15E-05	5.04E-05	N/A	5.04E-05
Pb*	2.54E-03	1.91	8.34	1.91E-03	8.34E-03	4.44E-03	8.34E-03
Cr*	1.72E-03	1.29	5.65	1.29E-03	5.65E-03	3.01E-03	5.65E-03

METHODOLOGY

* Test results found in Tables 4.c.1 and 4.c.2 in "BGAD Detonation Chamber Data Collection Test Report", August 2000. Results are the average of three tests of the detonation of twenty (20) 105 mm projectiles distributed over one hour for a total of 200 pounds of net explosive weight per test.

** Emissions at BGAD were tested after the baghouse. The estimate of the PTE (before controls) assumes a baghouse efficiency of 99.9% for PM during the BGAD test. The estimate of Limited PTE assumes that the control efficiency is the same for the BGAD test and the NSWC Crane Division baghouse.

***Emission factor based on the "RCRA Air Quality Assessment at the Ammunition Burning Ground" by Tetra Tech, March 2000. Emissions were measured without controls. For emissions after the baghouse, assume a control efficiency of 99.9 for PM (metal HAPs). Since data not available for lb/lb NEW, conservative estimate of PTE after controls used for PTE after controls and limit.

PTE (tons/yr) = Emission Factor (lb/lb NEW) x Maximum Hourly Throughput (lbs NEW/hr) x 8,760 hrs/yr x 1 ton/2,000 lbs

Limited and Controlled PTE (tons/yr) = Emission Factor (lb Emissions/lb NEW) x (Limited Annual Throughput (tons NEW/yr) x 2,000 lbs NEW/ton NEW) x (1 ton Emissions/2,000 lbs Emissions)*(1-Control Efficiency)

Appendix A: Emissions Calculations
SO_2, NOx, CO, VOC, Pb, and HAP Emissions
From the APE 1236 Rotary Kiln Incinerator P03

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Max. Feed Rate lbs/hr	Maximum Feed Throughput tons/yr	tons/yr
240.00	**1,051.20**	**347.00**
Net Explosive Weight (NEW)	Net Explosive Weight (NEW)	Net Explosive Weight (NEW)

1. SO_2, NOx, CO, and Pb Emissions:

	Pollutant			
	SO_2*	NOx*	CO*	Pb**
Emission Factor in lb/lb	4.66E-03	0.12	1.00E-03	1.15E-04
Potential Emissions in tons/yr	4.90	120.89	1.05	0.12
Limited Potential Emissions in tons/yr	1.62	39.91	0.35	0.04

2. VOC and HAP Emissions:

Organic HAPs	Emission Factor (lb/lb)**	Potential Emission After Controls (tons/yr)	Limited Potential Emission After Controls (tons/yr)
Benzene	5.60E-06	5.89E-03	1.94E-03
Bis Phthalate	2.00E-07	2.10E-04	6.94E-05
Carbon Tetrachloride	3.50E-08	3.68E-05	1.21E-05
Chlorobenzene	5.20E-08	5.47E-05	1.80E-05
Chloroform	1.60E-07	1.68E-04	5.55E-05
Dibutylphthalate	1.00E-04	0.11	0.03
2,4, Dinitrotoluene	1.00E-04	0.11	0.03
Hexachlorobenzene	1.00E-04	0.11	0.03
Methylene Chloride	9.50E-08	9.99E-05	3.30E-05
Naphthalene	1.90E-06	2.00E-03	6.59E-04
Phenol	2.70E-06	2.84E-03	9.37E-04
Tetrachloroethylene	1.30E-08	1.37E-05	4.51E-06
Toluene	6.90E-08	7.25E-05	2.39E-05
Trichloroethylene	2.30E-07	2.42E-04	7.98E-05
Total VOC/Organic HAPs =		**0.33**	**0.11**

Methodology
Potential Emissions (tons/yr) = Max. Feed Rate (lbs/hr) x Emission Factor (lb/lb) x 8,760 hrs/yr /2,000 lb/ton
Limited Potential Emissions (tons/yr) = Annual Feed Limit (tons/yr) x Emission Factor (lb/lb)

Notes:

* Emission factors are from the trial burns for the same unit conducted at the McAlester, Oklahoma base by the U.S. Army Center for Health Promotion and Prevention Medicine (USCHPPM) on February 17 to March 14, 1997. These emission factors are the worst case scenarios and emissions from NG combustion process in the associated afterburner are included also. Note that the CO emission factor is after control (afterburner). The CO control efficiency of the afterburner is unknown.

** Emission factor is from "Health Risk Assessment for Military Munitions Treatment Facilities at Sierra Army Depot", Table 2-19- Deactivation Furnaces, 1996. Note that the emission factors are after control (afterburner). The control efficiency of the afterburner is unknown.

1. Process Description:

Primary PM Control Equipment: Baghouse C07
Grain Loading: 8.00E-04 grains/acf
Air Flow Rate: 11,697.00 acfm
Control Efficiency: 0.99

Note: This incinerator is also controlled by a cyclone (C05).

2. Potential to Emit After Control:

Controlled Hourly PM/PM10/PM2.5 Emissions = grain loading (gr/acf) x air flow rate (acfm) x 60 min/hr x 1lb/7,000 grains = 0.08 lbs/hr
Controlled PM/PM10/PM2.5 Emissions = grain loading (gr/acf) x air flow rate (acfm) x 60 min/hr x 1lb/7,000 grains x 8,760 hrs/yr x 1 ton/2,000 lbs = 0.35 tons/yr

Note: All PM emissions are assumed equal to PM-10 emissions.

3. Potential Uncontrolled Emissions:

Potential PM/PM10/PM2.5 Emissions = Controlled PM/PM10/PM2.5 Emissions (tons/yr) / (1 - Control Efficiency) = 35.13 tons/yr

Appendix A: Emission Calculations
Battery Dissection Fume Hood

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

HAP Emission Calculations

CAS Number	HAP	Maximum (unit/hr)	HAP lbs/hr	HAP tons/yr
7647010	Hydrochloric Acid (HCl)	1 battery	0.4405	1.93

Total State Potential Emissions 1.93

METHODOLOGY

HAP emission rate (tons/yr) = Maximum (unit/hr) * HAP lbs/hr * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emission Calculations
mill/classifier (CRN-0126-02-17-W24)

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Unrestricted PTE

	Dry Material Process Rate		Process Loss Factor[(1)]	Before Controls PM/PM_{10}		Control efficiency, pct.	After Controls PM/PM_{10}	
	lbs/hr	tons/yr		lbs/hr	tons/yr		lbs/hr	tons/yr
mill/classifier (CRN-0126-02-17-W24)	100	438	0.1	10.0	43.8	99.99%	0.001	0.004

(1) Process Loss Factor taken from equipment manufacturer

Limited PTE

		PM		PM_{10}	
	Control	lbs/hr[(2)]	tons/yr	lbs/hr[(3)]	tons/yr
mill/classifier (CRN-0126-02-17-W24)	scrubber	0.551	2.4	3.4	14.9

Notes:
(2) PM limit is established based on 326 IAC 6-3-2.
(3) PM_{10} limit is established for PSD Minor Limit.

Appendix A: Emission Calculations
B105 Chemical Conversion Process

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Toluene or VOC emissions (lbs/day)	Days of operation per week	Weeks of operation per year	Toluene Emissions (tons/yr)	VOC Emissions (tons/yr)	Controlled emissions
	7	52	0	0	0

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Heat Input Capacity MMBtu/hr		HHV mmBtu/mmscf	Potential Throughput MMCF/yr
214.50	195 - Furnaces (< 1.1 MMBtu/hr each)***	1,020.00	1,842.18

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.90	7.60	7.60	0.60	100.00 **see below	5.50	84.00
Potential Emission in tons/yr	1.75	7.00	7.00	0.55	92.11	5.07	77.37

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32
***Each Furnace is an insignificant activity. Assumed that each furnace has a heat input capacity of less than 1.1 MMBtu/hr.

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

HAPS Calculations

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.10E-03	1.20E-03	0.08	1.80	3.40E-03	
Potential Emission in tons/yr	1.93E-03	1.11E-03	0.07	1.66	3.13E-03	**1.73**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03	
Potential Emission in tons/yr	4.61E-04	1.01E-03	1.29E-03	3.50E-04	1.93E-03	**5.05E-03**

Total HAPs	**1.74**
Worst HAP	**1.66**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000.00	2.30	2.20
Potential Emission in tons/yr	110,530.59	2.12	2.03
Summed Potential Emissions in tons/yr	110,534.73		
CO2e Total in tons/yr	111,187.42		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Building	Maximum Capacity (hp)	Manufacture (Approved for Installation Date)
(A)	CRN-0002-02-17-U21	2	134.00	1989
(B)	CRN-0004-01-17-U21	4	174.00	1984
(C)	CRN-0010-01-17-U21	10	268.00	2007
(D)	CRN-0069-01-23-KK11	69	536.00	1986
(E)	CRN-0105-01-23-EE13	105	107.00	2005
(F)	CRN-0104-05-23-HH16	104	33.53	2009
(G)	CRN-0150-04-17-CC23	150	308.00	2009
(H)	CRN-0160-03-17-AA24	160	33.50	2009
(J)	CRN-1819-03-17-Y23	1819	268.00	1987
(K)	CRN-1820-15-17-Y23	1820	268.00	1987
(L)	CRN-1894-01-17-W22	1894	17.00	1984
(M)	CRN-2384-01-16-BB13	2384	40.00	1984
(N)	CRN-2540-01-23-H14	2540	201.00	2010
(O)	CRN-2540-02-23-H14	2540	359.00	2015
(P)	CRN-2688-01-21-Y64	2688	67.00	2008
(Q)	CRN-2737-08-12-M41	2737	168.00	2008(2013)
(T)	CRN-2928-01-2-J17	2928	40.00	1972 (2013)
(W)	CRN-3114-01-2-L11	3114	174.00	2000
(X)	CRN-3235-01-17-V26	3235	134.00	1990 (2013)
(Y)	CRN-3287-01-17-X25	3287	201.00	1996
(Z)	CRN-3372-01-23-MM11	3372	27.00	2004
(AA)	CRN-3373-01-17-W25	3373	275.00	2006
(BB)	CRN-3398-01-24-II21	3398	34.00	2,009.00
		Output Horsepower Rating (hp)	3,867.03	
		Maximum Hours Operated per Year	500.00	
		Potential Throughput (hp-hr/yr)	1,933,515.00	

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	2.20E-03	2.20E-03	2.20E-03	2.05E-03	0.03	2.51E-03	6.68E-03
Potential Emission in tons/yr	2.13	2.13	2.13	1.98	29.97	2.43	6.46

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	6.31E-03	2.77E-03	1.93E-03	2.65E-04	7.99E-03	5.19E-03	6.26E-04	1.14E-03

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**0.03**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15	4.63E-05	9.26E-06
Potential Emission in tons/yr	1,111.77	0.04	8.95E-03

Summed Potential Emissions in tons/yr	**1,111.82**
CO2e Total in tons/yr	**1,115.56**

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Building	Maximum Capacity (hp)	Manufacture (Approved for Installation Date)
(A)	CRN-0002-02-17-U21	2	134.00	1989
(B)	CRN-0004-01-17-U21	4	174.00	1984
(C)	CRN-0010-01-17-U21	10	268.00	2007
(D)	CRN-0069-01-23-KK11	69	536.00	1986
(E)	CRN-0105-01-23-EE13	105	107.00	2005
(F)	CRN-0104-05-23-HH16	104	33.53	2009
(G)	CRN-0150-04-17-CC23	150	308.00	2009
(H)	CRN-0160-03-17-AA24	160	33.50	2009
(J)	CRN-1819-03-17-Y23	1819	268.00	1987
(K)	CRN-1820-15-17-Y23	1820	268.00	1987
(L)	CRN-1894-01-17-W22	1894	17.00	1984
(M)	CRN-2384-01-16-BB13	2384	40.00	1984
(N)	CRN-2540-01-23-H14	2540	201.00	2010
(O)	CRN-2688-01-21-Y64	2688	67.00	2008
(P)	CRN-2737-08-12-M41	2737	168.00	2008(2013)
(Q)	CRN-2928-01-2-J17	2928	40.00	1972 (2013)
(T)	CRN-3114-01-2-L11	3114	174.00	2000
(W)	CRN-3235-01-17-V26	3235	134.00	1990 (2013)
(X)	CRN-3287-01-17-X25	3287	201.00	1996
(Y)	CRN-3372-01-23-MM11	3372	27.00	2004
(Z)	CRN-3373-01-17-W25	3373	275.00	2006
(AA)	CRN-3398-01-24-II21	3398	34.00	2,009.00
		Output Horsepower Rating (hp)	3,508.03	
		Maximum Hours Operated per Year	500.00	
		Potential Throughput (hp-hr/yr)	1,754,015.00	

Sulfur Content (S) of Fuel (% by weight) 0.50

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	4.05E-03 *(.00809S)*	0.02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.61	0.35	0.35	3.55	21.05	0.62	4.82

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).
**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	4.76E-03	1.73E-03	1.18E-03	4.84E-04	1.55E-04	4.84E-05	1.30E-03

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**9.66E-03**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.16	6.35E-05	9.30E-06
Potential Emission in tons/yr	1,017.33	0.06	8.16E-03

Summed Potential Emissions in tons/yr	**1,017.39**
CO2e Total in tons/yr	**1,021.15**

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Building	Maximum Capacity (hp)	Manufacture (Approved for Installation Date)
(AA)	CRN-200-02-23-KK13	200	619.00	2014

Output Horsepower Rating (hp)	619.00
Maximum Hours Operated per Year	500.00
Potential Throughput (hp-hr/yr)	309,500.00

Sulfur Content (S) of Fuel (% by weight) 0.50

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	4.05E-03 *(.00809S)*	0.02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.11	0.06	0.06	0.63	3.71	0.11	0.85

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).
**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	**8.41E-04**	3.04E-04	2.09E-04	8.55E-05	2.73E-05	8.54E-06	2.30E-04
						Total HAP	**1.71E-03**

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**1.71E-03**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.16	6.35E-05	9.30E-06
Potential Emission in tons/yr	179.51	9.82E-03	1.44E-03

Summed Potential Emissions in tons/yr	**179.52**
CO2e Total in tons/yr	**180.18**

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	Unit ID	Building	Maximum Capacity (hp)	Manufacture (Approved for Installation Date)
(AA)	CRN-3049-02-23-FF18	3049	1,194.00	2,014.00

Output Horsepower Rating (hp)	1,194.00
Maximum Hours Operated per Year	500.00
Potential Throughput (hp-hr/yr)	597,000.00

Sulfur Content (S) of Fuel (% by weight) 0.50

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	4.05E-03 *(.00809S)*	0.02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.21	0.12	0.12	1.21	7.16	0.21	1.64

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).
**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	**1.62E-03**	5.87E-04	4.03E-04	1.65E-04	5.27E-05	1.65E-05	4.43E-04
						Total HAP	**3.29E-03**

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**3.29E-03**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.16	6.35E-05	9.30E-06
Potential Emission in tons/yr	346.26	0.02	2.78E-03

Summed Potential Emissions in tons/yr	**346.28**
CO2e Total in tons/yr	**347.56**

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Natural Gas
4-Stroke Rich-Burn (4SRB) Engines

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	CRN-0005-01-10-T21	CRN-0010-02-17-U21	CRN-0059-01-8-N6	CRN-0061-01-5-D43		CRN-3318-01-22-LL9	CRN-3320-01-17-R21	CRN-3334-01-17-V26	CRN-3334-02-17-V26	CRN-3461-01-10-K22
Maximum Output Horsepower Rating (hp)	80.46	40.23	10.60	10.60	44.25	33.53	33.53	402.30	402.30	33.52
Brake Specific Fuel Consumption (BSFC) (Btu/hp-hr)	7,600.00	8,700.00	9,000.00	9,000.00	8,700.00	9,000.00	9,000.00	7,600.00	7,600.00	9,000.00
Maximum Hours Operated per Year (hr/yr)	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
Potential Fuel Usage (MMBtu/yr)	305.75	175.00	47.70	47.70	192.49	150.89	150.89	1,528.74	1,528.74	150.84

Sum of Potential Fuel Usage (MMBtu/yr)	**4,278.73**
High Heat Value (MMBtu/MMscf)	1,020.00
Potential Fuel Usage (MMcf/yr)	4.19

	Pollutant						
Criteria Pollutants	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor (lb/MMBtu)	9.50E-03	0.02	0.02	5.88E-04	2.21	0.03	3.72
Potential Emissions (tons/yr)	0.02	0.04	0.04	1.26E-03	4.73	0.06	7.96

*PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 + condensable PM.
PM2.5 emission factor is filterable PM2.5 + condensable PM.

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor (lb/MMBtu)	Potential Emissions (tons/yr)
Acetaldehyde	2.79E-03	5.97E-03
Acrolein	2.63E-03	5.63E-03
Benzene	1.58E-03	3.38E-03
1,3-Butadiene	6.63E-04	1.42E-03
Formaldehyde	0.02	0.04
Methanol	3.06E-03	6.55E-03
Total PAH**	1.41E-04	3.02E-04
Toluene	5.58E-04	1.19E-03
Xylene	1.95E-04	4.17E-04
	Total	**0.07**

HAP pollutants consist of the nine highest HAPs included in AP-42 Table 3.2-3.
**PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

Methodology
Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-3
Potential Fuel Usage (MMBtu/yr) = [Maximum Output Horsepower Rating (hp)] * [Brake Specific Fuel Consumption (Btu/hp-hr)] * [Maximum Hours Operated per Year (hr/yr)] / [1000000 Btu/MMBtu]
Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

	Greenhouse Gas (GHG)		
Greenhouse Gases (GHGs)	CO2	CH4	N2O
Emission Factor in lb/MMBtu*	110.00	1.25	
Emission Factor in lb/MMcf**			2.20
Potential Emission in tons/yr	235.33	2.67	4.61E-03
Summed Potential Emissions in tons/yr	238.01		
CO2e Total in tons/yr	303.56		

Methodology
*The CO2 and CH4 emission factors are from Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
**The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
SO2 = Sulfur Dioxide
NOx = Nitrous Oxides
VOC - Volatile Organic Compounds
CO = Carbon Monoxide
CO2 = Cabon Dioxide
CH4 = Methane
N2O = Nitrous Oxide
CO2e = CO2 equivalent emissions

Appendix A: Emission Calculations
From C-4 Extruder Processing Line

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Emission Unit Description	Maximum Hourly Throughput (units/hr)	Rubber Extruded (lbs/unit)	Maximum Rubber Extruded (lbs/hr)	Maximum Rubber Extruded (lbs/yr)	PM/PM10/PM2.5 Emission Factor (lb/lb rubber extruded)	PM/PM10/PM2.5 Potential to Emit (tons/yr)	VOC Emission Factor (lb/lb rubber extruded)	VOC Potential to Emit (tons/yr)	Total HAPs Emission Factor (lb/lb rubber extruded)	Total HAPs Potential to Emit (tons/yr)	Single HAP (Hexane) Emission Factor (lb/lb rubber extruded)	Single HAP (Hexane) Potential to Emit (tons/yr)
C-4 Extruder Processing Line	2,400.00	1.20	2,880.00	25,228,800.00		0.00E+00	1.60E-04	2.02	7.52E-05	0.95	6.05E-05	0.76
Potential Emissions (tons/yr):						**0.00E+00**		**2.02**		**0.95**		**0.76**

METHODOLOGY

The emission factors are from U.S. EPA, AP-42, 5th Edition, Chapter 4.12, Table 4.12-6 (Extruder).
Potential to Emit (tons/yr) = Maximum Rubber Extruded (lbs/yr) x Emission Factor (lb/lb rubber extruded) x (1 ton/2,000 lbs)

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Propane
4-Stroke Rich-Burn (4SRB) Engines

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

	CRN-0002-01-17-U21	CRN-0016-01-10-R22	CRN-2516-01-17-W22		CRN-3450-01-MW-01	CRN-3452-01-MW-02	CRN-3454-01-MW-03
Maximum Output Horsepower Rating (hp)	181.00	168.00	27.00	27.00	47.00	47.00	47.00
Brake Specific Fuel Consumption (BSFC) (Btu/hp-hr)	7,600.00	8,700.00	9,000.00	9,000.00	8,700.00	8,700.00	8,700.00
Maximum Hours Operated per Year (hr/yr)	500.00	500.00	500.00	500.00	500.00	500.00	500.00
Potential Fuel Usage (MMBtu/yr)	687.80	730.80	121.50	121.50	204.45	204.45	204.45
High Heat Value (MMBtu/MMscf)	1,020.00	1,020.00	1,020.00	1,020.00	1,020.00	1,020.00	1,020.00
Potential Fuel Usage (MMcf/yr)	**0.67**	**0.72**	**0.12**	**0.12**	**0.20**	**0.20**	**0.20**

		Pollutant							Greenhouse Gas (GHG)		
Criteria Pollutants	**Year Installed**	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO	CO2	CH4	N2O**
Emission Factor (lb/MMBtu)		9.50E-03	0.02	0.02	5.88E-04	2.27	0.03	3.51	110.00	0.23	2.20
CRN-0016-01-10-R22	1942	3.47E-03	7.09E-03	7.09E-03	2.15E-04	0.83	0.01	1.28	40.19	0.08	7.88E-04
CRN-2516-01-17-W22	1992	5.77E-04	1.18E-03	1.18E-03	3.57E-05	0.14	1.80E-03	0.21	6.68	0.01	1.31E-04
CRN-2517-04-10-T21	1990	5.77E-04	1.18E-03	1.18E-03	3.57E-05	0.14	1.80E-03	0.21	6.68	0.01	1.31E-04
CRN-0002-01-17-U21	2006	3.27E-03	6.68E-03	6.68E-03	2.02E-04	0.78	0.01	1.21	37.83	0.08	7.42E-04
CRN-3450-01-MW-01	2009	9.71E-04	1.98E-03	1.98E-03	6.01E-05	0.23	3.03E-03	0.36	11.24	0.02	2.20E-04
CRN-3452-01-MW-02	2009	9.71E-04	1.98E-03	1.98E-03	6.01E-05	0.23	3.03E-03	0.36	11.24	0.02	2.20E-04
CRN-3454-01-MW-03	2009	9.71E-04	1.98E-03	1.98E-03	6.01E-05	0.23	3.03E-03	0.36	11.24	0.02	0.22
Potential Emissions (tons/yr)		**6.18E-03**	**0.01**	**0.01**	**3.83E-04**	**1.48**	**0.02**	**2.28**	**71.56**	**0.15**	**0.23**
								Total GHG	**71.94**		

*PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 + condensable PM.
PM2.5 emission factor is filterable PM2.5 + condensable PM.

Methodology
Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-3
Potential Fuel Usage (MMBtu/yr) = [Maximum Output Horsepower Rating (hp)] * [Brake Specific Fuel Consumption (Btu/hp-hr)] * [Maximum Hours Operated per Year (hr/yr)] / [1000000 Btu/MMBtu]
Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Propane
4-Stroke Rich-Burn (4SRB) Engines

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

*The CO2 and CH4 emission factors are from Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
**The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
**For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N20 GWP (310).

Hazardous Air Pollutants (HAPs)

	Year Installed	Acetaldehyde	Acrolein	Ethane	Benzene	1,3-Butadiene	Formaldehyde	Methanol	Total PAH***	Toluene	Xylene	Potential Emissions (tons/yr)
Emission Factor (lb/MMBtu)		2.79E-03	2.63E-03	0.07	1.58E-03	6.63E-04	0.02	3.06E-03	1.41E-04	5.58E-04	1.95E-04	
CRN-0016-01-10-R22	1,942.00	1.02E-03	9.61E-04	0.03	5.77E-04	2.42E-04	7.49E-03	1.12E-03	5.15E-05	2.04E-04	7.13E-05	0.04
CRN-2516-01-17-W22	1,992.00	1.69E-04	1.60E-04	4.28E-03	9.60E-05	4.03E-05	1.25E-03	1.86E-04	8.57E-06	3.39E-05	1.18E-05	6.23E-03
CRN-2517-04-10-T21	1,990.00	1.69E-04	1.60E-04	4.28E-03	9.60E-05	4.03E-05	1.25E-03	1.86E-04	8.57E-06	3.39E-05	1.18E-05	6.23E-03
CRN-0002-01-17-U21	2,006.00	9.59E-04	9.04E-04	0.02	5.43E-04	2.28E-04	7.05E-03	1.05E-03	4.85E-05	1.92E-04	6.71E-05	0.04
CRN-3450-01-MW-01	2,009.00	2.85E-04	2.69E-04	7.20E-03	1.62E-04	6.78E-05	2.10E-03	3.13E-04	1.44E-05	5.70E-05	1.99E-05	0.01
CRN-3452-01-MW-02	2,009.00	2.85E-04	2.69E-04	7.20E-03	1.62E-04	6.78E-05	2.10E-03	3.13E-04	1.44E-05	5.70E-05	1.99E-05	0.01
CRN-3454-01-MW-03	2,009.00	2.85E-04	2.69E-04	7.20E-03	1.62E-04	6.78E-05	2.10E-03	3.13E-04	1.44E-05	5.70E-05	1.99E-05	0.01
Potential Emissions (tons/yr)		**3.17E-03**	**2.99E-03**	**0.08**	**1.80E-03**	**7.54E-04**	**0.02**	**3.48E-03**	**1.60E-04**	**6.35E-04**	**2.22E-04**	**0.12**

HAP pollutants consist of the nine highest HAPs included in AP-42 Table 3.2-3.
***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

Appendix A: Emission Calculations
Aluminum Powder Sieve

Company Name: Naval Surface Warfare Center, Crane Division (NSWC Crane)
Address City IN Zip: 300 Highway 361, Crane Indiana 47522-5001
Permit No. 101-36477-00005
Plt ID: 101-00005
Reviewer: Shanuka Dias Jayasinghe
Date: 11/30/2015

Process Step	Maximum Daily Hours of Operation	PM Emission Factor (lb/hr)	PTE of PM (ton/yr)	PM10 Emission Factor (lb/hr)	PTE of PM10 (ton/yr)	Overall Control Efficiency (%)	PM after Control (ton/yr)	PM10 after Control (ton/yr)	Uncontrolled PM10 (lb/hr)	326 IAC 6-3-2 Limit (lb/hr)	Comply with 326 IAC 6-3-2 without control
Explosives Mixing Steam Kettle - CRN-0160-01-A	24.00	0.75	3.29	0.75	3.29	98%	0.07	0.07	0.75	0.623	No
Explosives Mixing Steam Kettle - CRN-0160-02-B	24.00	0.75	3.29	0.75	3.29	98%	0.07	0.07	0.75	0.623	No
Total for Modification			6.58		6.58		0.14	0.14			

Methodology
1) Both kettles are equipped with a scrubber to control PM emissions. They have a 100% capture efficiency and 98% control efficiency.
2) All particulate matter is assumed to be PM10.
3) This is a batch operation. The source operates two ten-hour shifts per day. Each kettle can process a 1,200 lb batch during this ten hour shift. The source estimates a total of four batches per day is possible, using both kettles.
4) PTE of PM/PM10, ton/yr = (Daily Hours of Operation, hr/day) x (365 day/yr) x (Emission Factor, lb PM or PM10/hr) x (1 ton/200lb)
5) PM/PM10 after control, ton/yr = (PTE of PM/PM10, ton/yr) x (1 - control efficiency)
6) Uncontrolled PM/PM10, lb/hr was provided by the applicant based on emissions testing of a similar process.
7) 326 IAC 6-3-2 limit, lb/hr = 4.10 x (0.06 ton/hr) ^0.67 = 0.623 lb particulate matter per hour (2.73 ton particulate matter per year.)
8) Emission factors are based on emissions testing of a similar process.
9) Emissions are based on a twenty-four hour day to reflect worst possible case emissions.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Administrative Amendment

Source Description and Location

Source Name:	Naval Surface Warfare Center, Crane Division (NSWC Crane)
Source Location:	300 US 361 Crane, Indiana 47522-5001
County:	Martin
SIC Code:	9711 (National Security) 3483 (Ammunition, Except for Small Arms)
Operation Permit No.:	T 101-32904-00005
Operation Permit Issuance Date:	April 16, 2015
Administrative Amendment No.:	T101-36477-00005
Permit Reviewer:	Shanuka Dias Jayasinghe

Existing Approvals

The source was issued Part 70 Operating Permit No. T101-32904-00005 on April 16, 2015. The source has since received the following approvals:

(a) Administrative Amendment No. 101-36219-00005, issued on October 26, 2015.

County Attainment Status

The source is located in Martin County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.[1]
$PM_{2.5}$	Unclassifiable or attainment effective April 5, 2005, for the annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.

[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Martin County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Martin County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
Martin County has been classified as attainment or unclassifiable in Indiana for list the pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Source Status - Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	**Emissions** (ton/yr)
PM	> 250
PM_{10}	> 250
$PM_{2.5}$	> 250
SO_2	> 250
NO_X	> 250
VOC	> 250
CO	> 250
Single HAP	> 10
Total HAPs	> 25

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) These emissions are based upon the TSD App A for Part 70 Operating Permit Renewal No.: 101-32904-00005, issued on April 16, 2015.

(c) This existing source is a major source of HAPs, as defined in 40 CFR 63.2, because HAP emissions are greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Description of Administrative Amendment

The Office of Air Quality (OAQ) has reviewed an administrative amendment application, submitted by Naval Surface Warfare Center, Crane Division (NSWC Crane) on November 10, 2015, relating to the installation of a new diesel-fired emergency generator in building 2540. The following is a list of the proposed emission unit:

(a) One (1) diesel-fired emergency generator, approved in 2015 for construction, identified as CRN-2540-02-23-H14, with a maximum capacity of 359 hp.

Enforcement Issues

There are no pending enforcement actions related to this modification.

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

Permit Level Determination – Part 70 Administrative Amendment to an Existing Source

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency."

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. If the control equipment has been determined to be integral, the table reflects the PTE after consideration of the integral control device.

Increase in PTE Before Controls of the Modification	
Pollutant	**Potential To Emit** (ton/yr)
PM	0.20
PM_{10}	0.20
$PM_{2.5}$	0.20
SO_2	0.18
VOC	0.23
CO	0.60
NO_X	2.78
Single HAPs	<10

Increase in PTE Before Controls of the Modification	
Pollutant	**Potential To Emit** (ton/yr)
Total HAPs	<25

Appendix A of this TSD reflects the unrestricted potential emissions of the modification.

Pursuant to 326 IAC 2-7-11(a)(8)(B), this change to the permit is considered an administrative amendment because the permit is amended to incorporate an insignificant activity as defined in 326 IAC 2-7-1(21) that does not otherwise constitute a modification for purposes of 326 IAC 2-7-10.5 (Source Modifications) or 326 IAC 2-7-12 (Permit Modifications).

Permit Level Determination – PSD

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 Administrative Amendment, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

	Project Emissions (ton/yr)						
Process / Emission Unit	**PM**	**PM_{10}**	**$PM_{2.5}$ ***	**SO_2**	**NO_X**	**VOC**	**CO**
CRN-2540-02-23-H14	0.20	0.20	0.20	0.18	2.78	0.23	0.60
Total for Modification	0.20	0.20	0.20	0.18	2.78	0.23	0.60
Significant Thresholds	25	15	10	40	40	40	100

*$PM_{2.5}$ listed is direct $PM_{2.5}$.

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

This modification to an existing major PSD stationary source is not major because, the emissions increase of each PSD regulated pollutant, excluding GHGs, are less than the PSD significant thresholds. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Federal Rule Applicability Determination

The following federal rules are applicable to the source due to this modification:

NSPS:

(a) The emergency generator, CRN-2540-02-23-H14, is subject to the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60.4200, Subpart IIII), which is incorporated by reference as 326 IAC 12, because it was manufactured after April 1, 2006 and is not a fire pump engine. The specific facilities subject to this rule include the following:

(1) One (1) Emergency Diesel Generator, CRN-2540-02-23-H14, installed in December 2015, with a capacity of 359 hp (horsepower)..

Emergency generator CRN-2540-02-23-H14 is subject to the following portions of Subpart IIII.

(1) 40 CFR 60.4200(a)(2)(i),(c),(d)
(2) 40 CFR Part 60.4206
(3) 40 CFR Part 60.4207 (a), (b), (c), (e)
(4) 40 CFR Part 60.4208
(5) 40 CFR Part 60.4209
(6) 40 CFR Part 60.4211
(7) 40 CFR Part 60.4212
(8) 40 CFR Part 60.4214
(9) 40 CFR Part 60.4218
(10) 40 CFR Part 60.4219

NESHAP:

(b) Naval Surface Warfare Center, Crane Division is subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63.6580, Subpart ZZZZ), which is incorporated by reference as 326 IAC 20-82, because the unit added to the operating permit is a stationary reciprocating internal combustion engine (RICE) located at a major source of HAP emissions. The specific facilities subject to this rule include the following:

(1) One (1) Emergency Diesel Generator, CRN-2540-02-23-H14, to be installed in December 2015, with a capacity of 359 hp (horsepower).

Emergency generator CRN-2540-02-23-H14 is subject to the following portions of Subpart ZZZZ:

(1) 40 CFR 63.6590(a)(2)(ii).
(2) 40 CFR 63.6590(c)(6).

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63 Subpart ZZZZ.

(c) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to new or modified emission units that involve a pollutant-specific emission unit and meet the following criteria:

(1) has a potential to emit before controls equal to or greater than the Part 70 major source threshold for the pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant; and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

CAM is not applicable to this one (1) emergency diesel generator, identified a CRN-2540-02-23-H14, because it is not equipped with any control technologies.

State Rule Applicability Determination

The following state rules are applicable to the source due to the modification:

326 IAC 2-2 (PSD)
PSD applicability is discussed under the Permit Level Determination – PSD section.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The operation of Emergency Generator (CRN-2540-02-23-H14) will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-6 (Emission Reporting)
Since this source is required to have an operating permit under 326 IAC 2-7, Part 70 Permit Program, this source is subject to 326 IAC 2-6 (Emission Reporting). In accordance with the compliance schedule in 326 IAC 2-6-3, an emission statement must be submitted triennially. The first report is due no later than July 1, 2006, and subsequent reports are due every three (3) years thereafter. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 2-7-6(5) (Annual Compliance Cerification)
The U.S. EPA Federal Register 79 FR 54978 notice does not exempt Title V Permittees from the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D), but the submittal of the Title V annual compliance certification to IDEM satisfies the requirement to submit the Title V annual compliance certifications to EPA. IDEM does not intend to revise any permits since the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D) still apply, but Permittees can note on their Title V annual compliance certification that submission to IDEM has satisfied reporting to EPA per Federal Register 79 FR 54978. This only applies to Title V Permittees and Title V compliance certifications.

326 IAC 6-2-1 (Particulate Emission Limitations for Sources of Indirect Heating)
This rule applies to sources of indirect heating. Therefore this rule does not apply to the one (1) emergency diesel generator, identified as CRN-2540-02-23-H14, because it is not a source of indirect heating.

326 IAC 6-3-1 (Particulate Emission Limitations for Manufacturing Processes)
This rule applies to particulate emission from manufacturing processes located anywhere in the state. Therefore this rule does not apply to the one (1) emergency diesel generator, identified as CRN-2540-02-23-H14, because it is not part of a manufacturing process.

326 IAC 6.5-1-1 (Particulate Matter Limitations Except lake County; Applicability)
This source is not subject to 326 IAC 6.5 because it is not located in one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

326 IAC 7-1.1-1 (Applicability)
This rule applies to emissions units with the potential to emit at least twenty-five (25) tons per year of sulfur dioxide. Therefore this rule does not apply to the one (1) emergency diesel generate, identified as CRN-2540-02-23-H14, because it does cannot emit twenty-five (25) or more tons per year of sulfur dioxide.

326 IAC 8-1-6 (New Facilities; general reduction requirements)
This rule applies to facilities located anywhere in the state that were constructed (as of January 1, 1980) and have the potential to emit twenty-five (25) or more tons per year. The one (1) emergency diesel generator, identified as CRN-2540-02-23-H14, is not subject to 326 IAC 8-1-6 because it does not have the potential to emit twenty-five (25) or more tons per year.

326 IAC 8-5-1 (Miscellaneous Operations)
The one (1) emergency diesel generator, identified as CRN-2540-02-23-H14, does not engage in any of the miscellaneous operations specified in 326 IAC 8-5-1. Therefore, the requirements of 326 IAC 8-5-1 are not applicable.

326 IAC 9-1-1 (Carbon Monoxide Emission Limits Applicability)
The rule is applicable to all stationary sources of carbon monoxide for which an emission limit has been established in 326 IAC 9-1-2 (Carbon monoxide emission limits). Since the one (1) emergency generator, identified as CRN-2540-02-23-H14, does not have applicable limits in this section, this rule is not applicable.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

There are no new compliance determination and monitoring requirements applicable to this modification.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. 101-32904-00005. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

IDEM OAQ has made the following changes to the permit as follows.

Modifications to Section A

(a) Condition A.3 was modified to include the new diesel-fired emergency generator, designated CRN-2540-02-23-H14. The "Diesel-fired emergency generators" table was updated to address this change.

The permit has been revised as follows:

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

***

(y) Activities associated with emergencies, including diesel generators not exceeding 1,600 horsepower.

(1) Diesel-fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture Date (Permitted) Date	NSPS	NESHAP
(A)	CRN-0002-02-17-U21	2	134	1989		ZZZZ
(B)	CRN-0004-01-17-U21	4	174	2007	IIII	ZZZZ
(C)	CRN-0010-01-17-U21	10	268	2007	IIII	ZZZZ
(D)	CRN-0069-01-23-KK11	69	536	1986		ZZZZ
(E)	CRN-0105-01-23-EE13	105	107	2005		ZZZZ
(F)	CRN-0104-05-23-HH16	104	33.53	2009	IIII	ZZZZ
(G)	CRN-0150-04-17-CC23	150	308	2009	IIII	ZZZZ
(H)	CRN-0160-03-17-AA24	160	33.5	2009	IIII	ZZZZ
(I)	CRN-0200-02-23-KK13	200	619	2014	IIII	ZZZZ
(J)	CRN-1819-03-17-Y23	1819	268	1987		ZZZZ
(K)	CRN-1820-15-17-Y23	1820	268	1987		ZZZZ
(L)	CRN-1894-01-17-W22	1894	17	1984		ZZZZ
(M)	CRN-2384-01-16-BB13	2384	40	1984		ZZZZ
(N)	CRN-2540-01-23-H14	2540	201	2010	IIII	ZZZZ
(O)	**CRN-2540-02-23-H14**	**2540**	**359**	**2015**	**IIII**	**ZZZZ**
(~~O~~**P**)	CRN-2688-01-21-Y64	2688	67	2008	IIII	ZZZZ
(~~P~~**Q**)	CRN-2737-08-12-M41	2737	168	2008 (2013)	IIII	ZZZZ
(~~Q~~**R**)	CRN-2928-01-2-J17	2928	40	1972 (2013)		
(~~R~~**S**)	CRN-3049-01-23-FF17	3049	671	1993		ZZZZ
(~~S~~**T**)	CRN-3049-02-23-FF18	3049	1194	2014	IIII	ZZZZ
(~~T~~**U**)	CRN-3114-01-2-L11	3114	174	2000		ZZZZ
(~~U~~**V**)	CRN-3173-01-17-W24	3173	1006	1988		ZZZZ
(~~V~~**W**)	CRN-3173-02-17-W24	3173	1006	1998		ZZZZ
(~~W~~**X**)	CRN-3235-01-17-V26	3235	134	1990 (2013)		ZZZZ
(~~X~~**Y**)	CRN-3287-01-17-X25	3287	201	1996		ZZZZ
(~~Y~~**Z**)	CRN-3372-01-23-MM11	3372	27	2004	IIII	ZZZZ
(~~Z~~**AA**)	CRN-3373-01-17-W25	3373	275	2006	IIII	ZZZZ
(~~AA~~ **BB**)	CRN-3398-01-24-II21	3398	34	2009	IIII	ZZZZ

***

Modifications to Section B

(a) Condition B.9, Instructions for the original Section B – Annual Compliance Certification (ACC) have been revised. The emission statement reporting requirements changed. The submission date for the ACC will continue to depend on which county the source is located. IDEM, OAQ has decided to clarify Section B - Certification to be consistent with the rule and to clarify that Section B - Certification only states what a certification must be. Typographical errors have been corrected throughout.

The permit has been revised as follows:

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. ~~All~~**The initial**

certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

* * *

(c) The annual compliance certification report shall include the following:

* * *

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by ~~the~~**a** "responsible official" as defined by 326 IAC 2-7-1(35).

(b) Condition B.10, On October 27, 2010, the Indiana Air Pollution Control Board issued revisions to 326 IAC 2. These revisions resulted in changes to the rule citations listed in the permit. These changes are not changes to the underlining provisions. The change is only to cite of these rules in Section B - Preventative Maintenance Plan. Paragraph (a) was removed because it became redundant after the October 27, 2010 change was made.

The permit has been revised as follows:

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]

~~(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:~~

~~(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;~~

~~(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and~~

~~(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.~~

~~The Permittee shall implement the PMPs.~~

~~(b~~**(a)** If required by specific condition(s) in Section D of this permit ~~where no PMP was previously required~~, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

* * *

The Permittee shall implement the PMPs.

(~~c~~**b**) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(~~d~~)~~(~~**c)** To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

(c) Condition B.17, Typographical errors have been corrected throughout.

The permit has been revised as follows:

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

* * *

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(~~34~~**35**).

* * *

Modifications to Section C

(a) Condition C.4 - Incineration was added

The permit has been revised as follows:

~~C.4 [RESERVED]~~

C.4 Incineration [326 IAC 4-2][326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

(b) Condition C.13, On October 27, 2010, the Indiana Air Pollution Control Board issued revisions to 326 IAC 2. These revisions resulted in changes to the rule citations listed in the permit. These changes are not changes to the underlining provisions. The change is only to cite of these rules in Section C - Risk Management Plan.

The permit has been revised as follows:

C.13 Risk Management Plan [326 IAC 2-7-5(~~12~~**11**)][40 CFR 68]

* * *

(c) Condition C.14, in paragraph (II)(c), the acronym QIP is being spelled out as Quality Improvement Plan because this is the first time it is mentioned in the condition. In paragraphs (II)(f) and (II)(h)(1), the reference to paragraph (II)(a)(2) is being changed to paragraph (II)(c). Referencing paragraph (II)(a)(2) is correct, however IDEM, OAQ believes that referencing paragraph (II)(c) provides clarity. These fixes have no significant effect on the CAM language.

The permit has been revised as follows:

C.14 Response to Excursions or Exceedances [40 CFR 64][326 IAC 3-8][326 IAC 2-7-5][326 IAC 2-7-6]

* * *

(c) Based on the results of a determination made under paragraph (II)(a)(2) of this condition, the EPA or IDEM, OAQ may require the Permittee to develop and implement a ~~QIP.~~**Quality Improvement Plan (QIP).** The Permittee shall develop and implement a QIP if notified to in writing by the EPA or IDEM, OAQ.

* * *

(d) Condition C.18, IDEM OAQ has clarified the permittee's responsibility regarding the first report.

The permit has been revised as follows:

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)][326 IAC 2-1.1-11][326 IAC 2-2] [326 IAC 2-3][40 CFR 64][326 IAC 3-8]

* * *

(d) **The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period.** Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit, “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

* * *

Modifications for the D Sections

(a) The subheading "Compliance Determination Requirements" has been included for the D sections where it applies (excluding sections D.5, D.11, D.14, D.15). After discussions with EPA, OAQ decided to add a rule cite for the Compliance Determination Requirements subsection title in the D Sections. This rule citation was added to satisfy EPA's concerns.

Throughout the D Sections of the permit, "Compliance Determination Requirements" headings have been revised as follows:

Compliance Determination Requirements **[326 IAC 2-7-5(1)]**

Modifications for Section D.7

(a) In order to clarify what emissions units were subject to the existing compliance requirements, language specifing the emission units and/or control devices was added to several conditions.

Throughout the D Sections of the permit, the following revisions have been made:

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.7.4 Particulate Matter (PM) Control [326 IAC 2-7-6(6)]

(a) In order to ensure compliance with Condition D.7.1, the baghouse**s** and wet scrubbers for PM control shall be in operation at all times the aluminum powder sieve and the explosive bomb loading operations, **and the associated insignificant activities,** respectively, are in operation and the Permittee shall operate the control devices in accordance with manufacturer's specifications.

***

Compliance Monitoring Requirements [326 IAC-2-7-5(1)][326 IAC-2-7-6(1)]

D.7.5 Visible Emissions Notations

(a) Visible emission notations of the baghouse ~~and wet scrubber~~ stack exhausts from the **screening and weighing aluminum powder in Building 2714**~~explosive bomb loading~~

shall be performed once per day during normal daylight operation. A trained employee shall record whether emissions are normal or abnormal.

(b) Visible emission notations of the scrubber stack exhausts from the screening and weighing TNT in Building 153 shall be performed once per day during normal daylight operation. A trained employee shall record whether emissions are normal or abnormal.

(c) Visible emission notations of the scrubber stack exhausts from the melting and mixing aluminum powder and TNT in Building 152 shall be performed once per day during normal daylight operation. A trained employee shall record whether emissions are normal or abnormal.

(**d**~~b~~) Visible emission notations of the baghouse stack exhaust (stack CRN 0155-05-A1) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(**e**~~c~~) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(**f**~~d~~) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(**g**~~e~~) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(**h**~~f~~) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.7.6 Scrubber Parametric Monitoring

The Permittee shall monitor and record the pressure drop across the **wet** scrubber**s used in conjunction with screening and weighing TNT in Building 153 and melting and mixing aluminum powder and TNT in Building 152** at least once per day when the associated processes are in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the response steps required by this condition. A pressure drop reading that is outside the above mentioned range(s) is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

***

Modifications for Section D.13

(a) The "Compliace Monitoring Requirement" heading as been corrected

The permit has been revised as follows:

~~Compliance Determination Requirements – CEMS~~

Compliance Monitoring Requirements ~~– CEMS~~**[326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]**

Modifications for Sections E.1 and E.6

(a) The Emissions Unit Description boxes were modified to incorporate the new diesel-fired emergency generator (CRN-2540-02-23-H14).

Section E.1 and E.6 have been revised as follows:

SECTION E.1 NSPS

Emission Unit Description- Insignificant Activities

(~~z~~**y**) Activities associated with emergencies, including diesel generators not exceeding 1,600 horsepower. [326 IAC 2-7-1(21)(J)(xxii)(BB)(bb)]

(1) Diesel-fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture Date (Permitted) Date	NSPS	NESHAP
(A)	CRN-0002-02-17-U21	2	134	1989		ZZZZ
(B)	CRN-0004-01-17-U21	4	174	2007	IIII	ZZZZ
(C)	CRN-0010-01-17-U21	10	268	2007	IIII	ZZZZ
(D)	CRN-0069-01-23-KK11	69	536	1986		ZZZZ
(E)	CRN-0105-01-23-EE13	105	107	2005		ZZZZ
(F)	CRN-0104-05-23-HH16	104	33.53	2009	IIII	ZZZZ
(G)	CRN-0150-04-17-CC23	150	308	2009	IIII	ZZZZ
(H)	CRN-0160-03-17-AA24	160	33.5	2009	IIII	ZZZZ
(I)	CRN-0200-02-23-KK13	200	619	2014	IIII	ZZZZ
(J)	CRN-1819-03-17-Y23	1819	268	1987		ZZZZ
(K)	CRN-1820-15-17-Y23	1820	268	1987		ZZZZ
(L)	CRN-1894-01-17-W22	1894	17	1984		ZZZZ
(M)	CRN-2384-01-16-BB13	2384	40	1984		ZZZZ
(N)	CRN-2540-01-23-H14	2540	201	2010	IIII	ZZZZ
(O)	**CRN-2540-02-23-H14**	**2540**	**359**	**2015**	**IIII**	**ZZZZ**
(~~O~~**P**)	CRN-2688-01-21-Y64	2688	67	2008	IIII	ZZZZ
(~~P~~**Q**)	CRN-2737-08-12-M41	2737	168	2008 (2013)	IIII	ZZZZ
(~~Q~~**R**)	CRN-2928-01-2-J17	2928	40	1972 (2013)		
(~~R~~**S**)	CRN-3049-01-23-FF17	3049	671	1993		ZZZZ
(~~S~~**T**)	CRN-3049-02-23-FF18	3049	1194	2014	IIII	ZZZZ
(~~T~~**U**)	CRN-3114-01-2-L11	3114	174	2000		ZZZZ
(~~U~~**V**)	CRN-3173-01-17-W24	3173	1006	1988		ZZZZ
(~~V~~**W**)	CRN-3173-02-17-W24	3173	1006	1998		ZZZZ
(~~W~~**X**)	CRN-3235-01-17-V26	3235	134	1990 (2013)		ZZZZ
(~~X~~**Y**)	CRN-3287-01-17-X25	3287	201	1996		ZZZZ
(~~Y~~**Z**)	CRN-3372-01-23-MM11	3372	27	2004	IIII	ZZZZ
(~~Z~~**AA**)	CRN-3373-01-17-W25	3373	275	2006	IIII	ZZZZ
(~~AA~~ **BB**)	CRN-3398-01-24-II21	3398	34	2009	IIII	ZZZZ

(2) Diesel-fired emergency pumps:

(A) One (1) diesel-fired emergency sewer lift pump, identified as CRN-2517-03-10-T21, located in Building 2517, with a maximum capacity of 55 hp and manufactured in 2007.

Under NSPS, Subpart IIII, the emergency generator is considered an affected facility.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Unit Description:

Insignificant Units:

(~~z~~**y**) Activities associated with emergencies, including diesel generators not exceeding 1,600 horsepower. [326 IAC 2-7-1(21)(J)(xxii)(BB)(bb)]

(1) Diesel-fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture Date (Permitted) Date	NSPS	NESHAP
(A)	CRN-0002-02-17-U21	2	134	1989		ZZZZ
(B)	CRN-0004-01-17-U21	4	174	2007	IIII	ZZZZ
(C)	CRN-0010-01-17-U21	10	268	2007	IIII	ZZZZ
(D)	CRN-0069-01-23-KK11	69	536	1986		ZZZZ
(E)	CRN-0105-01-23-EE13	105	107	2005		ZZZZ
(F)	CRN-0104-05-23-HH16	104	33.53	2009	IIII	ZZZZ
(G)	CRN-0150-04-17-CC23	150	308	2009	IIII	ZZZZ
(H)	CRN-0160-03-17-AA24	160	33.5	2009	IIII	ZZZZ
(I)	CRN-0200-02-23-KK13	200	619	2014	IIII	ZZZZ
(J)	CRN-1819-03-17-Y23	1819	268	1987		ZZZZ
(K)	CRN-1820-15-17-Y23	1820	268	1987		ZZZZ
(L)	CRN-1894-01-17-W22	1894	17	1984		ZZZZ
(M)	CRN-2384-01-16-BB13	2384	40	1984		ZZZZ
(N)	CRN-2540-01-23-H14	2540	201	2010	IIII	ZZZZ
(O)	**CRN-2540-02-23-H14**	**2540**	**359**	**2015**	**IIII**	**ZZZZ**
(~~O~~**P**)	CRN-2688-01-21-Y64	2688	67	2008	IIII	ZZZZ
(~~P~~**Q**)	CRN-2737-08-12-M41	2737	168	2008 (2013)	IIII	ZZZZ
(~~Q~~**R**)	CRN-2928-01-2-J17	2928	40	1972 (2013)		
(~~R~~**S**)	CRN-3049-01-23-FF17	3049	671	1993		ZZZZ
(~~S~~**T**)	CRN-3049-02-23-FF18	3049	1194	2014	IIII	ZZZZ
(~~T~~**U**)	CRN-3114-01-2-L11	3114	174	2000		ZZZZ
(~~U~~**V**)	CRN-3173-01-17-W24	3173	1006	1988		ZZZZ
(~~V~~**W**)	CRN-3173-02-17-W24	3173	1006	1998		ZZZZ
(~~W~~**X**)	CRN-3235-01-17-V26	3235	134	1990 (2013)		ZZZZ
(~~X~~**Y**)	CRN-3287-01-17-X25	3287	201	1996		ZZZZ
(~~Y~~**Z**)	CRN-3372-01-23-MM11	3372	27	2004	IIII	ZZZZ
(~~Z~~**AA**)	CRN-3373-01-17-W25	3373	275	2006	IIII	ZZZZ
(~~AA~~ **BB**)	CRN-3398-01-24-II21	3398	34	2009	IIII	ZZZZ

(z) Natural gas turbines not exceeding 16,000 hp, including the following:

	Unit ID	Building	Maximum Capacity (hp)	Manufacture (Approved for Installation) Date	NSPS	NESHAP
(1)	CRN-0005-01-10-T21	5	80.64	2013	JJJJ	ZZZZ
(2)	CRN-0010-02-17-U21	10	40.23	2007	JJJJ	ZZZZ
(3)	CRN-0059-01-8-N6	59	10.6	2008	JJJJ	ZZZZ
(4)	CRN-0061-01-5-D43	61	10.6	1976		ZZZZ
(5)	CRN-0300-01-17-X21	300	44.25	1993		ZZZZ
(6)	CRN-3318-01-22-LL9	3318	33.53	1999		ZZZZ
(7)	CRN-3320-01-17-R21	3320	33.53	2009	JJJJ	ZZZZ
(8)	CRN-3334-01-17-V26	3334	402.3	2012	JJJJ	ZZZZ
(9)	CRN-3334-02-17-V26	3334	402.3	2012	JJJJ	ZZZZ
(10)	CRN-3461-01-10-K22	3461	33.52	2009	JJJJ	ZZZZ

(gg) Seven (7) Propane fired emergency generators:

	Unit ID	Building	Maximum Capacity (hp)	Manufactured (Installed) [Permitted]	NSPS	NESHAP
(1)	CRN-0002-01-17-U21	2	181	2006 (2006)		ZZZZ
(2)	CRN-0016-01-10-R22	16	168	1942 (1942)		ZZZZ
(3)	CRN-2516-01-17-W22	2516	27	1992 (1992)		ZZZZ
(4)	CRN-2517-04-10-T21	2517	27	(1990) [2013]		ZZZZ
(5)	CRN-3450-01-MW-01	3450	47	2009 (2009)	JJJJ	ZZZZ
(6)	CRN-3452-01-MW-02	3452	47	2009 (2009)	JJJJ	ZZZZ
(7)	CRN-3454-01-MW-03	3454	47	2009 (2009)	JJJJ	ZZZZ

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Administrative Amendment No. 101-36477-00005**.** The staff recommend to the Commissioner that this Part 70 Administrative Amendment be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Shanuka Dias Jayasinghe at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5372 or toll free at 1-800-451-6027 extension 45372.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Ms. Christine Freeman
SAIC
300 US Highway 361, Building 3260
Crane, Indiana 47522-5001

DATE: December 30, 2015

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Title V – Administrative Amendment
101-36477-00005

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Ms. Andrea Alltop, SAIC
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Mail Code 61-53

IDEM Staff	VBIDDLE 12/30/2015 Crane Div, Naval Surface Warfare Ctr (NSWC Crane) 101-36477-00005 FINAL		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Christine Freeman Crane Div, Naval Surface Warfare Ctr (NSWC Crane) 300 Hwy 361 Bldg 3260 Crane IN 47522-5001 (Source CAATS) VIA CERTIFIED MAIL USPS									
2		Martin County Commissioners PO Box 600 129 S Main Street Courthouse Shoals IN 47581 *(Local Official)*									
3		Martin County Health Department P.O. Box 368 Shoals IN 47581-0368 *(Health Department)*									
4		Crane Town Council P.O. Box 114, 181 Larrimer Street Crane IN 47522 *(Local Official)*									
5		John Blair 800 Adams Ave Evansville IN 47713 *(Affected Party)*									
6		Andrea Alltop SAIC 12064 E WestGate Ct. PO Box 189 Crane IN 47522 *(Consultant)*									
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