INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

To:	Interested Parties
Date:	February 10, 2015
From:	Matthew Stuckey, Chief Permits Branch Office of Air Quality
Source Name:	AAR Aircraft Services, Indianapolis
Permit Level:	Title V - Renewal Administrative Permit
Permit Number:	097 - 33261 - 00559
Source Location:	2825 West Perimeter Road, Indianapolis, Indiana
Type of Action Taken:	Permit Renewal Revisions to permit requirements

Notice of Decision: Approval - Effective Immediately

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.

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 33261.

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

Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

(continues on next page)

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1(b) or IC 13-15-6-1(a) require 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.

For an **initial Title V Operating Permit**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **thirty (30)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(b).

For a **Title V Operating Permit renewal**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **fifteen (15)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(a).

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.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of an initial Title V operating permit, permit renewal, or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impractible to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

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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Administrative Part 70 Operating Permit Renewal
OFFICE OF AIR QUALITY

AAR Aircraft Services, Indianapolis
2825 West Perimeter Road
Indianapolis, Indiana 46241

(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. T097-33261-00559	
Issued by: Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: February 10, 2015 Expiration Date: February 10, 2020

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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, A.3 and A.4 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 aerospace vehicle maintenance center.

Source Address:	2825 West Perimeter Road Indianapolis, IN 46241
General Source Phone Number:	(317) 227-5066
SIC Code:	4581 (Airports, Flying Fields, and Services)
County Location:	Marion County, Decatur and Wayne Townships
Source Location Status:	Nonattainment for SO_2 Attainment for all other criteria pollutants
Source Status:	Part 70 Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Nested Source with fossil fuel fired boilers (or combinations thereof) totaling more than two hundred fifty million (250,000,000) British thermal units per hour heat input, as 1 of 28 Source Categories

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

This collocated airfield, aerospace vehicle maintenance center and central energy plant source consists of five (5) plants:

(a) Plant 1, Indianapolis Airport Authority (097-00156), is located at 2825 West Perimeter Road, Indianapolis, Indiana 46241 and 7800 Col. H. Weir Cook Memorial Drive (and various collocated addresses), Indianapolis, Indiana 46241;

(b) Plant 2, Johnson Melloh Solutions - IMC Central Energy Plant (097-00586), is located at 2745 South Hoffman Road, Suite 504, Indianapolis, Indiana 46241;

(c) Plant 3, AAR Aircraft Services, Indianapolis (097-00559), is located at 2825 West Perimeter Road, Indianapolis, Indiana 46241;

(d) Plant 5, Chautauqua Airlines (097-00668), is located at 2745 South Hoffman Road, Dock 67, Hangar 7A-7B, Indianapolis, IN 46241; and

(e) Plant 6, ASIG Aircraft Services International Group (097-00667), is located at 2050 Hoffman Road, Indianapolis, IN 46241.

IDEM, OAQ has determined that since the five (5) plants are located on contiguous or adjacent properties and are under common control of the same entity, the Indianapolis Airport Authority (IAA), they will be considered one (1) source.

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

This stationary source, located at Plant 3 at 2825 West Perimeter Road, Indianapolis, Indiana 46241 consists of the following emission units and pollution control devices:

(a) Four (4) service hangars with activities relating to the coating of aircraft parts identified as emission unit 013, service hangars 1, 2, 3, and 5 are used for routine and nonroutine maintenance, with paint booths using high volume, low pressure (HVLP) spray application systems. The table below summarizes the startup dates for each hangar:

Hangar	Date Operation Began
Hangar 1	March 27, 1994
Hangar 2	December 13, 1994
Hangar 3	February 15, 1995
Hangar 5	September 1, 1995

[Under 40 CFR 63, Subpart GG, emission unit 013 is considered an existing affected unit.]
[326 IAC 8-1-6]

(b) One (1) surface coating operation, identified as emission unit P-2, for surface coating the exterior of aerospace vehicles. Emission unit P-2 is located in Hangar 5 but is separate from emission unit 013. Emission unit P-2 utilizes high volume, low pressure (HVLP) spray application systems and is equipped with dry filters for particulate overspray control. Emission unit P-2 includes the use of surface coating stripper solvents for depainting operations that do not contain Hazardous Air Pollutants (HAPs). Emission unit P-2 exhausts at twenty (20) roof vents identified as Stack/Vent P-2-1 through Stack Vent P-2-20. The surface coating of the exterior of aerospace vehicles also includes insignificant natural gas fired make-up air heating units with a combined maximum heat input rate of 36.0 million Btu per hour identified as emission unit B-1. Emission unit P-2 and emission unit B-1 were each approved to construct in 2008. [Under 40 CFR 63, Subpart GG, emission unit P-2 is considered an existing affected unit.]

(c) Painting and mixing operations including:

(1) Two (2) paint booths, located in the Composite Shop, identified as emission unit 017, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 017a and 017b, installed in 1995. Under 40 CFR Part 63, Subpart GG, emission unit 017 is considered an affected facility.

(2) Two (2) paint booths, located in the Machine Shop and the Interior Shop (Back Shop), respectively, identified as emission unit 018, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 018a and 018b, installed in 2000 and 2001, respectively. Under 40 CFR Part 63, Subpart GG, emission unit 018 is considered an affected facility.

(d) One (1) ablative coating operation, to be constructed in 2011, with a nominal throughput of three (3) thrust reversers per day, using spray gun and hand application, equipped with dry filters, equipped with one (1) insignificant propane AMU Heat & Cure Oven, with a maximum heat input capacity of 2.5 MMBtu/hr.

A.4 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, located at Plant 3 at 2825 West Perimeter Road, Indianapolis, Indiana 46241 also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

(a) The following degreasing operations that do not individually exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.

(1) Seven (7) parts cleaners. [326 IAC 8-3-2] [326 IAC 8-3-8]

(b) The following grinding and machining operations located in Hangar 1, 2, 3, or 5 and controlled with fabric filters, scrubbers, mist collectors, wet collectors, electrostatic precipitators, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations with uncontrolled potential to emit of less than five (5) pounds of PM_{10} per hour and less than twenty five (25) pounds of PM_{10} per day.

(1) Eight (8) Grit Blast Cabinets. [326 IAC 6.5-1-2(a)]
(2) One (1) Bead Blast Cabinet [326 IAC 6.5-1-2(a)]

(c) The following activities or categories not previously identified which have potential emissions less than significance thresholds listed under 326 IAC 2-7-1(21):

(1) The following emission units located in Hangar 1, 2, 3, or 5 and in the Back Shops with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year:

(A) Touchup Painting Booths. [326 IAC 6.5-1-2(h)]

(2) The following emission units located in Hangar 1, 2, 3, or 5 and in the Back Shops with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year and equipped with a Central Vacuum system baghouse:

(A) Downdraft Benches. [326 IAC 6.5-1-2(a)]
(B) ECB Booth. [326 IAC 6.5-1-2(a)]
(C) Fugitives (Cleaning). [326 IAC 6.5-1-2(a)]
(D) Sanding Benches. [326 IAC 6.5-1-2(a)]

(d) The following equipment located in the Back Shops related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6.5-1-2(a)]

(e) Trimmers located in the Back Shops that do not produce fugitive emissions and that are equipped with a dust collector or trim material recovery device such as a bag filter or cyclone. [326 IAC 6.5-1-2(a)]

(f) The following three emission units located in the Sheet Metal Shop and Composite Shop with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year with emissions directed to a Central Vacuum system baghouse:

(1) Cleaning Room. [326 IAC 6.5-1-2(a)]
(2) Dinol Room. [326 IAC 6.5-1-2(a)]
(3) Fugitives (Cleaning). [326 IAC 6.5-1-2(a)]

(g) The following two emission units located in the Sidewall/Ceiling Shop of the Interior Shop (Back Shop) with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year:

(1) Drawdown Bench for Vacuum mold. [326 IAC 6.5-1-2(a)]
(2) Floorboard Router. [326 IAC 6.5-1-2(a)]

(h) Cleaners and solvents characterized as having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38°C (100°F) or having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20°C (68°F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months. Cleaning operations include hand wiping and spray gun cleaning. These activities are located in Hangar 1, 2, 3, and 5, emission unit P-2 and in the Back Shops. Potential VOC emissions are less than 3 pounds per hour and potential HAP emissions are less than 1 ton per year. [40 CFR 63, Subpart GG][326 IAC 20-15]

A.5 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, T097-33261-00559, 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 or of permits issued pursuant to Title IV of the Clean Air Act and 326 IAC 21 (Acid Deposition Control).

(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. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than April 15 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) 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) 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:

(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.

(c) 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) 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 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

(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 T097-33261-00559 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, except for permits issued pursuant to Title IV of the Clean Air Act and 326 IAC 21 (Acid Deposition Control)

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] [40 CFR 72]

(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) Pursuant to 326 IAC 2-7-11(b) and 326 IAC 2-7-12(a), administrative Part 70 operating permit amendments and permit modifications for purposes of the acid rain portion of a Part 70 permit shall be governed by regulations promulgated under Title IV of the Clean Air Act. [40 CFR 72]

(c) 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).

(d) 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.

(f) This condition does not apply to emission trades of SO_2 or NO_X under 326 IAC 21 or 326 IAC 10-4.

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 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 thirty percent (30%) 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.2 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.3 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.4 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.5 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.6 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.7 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.8 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

(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.9 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.10 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.11 Risk Management Plan [326 IAC 2-7-5(12)] [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.12 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation 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.

C.13 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.14 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(b)(2), starting in 2005 and every three (3) years thereafter, the Permittee shall submit by July 1 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.15 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

(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.16 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

(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.

(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) 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.

Stratospheric Ozone Protection

C.17 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

Emissions Unit Description:

(a) Four (4) service hangars with activities relating to the coating of aircraft parts identified as emission unit 013, service hangars 1, 2, 3, and 5 are used for routine and nonroutine maintenance, with paint booths using high volume, low pressure (HVLP) spray application systems. The table below summarizes the startup dates for each hangar:

Hangar	Date Operation Began
Hangar 1	March 27, 1994
Hangar 2	December 13, 1994
Hangar 3	February 15, 1995
Hangar 5	September 1, 1995

[Under 40 CFR 63, Subpart GG, emission unit 013 is considered an existing affected unit.]
[326 IAC 8-1-6]

(b) One (1) surface coating operation, identified as emission unit P-2, for surface coating the exterior of aerospace vehicles. Emission unit P-2 is located in Hangar 5 but is separate from emission unit 013. Emission unit P-2 utilizes high volume, low pressure (HVLP) spray application systems and is equipped with dry filters for particulate overspray control. Emission unit P-2 includes the use of surface coating stripper solvents for depainting operations that do not contain Hazardous Air Pollutants (HAPs). Emission unit P-2 exhausts at twenty (20) roof vents identified as Stack/Vent P-2-1 through Stack Vent P-2-20. The surface coating of the exterior of aerospace vehicles also includes insignificant natural gas fired make-up air heating units with a combined maximum heat input rate of 36.0 million Btu per hour identified as emission unit B-1. Emission unit P-2 and emission unit B-1 were each approved to construct in 2008. [Under 40 CFR 63, Subpart GG, emission unit P-2 is considered an existing affected unit.]

(c) Painting and mixing operations including:

(1) Two (2) paint booths, located in the Composite Shop, identified as emission unit 017, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 017a and 017b, installed in 1995. Under 40 CFR Part 63, Subpart GG, emission unit 017 is considered an affected facility.

(2) Two (2) paint booths, located in the Machine Shop and the Interior Shop (Back Shop), respectively, identified as emission unit 018, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 018a and 018b, installed in 2000 and 2001, respectively. Under 40 CFR Part 63, Subpart GG, emission unit 018 is considered an affected facility.

(d) One (1) ablative coating operation, to be constructed in 2011, with a nominal throughput of three (3) thrust reversers per day, using spray gun and hand application, equipped with dry filters, equipped with one (1) insignificant propane AMU Heat & Cure Oven, with a maximum heat input capacity of 2.5 MMBtu/hr.

(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.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

Pursuant to CP096-00156-01 Condition 15, issued November 25, 1996, and to the operating procedures outlined in the top down BACT analysis in accordance with 326 IAC 8-1-6, the Permittee shall achieve Best Available Control Technology for coatings used in emission units 013, 017 and 018 as specified below:

(a) The Permittee shall not apply to aerospace components any coating in the following categories with a VOC content in excess of the following limits (except as noted in condition b), expressed as grams of VOC per liter (lbs/gal) of coating as applied, excluding water:

Coating Category	g VOC/liter	lb VOC /gal
Primer – coatings applied directly to the aerospace component for the purpose of corrosion prevention, protection from the environment, functional fluid resistance and adhesion of subsequent coatings.	350	2.9
Adhesive Bonding Primer – coatings applied in a very thin film to aerospace metal for the primary purpose of providing a primer for a subsequent coating of structural adhesive.	850	7.1
Interior Topcoat – coating used in interior habitable spaces of aircraft.	340	2.8
Electric or Radiation Effect Coating – Electrical conductive or insulative coatings and coatings used on radar and antennae enclosures.	800	6.7
Extreme Performance and Interior Topcoat – A topcoat used in interior spaces of the aircraft areas requiring fluid, stain or nicotine barrier.	420	3.5
Fire Insulation Coating – Coatings used to provide a layer of insulation in the event of an aircraft or engine fire	600	5.0
Fuel Tank Coating – Coatings applied to the interior of a fuel tank or fuel wetted area of the aircraft to protect it from corrosion.	720	6.0
High Temperature Coating – A coating that during its normal use must withstand temperatures in excess of 350 degrees Fahrenheit.	720	6.0
Sealant – A coating applied for the purpose of filling voids and providing a barrier against penetration of water, fuel or other fluids or vapors.	600	5.0
Self-priming Topcoat – A coating applied directly to the aerospace component that is not subsequently over coated.	420	3.5

Coating Category	g VOC/liter	lb VOC /gal
Topcoat – Coatings applied over a primer or intermediate coating for the purposes such as appearance, identification or protection.	420	3.5
Pretreatment Wash Primer – A coating which contains a minimum of 0.5% acid by weight for surface etching and is applied directly to a bare metal surface to provide corrosion resistance and adhesion.	420	3.5
Sealant Bonding Primer – A coating applied in a very thin film to an aerospace component for the purposes of providing a primer for subsequent coat of a silicon sealant.	720	6.0
Temporary Protection Coating – A coating applied to an aerospace component to protect it from any mechanical or environmental damage during manufacturing.	250	2.1

(b) The aforementioned coating requirements shall not apply to:

(1) Application of coating to assembled printed circuit boards

(2) Coating of paper, fabrics and films

(3) Applications of adhesives

(4) Use of adhesive bonding primers that have a cure temperature in excess of 325°F

(5) Use of hand held non refillable aerosol cans

(6) Application of coatings by template or hand in order to add designs, letters and/or numbers to the products

(7) Application of a solid film lubricant (anti chafe coating)

(8) Coating of test panels used to evaluate coating performance

(9) Use of low usage coating which are coating with separate formulations that are used in volumes of less than 20 gallons per calendar year, provided that the requirements item (c) below are met and no more than 200 gallons of low usage coatings may be classified as exempt per year.

(c) When using low usage coatings with formulations not covered in Condition D.1.1(a), the Permittee shall annually provide a list in writing to IDEM, OAQ of coatings to be covered under the low usage exemptions stated in (b) above for the following calendar year, the expected volume to be used and the maximum VOC content. The Permittee shall notify OAQ in writing of any additional coatings added to this list during the calendar year.

(d) The Permittee shall maintain a document containing a list of all coatings with coating limitations which may be used during the following year, the coating category, the VOC limit for the coating category, the mix ratio (if applicable), and VOC content of the coating as applied expressed as pounds per gallon of coating less water. This document will be updated periodically and in the interim, memos containing the required information will be issued as needed for new coatings or reformulations of existing coatings.

(e) Compliance with the coating limitations shall be based on methods specified in 326 IAC 8-1-4(a).

(f) The Permittee shall utilize High Volume, Low Pressure (HVLP) and/or touch up guns transfer technology when applying coatings by spray. HVLP shall mean coating equipment which is used to apply coatings by means of a gun that operates between 0.1 and 10 psig air atomizing spray. Touch up guns shall mean small air spray equipment, including air brushes that operate at no greater than 5 cfm air flow and no greater than 50 psig air pressure. These requirements do not apply to aerosol spray paint cans or the following:

(1) The application of coatings to surface areas with limited access due to visual impairment which requires a 360 degree spray gun extension.

(2) The application of waterborne extreme performance interior topcoat coating.

(3) The application of adhesive bonding primers and pretreatment primers.

(4) The application of a textured finish coat. A textured finish coat shall be considered any coating used to produce a non-smooth, patterned surface that is intentionally produced and applied as a final coat by spraying drops of coating over a previously applied base coat.

D.1.2 Volatile Organic Compound (VOC) [326 IAC 8-1-6]

In order to render the requirements of 326 IAC 8-1-6 (New Facilities; VOC Reduction Requirements) not applicable to the surface coating operation (P-2) and the ablative coating operation, the Permittee shall comply with the following:

(a) The VOC input to the surface coating operation (P-2) shall be less than twenty-five (25) tons per twelve (12) consecutive month period, with compliance determined at the end of each month, including thinning and clean up solvents and excluding any VOC in the waste solvent shipped offsite for recycling or disposal. Compliance with this limit shall limit the VOC emissions from the surface coating operation (P-2) to less than twenty-five (25) tons per year and shall render the requirements of 326 IAC 8-1-6 (New Facilities; VOC Reduction Requirements) not applicable to P-2.

(b) The VOC input to the ablative coating operation shall be less than twenty-five (25) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Compliance with this limit shall limit the VOC emissions from the ablative coating operation to less than twenty-five (25) tons per year and shall render the requirements of 326 IAC 8-1-6 (New Facilities; VOC Reduction Requirements) not applicable to the ablative coating operation.

D.1.3 Particulate Matter Limitations Except Lake County [326 IAC 6.5]

Pursuant to 326 IAC 6.5-1-2(h), particulate matter emissions (PM) from emission units 017, 018, P-2, and the ablative coating operation shall be controlled by a dry particulate filter, waterwash, or an equivalent control device and the source shall operate the control device in accordance with manufacturer's specifications.

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

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

Compliance Determination Requirements

D.1.5 Particulate Matter

In order to comply with Condition D.1.3, particulate matter emissions (PM) from emission units 017, 018, P-2, and the ablative coating operation shall be controlled by dry particulate filter, waterwash, or an equivalent control device at all times each emission unit is in operation and the source shall operate the control device in accordance with the manufacturer's specifications.

D.1.6 Volatile Organic Compounds (VOCs) [326 IAC 8-1-4]

(a) Compliance with the VOC content and input limitations contained in Condition D.1.1(a) and D.1.2 shall be determined 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.

(b) If the amount of VOC in the waste shipped offsite for recycling or disposal is deducted from the monthly VOC input reported, the Permittee shall determine the VOC content of the waste shipped offsite using one or a combination of the following methods:

(1) On-site sampling

(A) VOC content shall be determined pursuant to 326 IAC 8-1-4(a)(3) by EPA Reference Method 24 and the sampling procedures in 326 IAC 8-1-4 or other methods as approved by the Commissioner.

(B) A representative sample of the VOC containing waste to be shipped offsite shall be collected and analyzed whenever a change or changes occur(s) that could result in a cumulative 10% or more decrease in the VOC content of the VOC containing waste. Such change could include, but is not limited to, the following:

(i) A change in coating selection or formulation, as supplied or as applied, or a change in solvent selection or formulation, or

(ii) An operational change in the coating application or cleanup operations.

If multiple cleanup solvent waste streams are collected and drummed separately, a sample shall be collected and analyzed from each solvent waste stream.

The new VOC content shall be used in calculating the amount of VOC shipped offsite, starting with the date that the change occurred. The sample shall be collected and analyzed within 30 days of the change.

(2) Certified Waste Report: The VOC reported by analysis of an off-site waste processor may be used, provided the report certifies the amount of VOC in the waste.

(3) Minimum assumed VOC content: The VOC content of the waste shipped off site may be assumed to be equal to the VOC content of the material with the lowest VOC content that could be present in the waste, as determined using the "as supplied" and “as-applied” VOC data sheets, for each month.

(c) IDEM reserves the right to request a representative sample of the VOC-containing waste stream and conduct an analysis for VOC content.

(d) Compliance with the VOC input limitations contained in Condition D.1.2 shall be demonstrated within 30 days of the end of each month. This shall be based on the total volatile organic compound input for the previous month, minus the amount VOC in the waste shipped out for recycling or disposal, and adding it to previous 11 months total VOC input, minus the amount VOC in the waste shipped out for recycling or disposal, so as to arrive at VOC input for the most recent twelve (12) consecutive month period.

(e) The VOC input for a month shall be calculated using the following equation:

VOC input = SCL - SR

Where:

SCL = the total amount of VOC, in tons, delivered to the coating applicators, including coatings, dilution solvents, and cleaning solvents, at the coating booths; and

SR = The total amount of VOC, in tons, shipped out for either recycling or disposal, including coatings, dilution solvents, and cleaning solvents, from the coating booths.

(f) Compliance with the VOC content and usage limitations contained for emission unit 017 and emission unit 018 shall be determined pursuant to 326 IAC 8-1-4(a)(3)(A) using formulation data supplied by the coating manufacturer. However, IDEM, OAQ, reserves the right to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

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

D.1.7 Monitoring

(a) Inspections shall be performed once per shift to verify the placement, integrity and particle loading of the filters used in emission units 017, 018, P-2, and the ablative coating operation. If a condition exists which should result in a response step, the Permittee shall take a reasonable response. Section C – Response to Excursions or Exceedances contains the Permittee’s obligation with regard to the reasonable response required by this condition. Failure to take a reasonable response shall be considered a deviation from this permit.

(b) Monthly inspections shall be performed on the spray coating emissions from emission units 017, 018, P-2, and the ablative coating operation. To monitor the performance of the dry filters, monthly observations shall be made of the overspray from the spray coating operation. When there is a noticeable change in overspray emissions, or when evidence of overspray emissions is observed the Permittee shall take a reasonable response. Section C – Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. Failure to take a reasonable response shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [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.1.1, the Permittee shall maintain documentation for all coatings containing the name of the coating, VOC content as received and applied, the mix ratio (if applicable), and the VOC content of the coating as applied expressed as pounds per gallon of coating less water. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent input records shall differentiate between those added to coatings and those used as cleanup solvents. The documentation will be updated periodically and in the interim, memos containing the required information will be issued as needed for new coatings or reformulations of existing coatings.

(b) To document the compliance status with Conditions D.1.2 and D.1.6, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC input limits established in Condition D.1.2, and to document the quantity of any VOC shipped offsite and deducted from total reported VOC input. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

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

(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 solvents.

(3) If the amount of VOC in waste material is being deducted from the VOC input as allowed in Condition D.1.6(b), then the following records shall be maintained:

(A) The amount of VOC containing waste shipped out to be recycled or disposed each month. If multiple cleanup solvent waste streams are collected and drummed separately, the amount shipped out shall be recorded separately for each used solvent stream.

(B) The VOC content of the waste and all records necessary to verify the amount and VOC content of the VOC containing waste shipped out for recycling or disposal; and

(C) The weight of VOC input, minus the weight of VOC shipped out to be recycled or disposed, for each month and each compliance period.

(4) The total VOC input for each month and each compliance period.

(c) To document the compliance status with Condition D.1.7(a), the Permittee shall maintain once per shift records of the placement, integrity, and particle loading of the filter controlling emissions from emission units 017, 018, P-2, and the ablative coating operation. The Permittee shall include in its once per shift record when a filter check is not performed and the reason for a filter check not being performed. (e.g., the process did not operate that day).

(d) To document the compliance status with Condition D.1.7(b), the Permittee shall maintain monthly records of the spray coating emissions from emission units 017, 018, P-2, and the ablative coating operation. The Permittee shall include in its monthly record when a spray coating emission observation is not performed and the reason for the lack of an overspray observation. (e.g., the process did not operate that day).

(e) To document the compliance status with Condition D.1.7(b), the Permittee shall maintain monthly records of overspray at the exhaust and nearby ground from emission units 017, 018, P-2, and the ablative coating operation. The Permittee shall include in its monthly record when an overspray inspection is not performed and the reason for an overspray inspection not being performed. (e.g., the process did not operate that day).

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

D.1.9 Reporting Requirements

(a) When using low usage coatings with formulations not covered in Condition D.1.1(a), an annual written report to document compliance with Condition D.1.1(c) shall be submitted to OAQ including:

(1) coatings to be covered under the low usage exemptions D.1.1(b)(9) for the following calendar year,

(2) the expected volume to be used and the maximum VOC content.

(3) The Permittee shall notify OAQ in writing of any additional coatings added to this list during the calendar year.

(b) Quarterly summaries of the information to document the compliance status with Conditions D.1.2(a) and (b) shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C – General Record Keeping Requirements contains the Permittee’s obligation with regard to the reporting required by this condition. The reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a Responsible Official as defined in 326 IAC 2-7-1(35).

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) The following degreasing operations that do not individually exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.

(1) Seven (7) parts cleaners. [326 IAC 8-3-2] [326 IAC 8-3-8]

(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.2.1 Volatile Organic Compounds (VOCs) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the owner or operator shall:

(a) Equip the degreaser with a cover;

(b) Equip the degreaser with a device for draining cleaned parts;

(c) Close the degreaser cover whenever parts are not being handled in the degreaser;

(d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) Provide a permanent, conspicuous label summarizing the operation requirements; and

(f) Store waste solvent only in covered containers and not dispose or transfer waste solvent in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) could evaporate into the atmosphere.

D.2.2 Material Requirements for Cold Cleaner Degreasers [326 IAC 8-3-8]

Pursuant to 326 IAC 8-3-8, on and after January 1, 2015, material requirements for cold cleaner degreasers are as follows:

(a) The Permittee shall not cause or allow the sale of solvents for use in cold cleaner degreasing operations with a VOC composite partial vapor pressure, when diluted at the manufacturer's recommended blend and dilution, 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) in an amount greater than five (5) gallons during any seven (7) consecutive days to an individual or business.

(b) The Permittee shall not operate the cold cleaner degreasers 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).

(c) The Permittee shall maintain the following records for each purchase:

(1) The name and address of the solvent supplier

(2) The date of purchase (or invoice/bill date of contract servicer indicating service date;

(3) The type of solvent purchased;

(4) The total volume of solvent purchased;

(5) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Insignificant Activities:

(b) The following grinding and machining operations located in Hangar 1, 2, 3, or 5 and controlled with fabric filters, scrubbers, mist collectors, wet collectors, electrostatic precipitators, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations with uncontrolled potential to emit of less than five (5) pounds of PM10 per hour and less than twenty five (25) pounds of PM10 per day.

(1) Eight (8) Grit Blast Cabinets. [326 IAC 6.5-1-2(a)]
(2) One (1) Bead Blast Cabinet [326 IAC 6.5-1-2(a)]

(c) The following activities or categories not previously identified which have potential emissions less than significance thresholds listed under 326 IAC 2-7-1(21):

(1) The following emission units located in Hangar 1, 2, 3, or 5 and in the Back Shops with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year:

(A) Touchup Painting Booths. [326 IAC 6.5-1-2(h)]

(2) The following emission units located in Hangar 1, 2, 3, or 5 and in the Back Shops with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year and equipped with a Central Vacuum system baghouse:

(A) Downdraft Benches. [326 IAC 6.5-1-2(a)]
(B) ECB Booth. [326 IAC 6.5-1-2(a)]
(C) Fugitives (Cleaning). [326 IAC 6.5-1-2(a)]
(D) Sanding Benches. [326 IAC 6.5-1-2(a)]

(d) The following equipment located in the Back Shops related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6.5-1-2(a)]

(e) Trimmers located in the Back Shops that do not produce fugitive emissions and that are equipped with a dust collector or trim material recovery device such as a bag filter or cyclone. [326 IAC 6.5-1-2(a)]

(f) The following three emission units located in the Sheet Metal Shop and Composite Shop with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year with emissions directed to a Central Vacuum system baghouse:

(1) Cleaning Room. [326 IAC 6.5-1-2(a)]
(2) Dinol Room. [326 IAC 6.5-1-2(a)]
(3) Fugitives (Cleaning). [326 IAC 6.5-1-2(a)]

(g) The following two emission units located in the Sidewall/Ceiling Shop of the Interior Shop (Back Shop) with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year:

(1) Drawdown Bench for Vacuum mold. [326 IAC 6.5-1-2(a)]
(2) Floorboard Router. [326 IAC 6.5-1-2(a)]

(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.3.1 Particulate Matter Emissions Except Lake County [326 IAC 6.5]

(a) Pursuant to 326 IAC 6.5-1-2(a), particulate matter (PM) emissions from the following processes shall not exceed 0.03 grain per dry standard cubic foot:

(1) Eight (8) Grit Blast Cabinets. [326 IAC 6.5-1-2(a)]
(2) Downdraft Benches. [326 IAC 6.5-1-2(a)]
(3) ECB Booth. [326 IAC 6.5-1-2(a)]
(4) Fugitives (Cleaning). [326 IAC 6.5-1-2(a)]
(5) Sanding Benches. [326 IAC 6.5-1-2(a)]
(6) The following equipment located in the Back Shops related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6.5-1-2(a)]
(7) Trimmers located in the Back Shops that do not produce fugitive emissions and that are equipped with a dust collector or trim material recovery device such as a bag filter or cyclone. [326 IAC 6.5-1-2(a)]
(8) Cleaning Room. [326 IAC 6.5-1-2(a)]
(9) Dinol Room. [326 IAC 6.5-1-2(a)]
(10) Fugitives (Cleaning). [326 IAC 6.5-1-2(a)]
(11) Drawdown Bench for Vacuum mold. [326 IAC 6.5-1-2(a)]
(12) Floorboard Router. [326 IAC 6.5-1-2(a)]
(13) One (1) Bead Blast Cabinet [326 IAC 6.5-1-2(a)]

(b) Pursuant to 326 IAC 6.5-1-2(h), particulate matter emissions (PM) from the touchup painting booths located in Hangar 1, 2, 3, or 5 and in the Back Shops shall be controlled by dry particulate filters, waterwashes, or an equivalent control device(s) and the source shall operate the control device(s) in accordance with the manufacturer's specifications.

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

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

Compliance Determination Requirements

D.3.3 Particulate Matter

In order to comply with Condition D.3.1(b), particulate matter emissions (PM) from the touchup painting booths located in Hangar 1, 2, 3, or 5 and in the Back Shops shall be controlled by dry particulate filters, waterwashes, or an equivalent control device(s) at all times each emission unit is in operation and the source shall operate the control device(s) in accordance with the manufacturer's specifications.

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

D.3.4 Monitoring

(a) Inspections shall be performed once per shift to verify the placement, integrity and particle loading of the filters used in the the touchup painting booths located in Hangar 1, 2, 3, or 5 and in the Back Shops. To monitor the performance of the dry filters, monthly observations shall be made of the overspray from the spray coating operation while the emission unit is in operation. If a condition exists which should result in a response step, the Permittee shall take a reasonable response. Section C – Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. Failure to take a reasonable response shall be considered a deviation from this permit.

(b) Monthly inspections shall be performed on the spray coating emissions from the touchup painting booths located in Hangar 1, 2, 3, or 5 and in the Back Shops and the presence of overspray on the surrounding area 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 a reasonable response. Section C – Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. Failure to take a reasonable response shall be considered a deviation from this permit.

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

D.3.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.4(a), the Permittee shall maintain once per shift records of the placement, integrity, and particle loading of the filter controlling emissions from the touchup painting booths located in Hangar 1, 2, 3, or 5 and in the Back Shops. The Permittee shall include in its once per shift record when a filter check is not performed and the reason for a filter check not being performed. (e.g., the process did not operate that day).

(b) To document the compliance status with Condition D.3.4(a), the Permittee shall maintain monthly records of overspray observations from the touchup painting booths located in Hangar 1, 2, 3, or 5 and in the Back Shops. The Permittee shall include in its monthly record when an observation is not performed and the reason for the lack of an observation. (e.g., the process did not operate that day).

(c) To document the compliance status with Condition D.3.4(b), the Permittee shall maintain monthly records of overspray at the exhaust and nearby ground from the touchup painting booths located in Hangar 1, 2, 3, or 5 and in the Back Shops. The Permittee shall include in its monthly record when an overspray inspection is not performed and the reason for an overspray inspection not being performed. (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.

SECTION E.1 FACILITY OPERATION CONDITIONS

Emissions Unit Description:

(a) Four (4) service hangars with activities relating to the coating of aircraft parts identified as emission unit 013, service hangars 1, 2, 3, and 5 are used for routine and nonroutine maintenance, with paint booths using high volume, low pressure (HVLP) spray application systems. The table below summarizes the startup dates for each hangar:

Hangar	Date Operation Began
Hangar 1	March 27, 1994
Hangar 2	December 13, 1994
Hangar 3	February 15, 1995
Hangar 5	September 1, 1995

[Under 40 CFR 63, Subpart GG, emission unit 013 is considered an existing affected unit.]
[326 IAC 8-1-6]

(b) One (1) surface coating operation, identified as emission unit P-2, for surface coating the exterior of aerospace vehicles. Emission unit P-2 is located in Hangar 5 but is separate from emission unit 013. Emission unit P-2 utilizes high volume, low pressure (HVLP) spray application systems and is equipped with dry filters for particulate overspray control. Emission unit P-2 includes the use of surface coating stripper solvents for depainting operations that do not contain Hazardous Air Pollutants (HAPs). Emission unit P-2 exhausts at twenty (20) roof vents identified as Stack/Vent P-2-1 through Stack Vent P-2-20. The surface coating of the exterior of aerospace vehicles also includes insignificant natural gas fired make-up air heating units with a combined maximum heat input rate of 36.0 million Btu per hour identified as emission unit B-1. Emission unit P-2 and emission unit B-1 were each approved to construct in 2008. [Under 40 CFR 63, Subpart GG, emission unit P-2 is considered an existing affected unit.]

(c) Painting and mixing operations including:

(1) Two (2) paint booths, located in the Composite Shop, identified as emission unit 017, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 017a and 017b, installed in 1995. Under 40 CFR Part 63, Subpart GG, emission unit 017 is considered an affected facility.

(2) Two (2) paint booths, located in the Machine Shop and the Interior Shop (Back Shop), respectively, identified as emission unit 018, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 018a and 018b, installed in 2000 and 2001, respectively. Under 40 CFR Part 63, Subpart GG, emission unit 018 is considered an affected facility.

Insignificant Activities

(h) Cleaners and solvents characterized as having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38°C (100°F) or having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20°C (68°F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months. Cleaning operations include hand wiping and spray gun cleaning. These activities are located in Hangar 1, 2, 3, and 5, emission unit P-2 and in the Back Shops. Potential VOC emissions are less than 3 pounds per hour and potential HAP emissions are less than 1 ton per year. [40 CFR 63, Subpart GG][326 IAC 20-15]

(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)

E.1.1 General Provisions Relating to NESHAP [326 IAC 20-1][40 CFR 63, Subpart A]

Pursuant to 40 CFR 63.743, the Permittee shall comply with the provisions of 40 CFR 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, as specified in Table 1 of 40 CFR 63, Subpart GG in accordance with the schedule in 40 CFR 63, Subpart GG.

E.1.2 National Emissions Standards for Hazardous Air Pollutants for Aerospace Manufacturing and Rework Facilities [40 CFR 63, Subpart GG][326 IAC 20-15]

The Permittee which engages in the rework of commercial, civil or military aerospace vehicles or components at a major source shall comply with the following provisions of 40 CFR 63, Subpart GG (included as Attachment A to this permit), which is incorporated by reference as 326 IAC 20-15, for the emission units listed in Section E.1:

(1) 40 CFR 63.741;
(2) 40 CFR 63.742;
(3) 40 CFR 63.743(a), and (d);
(4) 40 CFR 63.744;
(5) 40 CFR 63.745(a), (b), (c), (e), (f), (g)(1), and (g)(2)(i)(A);
(6) 40 CFR 63.745(g)(3), and (g)(4);
(7) 40 CFR 63.746(a), (b)(1) to (b)(3), (b)(4)(i), and (b)(4)(ii)(A);
(8) 40 CFR 63.748;
(9) 40 CFR 63.749(a), (b), (c), (d)(1), (d)(2), (d)(3)(i); (d)(3)(iii), and (d)(3)(iv);
(10) 40 CFR 63.749(d)(4)(i), (d)(4)(iii), and (d)(4)(iv);
(11) 40 CFR 63.749(e), (f)(1), (f)(3)(ii), (g), (h)(1), (h)(3)(i), and (i);
(12) 40 CFR 63.750(a) to (f), (i) to (o);
(13) 40 CFR 63.751(d) and (f);
(14) 40 CFR 63.752(a) to (e)(1), and (e)(4) to (e)(7);
(15) 40 CFR 63.753(a), (b), (c)(1)(i), (c)(1)(ii), (c)(1)(vi), (c)(1)(vii), (c)(2);
(16) 40 CFR 63.753(d)(1), and (d)(2);
(17) 40 CFR 63.759;
(18) Table 1; and
(19) Appendix A to Subpart GG of Part 63 – Specialty Coating Definitions.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: AAR Aircraft Services, Indianapolis
Source Address: 2825 West Perimeter Road, Indianapolis, Indiana 46241
Part 70 Permit No.: T097-33261-00559

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: AAR Aircraft Services, Indianapolis
Source Address: 2825 West Perimeter Road, Indianapolis, Indiana 46241
Part 70 Permit No.: T097-33261-00559

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), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working 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
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 – P-2

Source Name: AAR Aircraft Services, Indianapolis
Source Address: 2825 West Perimeter Road, Indianapolis, Indiana 46241
Part 70 Permit No.: T097-33261-00559
Facility: Surface Coating Operation, identified as P-2
Parameter: VOC Input
Limit: VOC input to P-2 shall be less than twenty-five (25) tons per twelve (12) consecutive month period with compliance determined at the end of each period.

The amount of VOC in waste shipped offsite for recycling or disposal may be deducted from the monthly VOC input as specified in Condition D.1.6,

QUARTER:_____ YEAR:_____

Month	Column 1	Column 2	Column 1 + Column 2
	VOC Input This Month (tons)	VOC Input Previous 11 Months (tons)	VOC Input for Twelve Consecutive Month Period (tons)

☐ No deviation occurred in this quarter.
☐ Deviation/s 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 – Ablative Coating Operation

Source Name: AAR Aircraft Services, Indianapolis
Source Address: 2825 West Perimeter Road, Indianapolis, Indiana 46241
Part 70 Permit No.: T097-33261-00559
Facility: Ablative Coating Operation
Parameter: VOC Input
Limit: VOC input to ablative coating operation shall be less than twenty-five (25) tons per twelve (12) consecutive month period with compliance determined at the end of each period.

The amount of VOC in waste shipped offsite for recycling or disposal may be deducted from the monthly VOC input as specified in Condition D.1.6,

QUARTER:_____ YEAR:_____

Month	Column 1	Column 2	Column 1 + Column 2
	VOC Input This Month (tons)	VOC Input Previous 11 Months (tons)	VOC Input for Twelve Consecutive Month Period (tons)

☐ No deviation occurred in this quarter.
☐ Deviation/s 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: AAR Aircraft Services, Indianapolis
Source Address: 2825 West Perimeter Road, Indianapolis, Indiana 46241
Part 70 Permit No.: T097-33261-00559

Months: _____ to _____ Year: _____

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. 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:	

Page 2 of 2

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: _____

Attachment A

Administrative Part 70 Operating Permit No: T 097-33261-00559

[Downloaded from the eCFR on July 15, 2013]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart GG—National Emission Standards for Aerospace Manufacturing and Rework Facilities

Source: 60 FR 45956, Sept. 1, 1996, unless otherwise noted.

§ 63.741 Applicability and designation of affected sources.

(a) This subpart applies to facilities that are engaged, either in part or in whole, in the manufacture or rework of commercial, civil, or military aerospace vehicles or components and that are major sources as defined in § 63.2.

(b) The owner or operator of an affected source shall comply with the requirements of this subpart and of subpart A of this part, except as specified in § 63.743(a) and Table 1 of this subpart.

(c) *Affected sources.* The affected sources to which the provisions of this subpart apply are specified in paragraphs (c)(1) through (7) of this section. The activities subject to this subpart are limited to the manufacture or rework of aerospace vehicles or components as defined in this subpart. Where a dispute arises relating to the applicability of this subpart to a specific activity, the owner or operator shall demonstrate whether or not the activity is regulated under this subpart.

(1) Each cleaning operation as follows:

(i) All hand-wipe cleaning operations constitute an affected source.

(ii) Each spray gun cleaning operation constitutes an affected source.

(iii) All flush cleaning operations constitute an affected source.

(2) For organic HAP or VOC emissions, each primer application operation, which is the total of all primer applications at the facility.

(3) For organic HAP or VOC emissions, each topcoat application operation, which is the total of all topcoat applications at the facility.

(4) For organic HAP or VOC emissions, each depainting operation, which is the total of all depainting at the facility.

(5) Each chemical milling maskant application operation, which is the total of all chemical milling maskant applications at the facility.

(6) Each waste storage and handling operation, which is the total of all waste handling and storage at the facility.

(7) For inorganic HAP emissions, each spray booth or hangar that contains a primer or topcoat application operation subject to § 63.745(g) or a depainting operation subject to § 63.746(b)(4).

(d) An owner or operator of an affected source subject to this subpart shall obtain an operating permit from the permitting authority in the State in which the source is located. The owner or operator shall apply for and obtain such permit in accordance with the regulations contained in part 70 of this chapter and in applicable State regulations.

(e) All wastes that are determined to be hazardous wastes under the Resource Conservation and Recovery Act of 1976 (PL 94-580) (RCRA) as implemented by 40 CFR parts 260 and 261, and that are subject to RCRA requirements as implemented in 40 CFR parts 262 through 268, are exempt from the requirements of this subpart.

(f) This subpart does not contain control requirements for use of specialty coatings, adhesives, adhesive bonding primers, or sealants at aerospace facilities. It also does not regulate research and development, quality control, and laboratory testing activities, chemical milling, metal finishing, electrodeposition (except for electrodeposition of paints), composites processing (except for cleaning and coating of composite parts or components that become part of an aerospace vehicle or component as well as composite tooling that comes in contact with such composite parts or components prior to cure), electronic parts and assemblies (except for cleaning and topcoating of completed assemblies), manufacture of aircraft transparencies, and wastewater operations at aerospace facilities. These requirements do not apply to the rework of aircraft or aircraft components if the holder of the Federal Aviation Administration (FAA) design approval, or the holder's licensee, is not actively manufacturing the aircraft or aircraft components. These requirements also do not apply to parts and assemblies not critical to the vehicle's structural integrity or flight performance. The requirements of this subpart also do not apply to primers, topcoats, chemical milling maskants, strippers, and cleaning solvents containing HAP and VOC at concentrations less than 0.1 percent for carcinogens or 1.0 percent for noncarcinogens, as determined from manufacturer's representations. Additional specific exemptions from regulatory coverage are set forth in paragraphs (e), (g), (h), (i) and (j) of this section and §§ 63.742, 63.744(a)(1), (b), (e), 63.745(a), (f)(3), (g)(4), 63.746(a), (b)(5), 63.747(c)(3), and 63.749(d).

(g) The requirements for primers, topcoats, and chemical milling maskants in § 63.745 and § 63.747 do not apply to the use of low-volume coatings in these categories for which the annual total of each separate formulation used at a facility does not exceed 189 l (50 gal), and the combined annual total of all such primers, topcoats, and chemical milling maskants used at a facility does not exceed 757 l (200 gal). Primers and topcoats exempted under paragraph (f) of this section and under § 63.745(f)(3) and (g)(4) are not included in the 50 and 200 gal limits. Chemical milling maskants exempted under § 63.747(c)(3) are also not included in these limits.

(h) Regulated activities associated with space vehicles designed to travel beyond the limit of the earth's atmosphere, including but not limited to satellites, space stations, and the Space Shuttle System (including orbiter, external tanks, and solid rocket boosters), are exempt from the requirements of this subpart, except for depainting operations found in § 63.746.

(i) Any waterborne coating for which the manufacturer's supplied data demonstrate that organic HAP and VOC contents are less than or equal to the organic HAP and VOC content limits for its coating type, as specified in §§ 63.745(c) and 63.747(c), is exempt from the following requirements of this subpart: §§ 63.745 (d) and (e), 63.747(d) and (e), 63.749 (d) and (h), 63.750 (c) through (h) and (k) through (n), 63.752 (c) and (f), and 63.753 (c) and (e). A facility shall maintain the manufacturer's supplied data and annual purchase records for each exempt waterborne coating readily available for inspection and review and shall retain these data for 5 years.

(j) Regulated activities associated with the rework of antique aerospace vehicles or components are exempt from the requirements of this subpart.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15016, Mar. 27, 1998; 63 FR 46532, Sept. 1, 1998]

§ 63.742 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Aerospace facility means any facility that produces, reworks, or repairs in any amount any commercial, civil, or military aerospace vehicle or component.

Aerospace vehicle or component means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles.

Aircraft fluid systems means those systems that handle hydraulic fluids, fuel, cooling fluids, or oils.

Aircraft transparency means the aircraft windshield, canopy, passenger windows, lenses, and other components which are constructed of transparent materials.

Antique aerospace vehicle or component means an aircraft or component thereof that was built at least 30 years ago. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.

Carbon adsorber means one vessel in a series of vessels in a carbon adsorption system that contains carbon and is used to remove gaseous pollutants from a gaseous emission source.

Carbon Adsorber control efficiency means the total efficiency of the control system, determined by the product of the capture efficiency and the control device efficiency.

Chemical milling maskant means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants, critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (i.e., bonding, critical use and line sealer, and seal coat) are also exempt from this subpart. (See also Type I and Type II etchant definitions.)

Chemical milling maskant application operation means application of chemical milling maskant for use with Type I or Type II chemical milling etchants.

Cleaning operation means collectively spray gun, hand-wipe, and flush cleaning operations.

Cleaning solvent means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f).

Closed-cycle depainting system means a dust-free, automated process that removes permanent coating in small sections at a time and maintains a continuous vacuum around the area(s) being depainted to capture emissions.

Coating means a material that is applied to the surface of an aerospace vehicle or component to form a decorative, protective, or functional solid film, or the solid film itself.

Coating operation means the use of a spray booth, tank, or other enclosure or any area, such as a hangar, for the application of a single type of coating (e.g., primer); the use of the same spray booth for the application of another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately.

Coating unit means a series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or flashoff area in order to be included in this definition.

Confined space means a space that: (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; (2) has limited or restricted means for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited means of entry); and (3) is not suitable for continuous employee occupancy.

Control device means destruction and/or recovery equipment used to destroy or recover HAP or VOC emissions generated by a regulated operation.

Control system means a combination of pollutant capture system(s) and control device(s) used to reduce discharge to the atmosphere of HAP or VOC emissions generated by a regulated operation.

Depainting means the removal of a permanent coating from the outer surface of an aerospace vehicle or component, whether by chemical or non-chemical means. For non-chemical means, this definition excludes hand and mechanical sanding, and any other non-chemical removal processes that do not involve blast media or other mechanisms that would result in airborne particle movement at high velocity.

Depainting operation means the use of a chemical agent, media blasting, or any other technique to remove permanent coatings from the outer surface of an aerospace vehicle or components. The depainting operation includes washing of the aerospace vehicle or component to remove residual stripper, media, or coating residue.

Electrodeposition of paint means the application of a coating using a water-based electrochemical bath process. The component being coated is immersed in a bath of the coating. An electric potential is applied between the component and an oppositely charged electrode hanging in the bath. The electric potential causes the ionized coating to be electrically attracted, migrated, and deposited on the component being coated.

Electrostatic spray means a method of applying a spray coating in which an electrical charge is applied to the coating and the substrate is grounded. The coating is attracted to the substrate by the electrostatic potential between them.

Exempt solvent means specified organic compounds that have been determined by the EPA to have negligible photochemical reactivity and are listed in 40 CFR 51.100.

Exterior primer means the first layer and any subsequent layers of identically formulated coating applied to the exterior surface of an aerospace vehicle or component where the component is used on the exterior of the aerospace vehicle. Exterior primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent exterior topcoats. Coatings that are defined as specialty coatings are not included under this definition.

Flush cleaning means the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or be assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand action are used are not included.

General aviation (GA) means that segment of civil aviation that encompasses all facets of aviation except air carriers, commuters, and military. General aviation includes charter and corporate-executive transportation, instruction, rental, aerial application, aerial observation, business, pleasure, and other special uses.

General aviation rework facility means any aerospace facility with the majority of its revenues resulting from the reconstruction, repair, maintenance, repainting, conversion, or alteration of general aviation aerospace vehicles or components.

Hand-wipe cleaning operation means the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

Hazardous air pollutant (HAP) means any air pollutant listed in or pursuant to section 112(b) of the Act.

High efficiency particulate air (HEPA) filter means a filter that has a 99.97 percent reduction efficiency for 0.3 micron aerosol.

High volume low pressure (HVLP) spray equipment means spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap.

Inorganic hazardous air pollutant (HAP) means any HAP that is not organic.

Large commercial aircraft means an aircraft of more than 110,000 pounds, maximum certified take-off weight manufactured for non-military use.

Leak means any visible leakage, including misting and clouding.

Limited access space means internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings.

Mechanical sanding means aerospace vehicle or component surface conditioning which uses directional and random orbital abrasive tools and aluminum oxide or nylon abrasive pads for the purpose of corrosion rework, substrate repair, prepaint surface preparation, and other maintenance activities.

Natural draft opening means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

Non-chemical based depainting equipment means any depainting equipment or technique, including, but not limited to, media blasting equipment, that can depaint an aerospace vehicle or component in the absence of a chemical stripper. This definition does not include mechanical sanding or hand sanding.

Nonregenerative carbon adsorber means a carbon adsorber vessel in which the spent carbon bed does not undergo carbon regeneration in the adsorption vessel.

Operating parameter value means a minimum or maximum value established for a control device or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation.

Organic hazardous air pollutant (HAP) means any HAP that is organic.

Primer means the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Coatings that are defined as specialty coatings are not included under this definition.

Radome means the non-metallic protective housing for electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.).

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators, or organic-water separators or organic removal devices such as decanters, strippers, or thin-film evaporation units.

Research and Development means an operation whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and is not involved in the manufacture of final or intermediate products for commerical purposes, except in a de mimnimis manner.

Self-priming topcoat means a topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component.

Semi-aqueous cleaning solvent means a solution in which water is a primary ingredient (″ 60 percent of the solvent solution as applied must be water.)

Softener means a liquid that is applied to an aerospace vehicle or component to degrade coatings such as primers and topcoats specifically as a preparatory step to subsequent depainting by non-chemical based depainting equipment. Softeners may contain VOC but shall not contain any HAP as determined from MSDS's or manufacturer supplied information.

Solids means the non-volatile portion of the coating which after drying makes up the dry film.

Space vehicle means a man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, which through contamination can compromise the space vehicle performance.

Specialty coating means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection. Individual specialty coatings are defined in appendix A to this subpart and in the CTG for Aerospace Manufacturing and Rework Operations (EPA 453/R-97-004).

Spot stripping means the depainting of an area where it is not technically feasible to use a non-chemical depainting technique.

Spray gun means a device that atomizes a coating or other material and projects the particulates or other material onto a substrate.

Stripper means a liquid that is applied to an aerospace vehicle or component to remove permanent coatings such as primers and topcoats.

Surface preparation means the removal of contaminants from the surface of an aerospace vehicle or component, or the activation or reactivation of the surface in preparation for the application of a coating.

Temporary total enclosure means a total enclosure that is constructed for the sole purpose of measuring the emissions from an affected source that are not delivered to an emission control device. A temporary total enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent emission capture system. A temporary total enclosure will be assumed to achieve total capture of fugitive emissions if it conforms to the requirements found in § 63.750(g)(4) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the Administrator for approval of a temporary enclosure on a case-by-case basis.

Topcoat means a coating that is applied over a primer on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Coatings that are defined as specialty coatings are not included under this definition.

Total enclosure means a permanent structure that is constructed around a gaseous emission source so that all gaseous pollutants emitted from the source are collected and ducted through a control device, such that 100% capture efficiency is achieved. There are no fugitive emissions from a total enclosure. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process equipment adjustments are acceptable, but if such openings are routine or if an access door remains open during the entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure must be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. An enclosure that meets the requirements found in § 63.750(g)(4) is a permanent total enclosure.

Touch-up and repair operation means that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

Two-stage filter system means a dry particulate filter system using two layers of filter media to remove particulate. The first stage is designed to remove the bulk of the particulate and a higher efficiency second stage is designed to remove smaller particulate.

Type I etchant means a chemical milling etchant that contains varying amounts of dissolved sulfur and does not contain amines.

Type II etchant means a chemical milling etchant that is a strong sodium hydroxide solution containing amines.

Volatile organic compound (VOC) means any compound defined as VOC in 40 CFR 51.100. This includes any organic compound other than those determined by the EPA to be an exempt solvent. For purposes of determining compliance with emission limits, VOC will be measured by the approved test methods. Where such a method also inadvertently measures compounds that are exempt solvent, an owner or operator may exclude these exempt solvents when determining compliance with an emission standard.

Waterborne (water-reducible) coating means any coating that contains more than 5 percent water by weight as applied in its volatile fraction.

Waterwash system means a control system that utilizes flowing water (i.e., a conventional waterwash system) or a pumpless system to remove particulate emissions from the exhaust air stream in spray coating application or dry media blast depainting operations.

Nomenclature for determining carbon adsorber efficiency —The nomenclature defined below is used in § 63.750(g):

(1) A_k = the area of each natural draft opening (k) in a total enclosure, in square meters.

(2) C_{aj} = the concentration of HAP or VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

(3) C_{bi} = the concentration of HAP or VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

(4) C_{di} = the concentration of HAP or VOC in each gas stream (i) entering the emission control device from the affected source, in parts per million by volume.

(5) C_{fk} = the concentration of HAP or VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source, in parts per million by volume.

(6) C_{gv} = the concentration of HAP or VOC in each uncontrolled gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For the purposes of calculating the efficiency of the individual carbon adsorber vessel, C_{gv} may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts to the individual carbon adsorber vessels.

(7) C_{hv} = the concentration of HAP or VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

(8) E = the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

(9) F = the HAP or VOC emission capture efficiency of the HAP or VOC capture system achieved for the duration of the emission test (expressed as a fraction).

(10) FV = the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(11) H_v = the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

(12) H_{sys} = the efficiency of the carbon adsorption system calculated when each carbon adsorber vessel has an individual exhaust stack (expressed as a fraction).

(13) M_{ci} = the total mass in kilograms of each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7 to 30-day period, as appropriate, as determined from records at the affected source. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the mass of the coating has been determined, appropriate adjustments shall be made to account for them.

(14) M_r = the total mass in kilograms of HAP or VOC recovered for a 7 to 30-day period.

(15) Q_{aj} = the volumetric flow rate of each gas stream (j) exiting the emission control device in either dry standard cubic meters per hour when EPA Method 18 in appendix A of part 60 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(16) Q_{bi} = the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(17) Q_{di} = the volumetric flow rate of each gas stream (i) entering the emission control device from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(18) Q_{fk} = the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(19) Q_{gv} = the volumetric flow rate of each gas stream entering each individual carbon adsorber vessel (v) in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration. For purposes of calculating the efficiency of the individual carbon adsorber vessel, the value of Q_{gv} can be assumed to equal the value of Q_{hv} measured for that carbon adsorber vessel.

(20) Q_{hv} = the volumetric flow rate of each gas stream exiting each individual carbon adsorber vessel (v) in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(21) Q_{ini} = the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct in standard cubic meters per hour (wet basis).

(22) Q_{outj} = the volumetric flow rate of each gas stream (j) exiting the total enclosure through an exhaust duct or hood in standard cubic meters per hour (wet basis).

(23) R = the overall HAP or VOC emission reduction achieved for the duration of the emission test (expressed as a percentage).

(24) RS_i = the total mass in kilograms of HAP or VOC retained in the coating after drying.

(25) W_{oi} = the weight fraction of VOC in each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7- to 30-day period, as appropriate, as determined by EPA Method 24 or formulation data. This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the weight fraction of HAP or VOC in the coating has been determined, appropriate adjustments shall be made to account for them.

[60 FR 45956, Sept. 1, 1995, as amended at 63 FR 15017, Mar. 27, 1998; 63 FR 46533, Sept. 1, 1998; 65 FR 76945, Dec. 8, 2000]

§ 63.743 Standards: General.

(a) Except as provided in paragraphs (a)(4) through (a)(10) of this section and in Table 1 of this subpart, each owner or operator of an affected source subject to this subpart is also subject to the following sections of subpart A of this part:

(1) § 63.4, Prohibited activities and circumvention;

(2) § 63.5, Construction and reconstruction; and

(3) § 63.6, Compliance with standards and maintenance requirements.

(4) For the purposes of this subpart, all affected sources shall submit any request for an extension of compliance not later than 120 days before the affected source's compliance date. The extension request should be requested for the shortest time necessary to attain compliance, but in no case shall exceed 1 year.

(5)(i) For the purposes of this subpart, the Administrator (or the State with an approved permit program) will notify the owner or operator in writing of his/her intention to deny approval of a request for an extension of compliance submitted under either § 63.6(i)(4) or § 63.6(i)(5) within 60 calendar days after receipt of sufficient information to evaluate the request.

(ii) In addition, for purposes of this subpart, if the Administrator does not notify the owner or operator in writing of his/her intention to deny approval within 60 calendar days after receipt of sufficient information to evaluate a request for an extension of compliance, then the request shall be considered approved.

(6)(i) For the purposes of this subpart, the Administrator (or the State) will notify the owner or operator in writing of the status of his/her application submitted under § 63.6(i)(4)(ii) (that is, whether the application contains sufficient information to make a determination) within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted, rather than 15 calendar days as provided for in § 63.6(i)(13)(i).

(ii) In addition, for the purposes of this subpart, if the Administrator does not notify the owner or operator in writing of the status of his/her application within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted, then the information in the application or the supplementary information is to be considered sufficient upon which to make a determination.

(7) For the purposes of this subpart, each owner or operator who has submitted an extension request application under § 63.6(i)(5) is to be provided 30 calendar days to present additional information or arguments to the Administrator after he/she is notified that the application is not complete, rather than 15 calendar days as provided for in § 63.6(i)(13)(ii).

(8) For the purposes of this subpart, each owner or operator is to be provided 30 calendar days to present additional information to the Administrator after he/she is notified of the intended denial of a compliance extension request submitted under either § 63.6(i)(4) or § 63.6(i)(5), rather than 15 calendar days as provided for in § 63.6(1)(12)(iii)(B) and § 63.6(i)(13)(iii)(B).

(9) For the purposes of this subpart, a final determination to deny any request for an extension submitted under either § 63.6(i)(4) or § 63.6(i)(5) will be made within 60 calendar days after presentation of additional information or argument (if the application is complete), or within 60 calendar days after the final date specified for the presentation if no presentation is made, rather than 30 calendar days as provided for in § 63.6(i)(12)(iv) and § 63.6(i)(13)(iv).

(10) For the purposes of compliance with the requirements of § 63.5(b)(4) of the General Provisions and this subpart, owners or operators of existing primer or topcoat application operations and depainting operations who construct or reconstruct a spray booth or hangar that does not have the potential to emit 10 tons/yr or more of an individual inorganic HAP or 25 tons/yr or more of all inorganic HAP combined shall only be required to notify the Administrator of such construction or reconstruction on an annual basis. Notification shall be submitted on or before March 1 of each year and shall include the information required in § 63.5(b)(4) for each such spray booth or hangar constructed or reconstructed during the prior calendar year, except that such information shall be limited to inorganic HAP's. No

advance notification or written approval from the Administrator pursuant to § 63.5(b)(3) shall be required for the construction or reconstruction of such a spray booth or hangar unless the booth or hangar has the potential to emit 10 tons/yr or more of an individual inorganic HAP or 25 tons/yr or more of all inorganic HAP combined.

(b) *Startup, shutdown, and malfunction plan.* Each owner or operator that uses an air pollution control device or equipment to control HAP emissions shall prepare a startup, shutdown, and malfunction plan in accordance with § 63.6. Dry particulate filter systems operated per the manufacturer's instructions are exempt from a startup, shutdown, and malfunction plan. A startup, shutdown, and malfunction plan shall be prepared for facilities using locally prepared operating procedures. In addition to the information required in § 63.6, this plan shall also include the following provisions:

(1) The plan shall specify the operation and maintenance criteria for each air pollution control device or equipment and shall include a standardized checklist to document the operation and maintenance of the equipment;

(2) The plan shall include a systematic procedure for identifying malfunctions and for reporting them immediately to supervisory personnel; and

(3) The plan shall specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur.

(c) An owner or operator who uses an air pollution control device or equipment not listed in this subpart shall submit a description of the device or equipment, test data verifying the performance of the device or equipment in controlling organic HAP and/or VOC emissions, as appropriate, and specific operating parameters that will be monitored to establish compliance with the standards to the Administrator for approval not later than 120 days prior to the compliance date.

(d) Instead of complying with the individual coating limits in §§ 63.745 and 63.747, a facility may choose to comply with the averaging provisions specified in paragraphs (d)(1) through (d)(6) of this section.

(1) Each owner or operator of a new or existing source shall use any combination of primers, topcoats (including self-priming topcoats), Type I chemical milling maskants, or Type II chemical milling maskants such that the monthly volume-weighted average organic HAP and VOC contents of the combination of primers, topcoats, Type I chemical milling maskants, or Type II chemical milling maskants, as determined in accordance with the applicable procedures set forth in § 63.750, complies with the specified content limits in §§ 63.745(c) and 63.747(c), unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(2) Averaging is allowed only for uncontrolled primers, topcoats (including self-priming topcoats), Type I chemical milling maskants, or Type II chemical milling maskants.

(3) Averaging is not allowed between primers and topcoats (including self-priming topcoats).

(4) Averaging is not allowed between Type I and Type II chemical milling maskants.

(5) Averaging is not allowed between primers and chemical milling maskants, or between topcoats and chemical milling maskants.

(6) Each averaging scheme shall be approved in advance by the permitting agency and adopted as part of the facility's title V permit.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15017, Mar. 27, 1998; 71 FR 20457, Apr. 20, 2006]

§ 63.744 Standards: Cleaning operations.

(a) *Housekeeping measures.* Each owner or operator of a new or existing cleaning operation subject to this subpart shall comply with the requirements in these paragraphs unless the cleaning solvent used is identified in Table 1 of this section or contains HAP and VOC below the de minimis levels specified in § 63.741(f).

(1) Unless the owner or operator satisfies the requirements in paragraph (a)(4) of this section, place used solvent-laden cloth, paper, or any other absorbent applicators used for cleaning in bags or other closed containers. Ensure that these bags and containers are kept closed at all times except when depositing or removing these materials from the container. Use bags and containers of such design so as to contain the vapors of the cleaning solvent. Cotton-tipped swabs used for very small cleaning operations are exempt from this requirement.

(2) Unless the owner or operator satisfies the requirements in paragraph (a)(4) of this section, store fresh and spent cleaning solvents, except semi-aqueous solvent cleaners, used in aerospace cleaning operations in closed containers.

(4) Demonstrate to the Administrator (or delegated State, local, or Tribal authority) that equivalent or better alternative measures are in place compared to the use of closed containers for the solvent-laden materials described in paragraph (a)(1) of this section, or the storage of solvents described in paragraph (a)(2) of this section.

(3) Conduct the handling and transfer of cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent cleaning solvents in such a manner that minimizes spills.

(b) *Hand-wipe cleaning.* Each owner or operator of a new or existing hand-wipe cleaning operation (excluding cleaning of spray gun equipment performed in accordance with paragraph (c) of this section) subject to this subpart shall use cleaning solvents that meet one of the requirements specified in paragraphs (b)(1), (b)(2), and (b)(3) of this section. Cleaning solvent solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f) are exempt from the requirements in paragraphs (b)(1), (b)(2), and (b)(3) of this section.

(1) Meet one of the composition requirements in Table 1 of this section;

(2) Have a composite vapor pressure of 45 mm Hg (24.1 in. H_2 O) or less at 20 °C (68 °F); or

(3) Demonstrate that the volume of hand-wipe solvents used in cleaning operations has been reduced by at least 60% from a baseline adjusted for production. The baseline shall be established as part of an approved alternative plan administered by the State. Demonstrate that the volume of hand-wipe cleaning solvents used in cleaning operations has been reduced by at least 60 percent from a baseline adjusted for production. The baseline shall be calculated using data from 1996 and 1997, or as otherwise agreed upon by the Administrator or delegated State Authority. The baseline shall be approved by the Administrator or delegated State Authority and shall be included as part of the facility's title V or part 70 permit.

(c) *Spray gun cleaning.* Each owner or operator of a new or existing spray gun cleaning operation subject to this subpart in which spray guns are used for the application of coatings or any other materials that require the spray guns to be cleaned shall use one or more of the techniques, or their equivalent, specified in paragraphs (c)(1) through (c)(4) of this section. Spray gun cleaning operations using cleaning solvent solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f) are exempt from the requirements in paragraphs (c)(1) through (c)(4) of this section.

(1)(i) Enclosed system. Clean the spray gun in an enclosed system that is closed at all times except when inserting or removing the spray gun. Cleaning shall consist of forcing solvent through the gun.

(ii) If leaks are found during the monthly inspection required in § 63.751(a), repairs shall be made as soon as practicable, but no later than 15 days after the leak was found. If the leak is not repaired by the 15th day after detection, the cleaning solvent shall be removed, and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued.

(2) *Nonatomized cleaning.* Clean the spray gun by placing cleaning solvent in the pressure pot and forcing it through the gun with the atomizing cap in place. No atomizing air is to be used. Direct the cleaning solvent from the spray gun into a vat, drum, or other waste container that is closed when not in use.

(3) Disassembled spray gun cleaning. Disassemble the spray gun and clean the components by hand in a vat, which shall remain closed at all times except when in use. Alternatively, soak the components in a vat, which shall remain closed during the soaking period and when not inserting or removing components.

(4) *Atomizing cleaning.* Clean the spray gun by forcing the cleaning solvent through the gun and direct the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions.

(5) Cleaning of the nozzle tips of automated spray equipment systems, except for robotic systems that can be programmed to spray into a closed container, shall be exempt from the requirements of paragraph (c) of this section.

(d) *Flush cleaning.* Each owner or operator of a flush cleaning operation subject to this subpart (excluding those in which Table 1 or semi-aqueous cleaning solvents are used) shall empty the used cleaning solvent each time aerospace parts or assemblies, or components of a coating unit (with the exception of spray guns) are flush cleaned into an enclosed container or collection system that is kept closed when not in use or into a system with equivalent emission control.

(e) *Exempt cleaning operations.* The following cleaning operations are exempt from the requirements of paragraph (b) of this section:

(1) Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

(2) Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine);

(3) Cleaning and surface activation prior to adhesive bonding;

(4) Cleaning of electronic parts and assemblies containing electronic parts;

(5) Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;

(6) Cleaning of fuel cells, fuel tanks, and confined spaces;

(7) Surface cleaning of solar cells, coated optics, and thermal control surfaces;

(8) Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used in the interior of the aircraft;

(9) Cleaning of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components;

(10) Cleaning of aircraft transparencies, polycarbonate, or glass substrates;

(11) Cleaning and cleaning solvent usage associated with research and development, quality control, and laboratory testing;

(12) Cleaning operations, using nonflamable liquids, conducted within five feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells and tail sections; and

(13) Cleaning operations identified as essential uses under the Montreal Protocol for which the Administrator has allocated essential use allowances or exemptions in 40 CFR 82.4.

Table 1—Composition Requirements for Approved Cleaning Solvents

Cleaning solvent type	Composition requirements
Aqueous	Cleaning solvents in which water is the primary ingredient (≥80 percent of cleaning solvent solution as applied must be water). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives, such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point greater than 93 °C (200 °F) (as reported by the manufacturer), and the solution must be miscible with water.
Hydrocarbon-based	Cleaners that are composed of photochemically reactive hydrocarbons and/or oxygenated hydrocarbons and have a maximum vapor pressure of 7 mm Hg at 20 °C (3.75 in. H_2O and 68 °F). These cleaners also contain no HAP.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15018, Mar. 27 1998; 63 FR 46533, Sept. 1, 1998; 68 FR 37352, June 23, 2003]

§ 63.745 Standards: Primer and topcoat application operations.

(a) Each owner or operator of a new or existing primer or topcoat application operation subject to this subpart shall comply with the requirements specified in paragraph (c) of this section for those coatings that are uncontrolled (no control device is used to reduce organic HAP emissions from the operation), and in paragraph (d) of this section for those coatings that are controlled (organic HAP emissions from the operation are reduced by the use of a control device). Aerospace equipment that is no longer operational, intended for public display, and not easily capable of being moved is exempt from the requirements of this section.

(b) Each owner or operator shall conduct the handling and transfer of primers and topcoats to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.

(c) *Uncontrolled coatings—organic HAP and VOC content levels.* Each owner or operator shall comply with the organic HAP and VOC content limits specified in paragraphs (c)(1) through (c)(4) of this section for those coatings that are uncontrolled.

(1) Organic HAP emissions from primers shall be limited to an organic HAP content level of no more than: 540 g/L (4.5 lb/gal) of primer (less water), as applied, for general aviation rework facilities; or 650 g/L (5.4 lb/gal) of exterior primer (less water), as applied, to large commercial aircraft components (parts or assemblies) or fully assembled, large commercial aircraft at existing affected sources that produce fully assembled, large commercial aircraft; or 350 g/L (2.9 lb/gal) of primer (less water), as applied.

(2) VOC emissions from primers shall be limited to a VOC content level of no more than: 540 g/L (4.5 lb/gal) of primer (less water and exempt solvents), as applied, for general aviation rework facilities; or 650 g/L (5.4 lb/gal) of exterior primer (less water and exempt solvents), as applied, to large commercial aircraft components (parts or assemblies) or fully assembled, large commercial aircraft at existing affected sources that produce fully assembled, large commercial aircraft; or 350 g/L (2.9 lb/gal) of primer (less water and exempt solvents), as applied.

(3) Organic HAP emissions from topcoats shall be limited to an organic HAP content level of no more than: 420 g/L (3.5 lb/gal) of coating (less water) as applied or 540 g/L (4.5 lb/gal) of coating (less water) as applied for general aviation rework facilities. Organic HAP emissions from self-priming topcoats shall be limited to an organic HAP content level of no more than: 420 g/L (3.5 lb/gal) of self-priming topcoat (less water) as applied or 540 g/L (4.5 lb/gal) of self-priming topcoat (less water) as applied for general aviation rework facilities.

(4) VOC emissions from topcoats shall be limited to a VOC content level of no more than: 420 g/L (3.5 lb/gal) of coating (less water and exempt solvents) as applied or 540 g/L (4.5 lb/gal) of coating (less water and exempt solvents) as applied for general aviation rework facilities. VOC emissions from self-priming topcoats shall be limited to a VOC content level of no more than: 420 g/L (3.5 lb/gal) of self-priming topcoat (less water and exempt solvents) as applied or 540 g/L (4.5 lb/gal) of self-priming topcoat (less water) as applied for general aviation rework facilities.

(d) *Controlled coatings—control system requirements.* Each control system shall reduce the operation's organic HAP and VOC emissions to the atmosphere by 81% or greater, taking into account capture and destruction or removal efficiencies, as determined using the procedures in § 63.750(g) when a carbon adsorber is used and in § 63.750(h) when a control device other than a carbon adsorber is used.

(e) *Compliance methods.* Compliance with the organic HAP and VOC content limits specified in paragraphs (c)(1) through (c)(4) of this section shall be accomplished by using the methods specified in paragraphs (e)(1) and (e)(2) of this section either by themselves or in conjunction with one another.

(1) Use primers and topcoats (including self-priming topcoats) with HAP and VOC content levels equal to or less than the limits specified in paragraphs (c)(1) through (c)(4) of this section; or

(2) Use the averaging provisions described in § 63.743(d).

(f) *Application equipment.* Except as provided in paragraph (f)(3) of this section, each owner or operator of a new or existing primer or topcoat (including self-priming topcoat) application operation subject to this subpart in which any of the coatings contain organic HAP or VOC shall comply with the requirements specified in paragraphs (f)(1) and (f)(2) of this section.

(1) All primers and topcoats (including self-priming topcoats) shall be applied using one or more of the application techniques specified in paragraphs (f)(1)(i) through (f)(1)(ix) of this section.

(i) Flow/curtain coat application;

(ii) Dip coat application;

(iii) Roll coating;

(iv) Brush coating;

(v) Cotton-tipped swab application;

(vi) Electrodeposition (dip) coating;

(vii) High volume low pressure (HVLP) spraying;

(viii) Electrostatic spray application; or

(ix) Other coating application methods that achieve emission reductions equivalent to HVLP or electrostatic spray application methods, as determined according to the requirements in § 63.750(i).

(2) All application devices used to apply primers or topcoats (including self-priming topcoats) shall be operated according to company procedures, local specified operating procedures, and/or the manufacturer's specifications, whichever is most stringent, at alltimes. Equipment modified by the facility shall maintain a transfer efficiency equivalent to HVLP and electrostatic spray application techniques.

(3) The following situations are exempt from the requirements of paragraph (f)(1) of this section:

(i) Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;

(ii) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that the permitting agency has determined cannot be applied by any of the application methods specified in paragraph (f)(1) of this section;

(iii) The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.) and that the permitting agency has determined cannot be applied by any of the application methods specified in paragraph (f)(1) of this section;

(iv) The use of airbrush application methods for stenciling, lettering, and other identification markings;

(v) The use of hand-held spray can application methods; and

(vi) Touch-up and repair operations.

(g) *Inorganic HAP emissions.* Except as provided in paragraph (g)(4) of this section, each owner or operator of a new or existing primer or topcoat application operation subject to this subpart in which any of the coatings that are spray applied contain inorganic HAP, shall comply with the applicable requirements in paragraphs (g)(1) through (g)(3) of this section.

(1) Apply these coatings in a booth or hangar in which air flow is directed downward onto or across the part or assembly being coated and exhausted through one or more outlets.

(2) Control the air stream from this operation as follows:

(i) For existing sources, the owner or operator must choose one of the following:

(A) Before exhausting it to the atmosphere, pass the air stream through a dry particulate filter system certified using the methods described in § 63.750(o) to meet or exceed the efficiency data points in Tables 1 and 2 of this section; or

Table 1—Two-Stage Arrestor; Liquid Phase Challenge for Existing Sources

Filtration efficiency requirement, %	Aerodynamic particle size range, μm
>90	>5.7
>50	>4.1
>10	>2.2

Table 2—Two-Stage Arrestor; Solid Phase Challenge for Existing Sources

Filtration efficiency requirement, %	Aerodynamic particle size range, μm
>90	>8.1
>50	>5.0
>10	>2.6

(B) Before exhausting it to the atmosphere, pass the air stream through a waterwash system that shall remain in operation during all coating application operations; or

(C) Before exhausting it to the atmosphere, pass the air stream through an air pollution control system that meets or exceeds the efficiency data points in Tables 1 and 2 of this section and is approved by the permitting authority.

(ii) For new sources, either:

(A) Before exhausting it to the atmosphere, pass the air stream through a dry particulate filter system certified using the methods described in § 63.750(o) to meet or exceed the efficiency data points in Tables 3 and 4 of this section; or

Table 3—Three-Stage Arrestor; Liquid Phase Challenge for New Sources

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>95	>2.0
>80	>1.0
>65	>0.42

Table 4—Three-Stage Arrestor; Solid Phase Challenge for New Sources

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>95	>2.5
>85	>1.1
>75	>0.70

(B) Before exhausting it to the atmosphere, pass the air stream through an air pollution control system that meets or exceeds the efficiency data points in Tables 3 and 4 of this section and is approved by the permitting authority.

(iii) Owners or operators of new sources that have commenced construction or reconstruction after June 6, 1994 but prior to October 29, 1996 may comply with the following requirements in lieu of the requirements in paragraph (g)(2)(ii) of this section:

(A) Pass the air stream through either a two-stage dry particulate filter system or a waterwash system before exhausting it to the atmosphere.

(B) If the primer or topcoat contains chromium or cadmium, control shall consist of a HEPA filter system, three-stage filter system, or other control system equivalent to the three stage filter system as approved by the permitting agency.

(iv) If a dry particulate filter system is used, the following requirements shall be met:

(A) Maintain the system in good working order;

(B) Install a differential pressure gauge across the filter banks;

(C) Continuously monitor the pressure drop across the filter and read and record the pressure drop once per shift; and

(D) Take corrective action when the pressure drop exceeds or falls below the filter manufacturer's recommended limit(s).

(v) If a conventional waterwash system is used, continuously monitor the water flow rate and read and record the water flow rate once per shift. If a pumpless system is used, continuously monitor the booth parameter(s) that indicate performance of the booth per the manufacturer's recommendations to maintain the booth within the acceptable operating efficiency range and read and record the parameters once per shift.

(3) If the pressure drop across the dry particulate filter system, as recorded pursuant to § 63.752(d)(1), is outside the limit(s) specified by the filter manufacturer or in locally prepared operating procedures, shut down the operation immediately and take corrective action. If the water path in the waterwash system fails the visual continuity/flow characteristics check, or the water flow rate recorded pursuant to § 63.752(d)(2) exceeds the limit(s) specified by the booth manufacturer or in locally prepared operating procedures, or the booth manufacturer's or locally prepared maintenance procedures for the filter or waterwash system have not been performed as scheduled, shut down the operation immediately and take corrective action. The operation shall not be resumed until the pressure drop or water flow rate is returned within the specified limit(s).

(4) The requirements of paragraphs (g)(1) through (g)(3) of this section do not apply to the following:

(i) Touch-up of scratched surfaces or damaged paint;

(ii) Hole daubing for fasteners;

(iii) Touch-up of trimmed edges;

(iv) Coating prior to joining dissimilar metal components;

(v) Stencil operations performed by brush or air brush;

(vi) Section joining;

(vii) Touch-up of bushings and other similar parts;

(viii) Sealant detackifying;

(ix) Painting parts in an area identified in a title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth; and

(x) The use of hand-held spray can application methods.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15019, Mar. 27, 1998; 63 FR 46533, Sept. 1, 1998; 65 FR 76945, Dec. 8, 2000]

§ 63.746 Standards: Depainting operations.

(a) *Applicability.* Each owner or operator of a new or existing depainting operation subject to this subpart shall comply with the requirements in paragraphs (a)(1) through (a)(3) of this section, and with the requirements specified in paragraph (b) where there are no controls for organic HAP, or paragraph (c) where organic HAP are controlled using a control system. This section does not apply to an aerospace manufacturing or rework facility that depaints six or less completed aerospace vehicles in a calendar year.

(1) The provisions of this section apply to the depainting of the outer surface areas of completed aerospace vehicles, including the fuselage, wings, and vertical and horizontal stabilizers of the aircraft, and the outer casing and stabilizers of missiles and rockets. These provisions do not apply to the depainting of parts or units normally removed from the aerospace vehicle for depainting. However, depainting of wings and stabilizers is always subject to the requirements of this section regardless of whether their removal is considered by the owner or operator to be normal practice for depainting.

(2) Aerospace vehicles or components that are intended for public display, no longer operational, and not easily capable of being moved are exempt from the requirements of this section.

(3) The following depainting operations are exempt from the requirements of this section:

(i) Depainting of radomes; and

(ii) Depainting of parts, subassemblies, and assemblies normally removed from the primary aircraft structure before depainting.

(b)(1) *HAP emissions—non-HAP chemical strippers and technologies.* Except as provided in paragraphs (b)(2) and (b)(3) of this section, each owner or operator of a new or existing aerospace depainting operation subject to this subpart shall emit no organic HAP from chemical stripping formulations and agents or chemical paint softeners.

(2) Where non-chemical based equipment is used to comply with paragraph (b)(1) of this section, either in total or in part, each owner or operator shall operate and maintain the equipment according to the manufacturer's specifications

or locally prepared operating procedures. During periods of malfunctions of such equipment, each owner or operator may use substitute materials during the repair period provided the substitute materials used are those available that minimize organic HAP emissions. In no event shall substitute materials be used for more than 15 days annually, unless such materials are organic HAP-free.

(3) Each owner or operator of a new or existing depainting operation shall not, on an annual average basis, use more than 26 gallons of organic HAP-containing chemical strippers or alternatively 190 pounds of organic HAP per commercial aircraft depainted; or more than 50 gallons of organic HAP-containing chemical strippers or alternatively 365 pounds of organic HAP per military aircraft depainted for spot stripping and decal removal.

(4) Each owner or operator of a new or existing depainting operation complying with paragraph (b)(2), that generates airborne inorganic HAP emissions from dry media blasting equipment, shall also comply with the requirements specified in paragraphs (b)(4)(i) through (b)(4)(v) of this section.

(i) Perform the depainting operation in an enclosed area, unless a closed-cycle depainting system is used.

(ii)(A) For existing sources pass any air stream removed from the enclosed area or closed-cycle depainting system through a dry particulate filter system, certified using the method described in § 63.750(o) to meet or exceed the efficiency data points in Tables 1 and 2 of § 63.745, through a baghouse, or through a waterwash system before exhausting it to the atmosphere.

(B) For new sources pass any air stream removed from the enclosed area or closed-cycle depainting system through a dry particulate filter system certified using the method described in § 63.750(o) to meet or exceed the efficiency data points in Tables 3 and 4 of § 63.745 or through a baghouse before exhausting it to the atmosphere.

(c) Owners or operators of new sources that have commenced construction or reconstruction after June 6, 1994 but prior to October 29, 1996 may comply with the following requirements in lieu of the requirements in paragraph (b)(4)(ii)(B) of this section:

(*1*) Pass the air stream through either a two-stage dry particulate filter system or a waterwash system before exhausting it to the atmosphere.

(*2*) If the coating being removed contains chromium or cadmium, control shall consist of a HEPA filter system, three-stage filter system, or other control system equivalent to the three-stage filter system as approved by the permitting agency.

(iii) If a dry particulate filter system is used, the following requirements shall be met:

(A) Maintain the system in good working order;

(B) Install a differential pressure gauge across the filter banks;

(C) Continuously monitor the pressure drop across the filter, and read and record the pressure drop once per shift; and

(D) Take corrective action when the pressure drop exceeds or falls below the filter manufacturer's recommended limits.

(iv) If a waterwash system is used, continuously monitor the water flow rate, and read and record the water flow rate once per shift.

(v) If the pressure drop, as recorded pursuant to § 63.752(e)(7), is outside the limit(s) specified by the filter manufacturer or in locally prepared operating procedures, whichever is more stringent, shut down the operation immediately and take corrective action. If the water path in the waterwash system fails the visual continuity/flow characteristics check, as recorded pursuant to § 63.752(e)(7), or the water flow rate, as recorded pursuant to § 63.752(d)(2), exceeds the limit(s) specified by the booth manufacturer or in locally prepared operating procedures, or the booth manufacturer's or locally prepared maintenance procedures for the filter or waterwash system have not

been performed as scheduled, shut down the operation immediately and take corrective action. The operation shall not be resumed until the pressure drop or water flow rate is returned within the specified limit(s).

(5) Mechanical and hand sanding operations are exempt from the requirements in paragraph (b)(4) of this section.

(c) *Organic HAP emissions—organic HAP-containing chemical strippers.* Each owner or operator of a new or existing organic HAP-containing chemical stripper depainting operation subject to this subpart shall comply with the requirements specified in this paragraph.

(1) All organic HAP emissions from the operation shall be reduced by the use of a control system. Each control system that was installed before the effective date shall reduce the operations' organic HAP emissions to the atmosphere by 81 percent or greater, taking into account capture and destruction or removal efficiencies.

(2) Each control system installed on or after the effective date shall reduce organic HAP emissions to the atmosphere by 95 percent or greater. Reduction shall take into account capture and destruction or removal efficiencies, and may take into account the volume of chemical stripper used relative to baseline levels (e.g., the 95 percent efficiency may be achieved by controlling emissions at 81 percent efficiency with a control system and using 74 percent less stripper than in baseline applications). The baseline shall be calculated using data from 1996 and 1997, which shall be on a usage per aircraft or usage per square foot of surface basis.

(3) The capture and destruction or removal efficiencies are to be determined using the procedures in § 63.750(g) when a carbon adsorber is used and those in § 63.750(h) when a control device other than a carbon adsorber is used.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15020, Mar. 27, 1998; 63 FR 46533, Sept. 1, 1998]

§ 63.747 Standards: Chemical milling maskant application operations.

(a) Each owner or operator of a new or existing chemical milling maskant operation subject to this subpart shall comply with the requirements specified in paragraph (c) of this section for those chemical milling maskants that are uncontrolled (no control device is used to reduce organic HAP emissions from the operation) and in paragraph (d) of this section for those chemical milling maskants that are controlled (organic HAP emissions from the operation are reduced by the use of a control device).

(b) Each owner or operator shall conduct the handling and transfer of chemical milling maskants to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.

(c) *Uncontrolled maskants—organic HAP and VOC content levels.* Each owner or operator shall comply with the organic HAP and VOC content limits specified in paragraphs (c)(1) and (c)(2) of this section for each chemical milling maskant that is uncontrolled.

(1) Organic HAP emissions from chemical milling maskants shall be limited to organic HAP content levels of no more than 622 grams of organic HAP per liter (5.2 lb/gal) of Type I chemical milling maskant (less water) as applied, and no more than 160 grams of organic HAP per liter (1.3 lb/gal) of Type II chemical milling maskant (less water) as applied.

(2) VOC emissions from chemical milling maskants shall be limited to VOC content levels of no more than 622 grams of VOC per liter (5.2 lb/gal) of Type I chemical milling maskant (less water and exempt solvents) as applied, and no more than 160 grams of VOC per liter (1.3 lb/gal) of Type II chemical milling maskant (less water and exempt solvents) as applied.

(3) The requirements of paragraphs (c)(1) and (c)(2) of this section do not apply to the following:

(i) Touch-up of scratched surfaces or damaged maskant; and

(ii) Touch-up of trimmed edges.

(d) *Controlled maskants—control system requirements.* Each control system shall reduce the operation's organic HAP and VOC emissions to the atmosphere by 81% or greater, taking into account capture and destruction or removal efficiencies, as determined using the procedures in § 63.750(g) when a carbon adsorber is used and in § 63.750(h) when a control device other than a carbon adsorber is used.

(e) *Compliance methods.* Compliance with the organic HAP and VOC content limits specified in paragraphs (c)(1) and (c)(2) of this section may be accomplished by using the methods specified in paragraphs (e)(1) and (e)(2) of this section either by themselves or in conjunction with one another.

(1) Use chemical milling maskants with HAP and VOC content levels equal to or less than the limits specified in paragraphs (c)(1) and (c)(2) of this section.

(2) Use the averaging provisions described in § 63.743(d).

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15021, Mar. 27, 1998]

§ 63.748 Standards: Handling and storage of waste.

Except as provided in § 63.741(e), the owner or operator of each facility subject to this subpart that produces a waste that contains HAP shall conduct the handling and transfer of the waste to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.

§ 63.749 Compliance dates and determinations.

(a) *Compliance dates.* (1) Each owner or operator of an existing affected source subject to this subpart shall comply with the requirements of this subpart by September 1, 1998, except as specified in paragraph (a)(2) of this section. Owners or operators of new affected sources subject to this subpart shall comply on the effective date or upon startup, whichever is later. In addition, each owner or operator shall comply with the compliance dates specified in § 63.6(b) and (c).

(2) Owners or operators of existing primer or topcoat application operations and depainting operations who construct or reconstruct a spray booth or hangar must comply with the new source requirements for inorganic HAP specified in §§ 63.745(g)(2)(ii) and 63.746(b)(4) for that new spray booth or hangar upon startup. Such sources must still comply with all other existing source requirements by September 1, 1998.

(b) *General.* Each facility subject to this subpart shall be considered in noncompliance if the owner or operator fails to submit a startup, shutdown, and malfunction plan as required by § 63.743(b) or uses a control device other than one specified in this subpart that has not been approved by the Administrator, as required by § 63.743(c).

(c) *Cleaning operations.* Each cleaning operation subject to this subpart shall be considered in noncompliance if the owner or operator fails to institute and carry out the housekeeping measures required under § 63.744(a). Incidental emissions resulting from the activation of pressure release vents and valves on enclosed cleaning systems are exempt from this paragraph.

(1) *Hand-wipe cleaning.* An affected hand-wipe cleaning operation shall be considered in compliance when all hand-wipe cleaning solvents, excluding those used for hand cleaning of spray gun equipment under § 63.744(c)(3), meet either the composition requirements specified in § 63.744(b)(1) or the vapor pressure requirement specified in § 63.744(b)(2).

(2) *Spray gun cleaning.* An affected spray gun cleaning operation shall be considered in compliance when each of the following conditions is met:

(i) One of the four techniques specified in § 63.744 (c)(1) through (c)(4) is used;

(ii) The technique selected is operated according to the procedures specified in § 63.744 (c)(1) through (c)(4) as appropriate; and

(iii) If an enclosed system is used, monthly visual inspections are conducted and any leak detected is repaired within 15 days after detection. If the leak is not repaired by the 15th day after detection, the solvent shall be removed and the enclosed cleaner shall be shut down until the cleaner is repaired or its use is permanently discontinued.

(3) *Flush cleaning.* An affected flush cleaning operation shall be considered in compliance if the operating requirements specified in § 63.744(d) are implemented and carried out.

(d) *Organic HAP and VOC content levels—primer and topcoat application operations*— (1) *Performance test periods.* For uncontrolled coatings that are not averaged, each 24 hours is considered a performance test. For compliant and non-compliant coatings that are averaged together, each 30-day period is considered a performance test, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program. When using a control device other than a carbon adsorber, three 1-hour runs constitute the test period for the initial and any subsequent performance test. When using a carbon adsorber, each rolling material balance period is considered a performance test.

(2) *Initial performance tests.* If a control device is used, each owner or operator shall conduct an initial performance test to demonstrate compliance with the overall reduction efficiency specified in paragraph § 63.745, unless a waiver is obtained under either § 63.7(e)(2)(iv) or § 63.7(h). The initial performance test shall be conducted according to the procedures and test methods specified in § 63.7 and § 63.750(g) for carbon adsorbers and in § 63.750(h) for control devices other than carbon adsorbers. For carbon adsorbers, the initial performance test shall be used to establish the appropriate rolling material balance period for determining compliance. The procedures in paragraphs (d)(2)(i) through (d)(2)(vi) of this section shall be used in determining initial compliance with the provisions of this subpart for carbon adsorbers.

(i)(A) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.750(g) (2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(B) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(ii) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(iii) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(iv) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(v) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(vi) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(3) The primer application operation is considered in compliance when the conditions specified in paragraphs (d)(3)(i) through (d)(3)(iv) of this section, as applicable, and in paragraph (e) of this section are met. Failure to meet any one of the conditions identified in these paragraphs shall constitute noncompliance.

(i) For all uncontrolled primers, all values of H_i and H_a (as determined using the procedures specified in § 63.750 (c) and (d)) are less than or equal to 350 grams of organic HAP per liter (2.9 lb/gal) of primer (less water) as applied, and all values of G_i and G_a (as determined using the procedures specified in § 63.750 (e) and (f)) are less than or equal to 350 grams of organic VOC per liter (2.9 lb/gal) of primer (less water and exempt solvents) as applied.

(ii) If a control device is used:

(A) The overall control system efficiency, E_k , as determined using the procedures specified in § 63.750(g) for control systems containing carbon adsorbers and in § 63.750(h) for control systems with other control devices, is equal to or greater than 81% during the initial performance test and any subsequent performance test;

(B) If an incinerator other than a catalytic incinerator is used, the average combustion temperature for all 3-hour periods is greater than or equal to the average combustion temperature established under § 63.751(b)(11); and

(C) If a catalytic incinerator is used, the average combustion temperatures for all 3-hour periods are greater than or equal to the average combustion temperatures established under § 63.751(b)(12).

(iii)(A) Uses an application technique specified in § 63.745 (f)(1)(i) through (f)(1)(viii), or

(B) Uses an alternative application technique, as allowed under § 63.745(f)(1)(ix), such that the emissions of both organic HAP and VOC for the implementation period of the alternative application method are less than or equal to the emissions generated using HVLP or electrostatic spray application methods as determined using the procedures specified in § 63.750(i).

(iv) Operates all application techniques in accordance with the manufacturer's specifications or locally prepared operating procedures, whichever is more stringent.

(4) The topcoat application operation is considered in compliance when the conditions specified in paragraphs (e)(4)(i) through (e)(4)(iv) of this section, as applicable, and in paragraph (f) of this section are met. Failure to meet any of the conditions identified in these paragraphs shall constitute noncompliance.

(i) For all uncontrolled topcoats, all values of H_i and H_a (as determined using the procedures specified in § 63.750(c) and (d)) are less than or equal to 420 grams organic HAP per liter (3.5 lb/gal) of topcoat (less water) as applied, and all values of G_i and G_a (as determined using the procedures specified in § 63.750(e) and (f)) are less than or equal to 420 grams organic VOC per liter (3.5 lb/gal) of topcoat (less water and exempt solvents) as applied.

(ii) If a control device is used,

(A) The overall control system efficiency, E_k , as determined using the procedures specified in § 63.750(g) for control systems containing carbon adsorbers and in § 63.750(h) for control systems with other control devices, is equal to or greater than 81% during the initial performance test and any subsequent performance test;

(B) If an incinerator other than a catalytic incinerator is used, the average combustion temperature for all 3-hour periods is greater than or equal to the average combustion temperature established under § 63.751(b)(11); and

(C) If a catalytic incinerator is used, the average combustion temperatures for all 3-hour periods are greater than or equal to the average combustion temperatures established under § 63.751(b)(12).

(iii)(A) Uses an application technique specified in § 63.745 (f)(1)(i) through (f)(1)(viii); or

(B) Uses an alternative application technique, as allowed under § 63.745(f)(1)(ix), such that the emissions of both organic HAP and VOC for the implementation period of the alternative application method are less than or equal to the emissions generated using HVLP or electrostatic spray application methods as determined using the procedures specified in § 63.750(i).

(iv) Operates all application techniques in accordance with the manufacturer's specifications or locally prepared operating procedures.

(e) *Inorganic HAP emissions—primer and topcoat application operations.* For each primer or topcoat application operation that emits inorganic HAP, the operation is in compliance when:

(1) It is operated according to the requirements specified in § 63.745(g)(1) through (g)(3); and

(2) It is shut down immediately whenever the pressure drop or water flow rate is outside the limit(s) established for them and is not restarted until the pressure drop or water flow rate is returned within these limit(s), as required under § 63.745(g)(3).

(f) *Organic HAP emissions—Depainting operations*— (1) *Performance test periods.* When using a control device other than a carbon adsorber, three 1-hour runs constitute the test period for the initial and any subsequent performance test. When a carbon adsorber is used, each rolling material balance period is considered a performance test. Each 24-hour period is considered a performance test period for determining compliance with § 63.746(b)(1). For uncontrolled organic emissions from depainting operations, each calendar year is considered a performance test period for determining compliance with the HAP limits for organic HAP-containing chemical strippers used for spot stripping and decal removal.

(2) *Initial performance tests.* If a control device is used, each owner or operator shall conduct an initial performance test to demonstrate compliance with the overall reduction efficiency specified in § 63.746(c), unless a waiver is obtained under either § 63.7(e)(2)(iv) or § 63.7(h). The initial performance test shall be conducted according to the procedures and test methods specified in § 63.7 and § 63.750(g) for carbon adsorbers and in § 63.750(h) for control devices other than carbon adsorbers. For carbon adsorbers, the initial performance test shall be used to establish the appropriate rolling material balance period for determining compliance. The procedures in paragraphs (2)(i) through (2)(vi) of this section shall be used in determining initial compliance with the provisions of this subpart for carbon adsorbers.

(i)(A) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.750(g)(2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(B) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(ii) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(iii) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(iv) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(v) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(vi) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(3) An organic HAP-containing chemical stripper depainting operation is considered in compliance when the conditions specified in paragraph (g)(3)(i) of this section are met.

(i) If a carbon adsorber (or other control device) is used, the overall control efficiency of the control system, as determined using the procedures specified in § 63.750(g) (or other control device as determined using the procedures specified in § 63.750(h)), is equal to or greater than 81% for control systems installed before the effective date, or equal to or greater than 95% for control systems installed on or after the effective date, during the initial performance test and all subsequent material balances (or performance tests, as appropriate).

(ii) For non-HAP depainting operations complying with § 63.746(b)(1);

(A) For any spot stripping and decal removal, the value of C, as determined using the procedures specified in § 63.750(j), is less than or equal to 26 gallons of organic HAP-containing chemical stripper or 190 pounds of organic HAP per commercial aircraft depainted calculated on a yearly average; and is less than or equal to 50 gallons of organic HAP-containing chemical stripper or 365 pounds of organic HAP per military aircraft depainted calculated on a yearly average; and

(B) The requirements of § 63.746(b)(2) are carried out during malfunctions of non-chemical based equipment.

(g) *Inorganic HAP emissions—depainting operations.* Each depainting operation is in compliance when:

(1) The operating requirements specified in § 63.746(b)(4) are followed; and

(2) It is shut down immediately whenever the pressure drop or water flow rate is outside the limit(s) established for them and is not restarted until the pressure drop or water flow rate is returned within these limit(s), as required under § 63.746(b)(4)(v).

(h) *Chemical milling maskant application operations* —(1) *Performance test periods.* For uncontrolled chemical milling maskants that are not averaged, each 24-hour period is considered a performance test. For compliant and noncompliant chemical milling maskants that are averaged together, each 30-day period is considered a performance test, unless the permitting agency specifies a shorter period as part of an ambient ozone control program. When using a control device other than a carbon adsorber, three 1-hour runs constitute the test period for the initial and any subsequent performance test. When a carbon adsorber is used, each rolling material balance period is considered a performance test.

(2) *Initial performance tests.* If a control device is used, each owner or operator shall conduct an initial performance test to demonstrate compliance with the overall reduction efficiency specified in § 63.747(d), unless a waiver is obtained under either § 63.7(e)(2)(iv) or § 63.7(h). The initial performance test shall be conducted according to the procedures and test methods specified in § 63.7 and § 63.750(g) for carbon adsorbers and in § 63.750(h) for control devices other than carbon adsorbers. For carbon adsorbers, the initial performance test shall be used to establish the appropriate rolling material balance period for determining compliance. The procedures in paragraphs (h)(2) (i) through (vi) of this section shall be used in determining initial compliance with the provisions of this subpart for carbon adsorbers.

(i)(A) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.750(g) (2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(B) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(ii) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(iii) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(iv) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(v) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(vi) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(3) The chemical milling maskant application operation is considered in compliance when the conditions specified in paragraphs (i)(3)(i) and (i)(3)(ii) of this section are met.

(i) For all uncontrolled chemical milling maskants, all values of H_i and H_a (as determined using the procedures specified in § 63.750 (k) and (l)) are less than or equal to 622 grams of organic HAP per liter (5.2 lb/gal) of Type I chemical milling maskant as applied (less water), and 160 grams of organic HAP per liter (1.3 lb/gal) of Type II chemical milling maskant as applied (less water). All values of G_i and G_a (as determined using the procedures specified in § 63.750 (m) and (n)) are less than or equal to 622 grams of VOC per liter (5.2 lb/gal) of Type I chemical milling maskant as applied (less water and exempt solvents), and 160 grams of VOC per liter (1.3 lb/gal) of Type II chemical milling maskant (less water and exempt solvents) as applied.

(ii) If a carbon adsorber (or other control device) is used, the overall control efficiency of the control system, as determined using the procedures specified in § 63.750(g) (or systems with other control devices as determined using the procedures specified in § 63.750(h)), is equal to or greater than 81% during the initial performance test period and all subsequent material balances (or performance tests, as appropriate).

(i) *Handling and storage of waste.* For those wastes subject to this subpart, failure to comply with the requirements specified in § 63.748 shall be considered a violation.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15021, Mar. 27, 1998]

§ 63.750 Test methods and procedures.

(a) *Composition determination.* Compliance with the hand-wipe cleaning solvent approved composition list specified in § 63.744(b)(1) for hand-wipe cleaning solvents shall be demonstrated using data supplied by the manufacturer of the cleaning solvent. The data shall identify all components of the cleaning solvent and shall demonstrate that one of the approved composition definitions is met.

(b) *Vapor pressure determination.* The composite vapor pressure of hand-wipe cleaning solvents used in a cleaning operation subject to this subpart shall be determined as follows:

(1) For single-component hand-wipe cleaning solvents, the vapor pressure shall be determined using MSDS or other manufacturer's data, standard engineering reference texts, or other equivalent methods.

(2) The composite vapor pressure of a blended hand-wipe solvent shall be determined by quantifying the amount of each organic compound in the blend using manufacturer's supplied data or a gas chromatographic analysis in accordance with ASTM E 260-91 or 96 (incorporated by reference—see § 63.14 of subpart A of this part) and by calculating the composite vapor pressure of the solvent by summing the partial pressures of each component. The vapor pressure of each component shall be determined using manufacturer's data, standard engineering reference texts, or other equivalent methods. The following equation shall be used to determine the composite vapor pressure:

$$PP_c = \sum_{i=1}^{n} \frac{(W_i)(VP_i)/MW_i}{\frac{W_w}{MW_w} + \sum_{e=1}^{n} \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

where:

W_i =Weight of the “i”th VOC compound, grams.

W_w =Weight of water, grams.

W_e =Weight of non-HAP, nonVOC compound, grams.

MW_i =Molecular weight of the “i”th VOC compound, g/g-mole.

MW_w =Molecular weight of water, g/g-mole.

MW_e =Molecular weight of exempt compound, g/g-mole.

PP_c =VOC composite partial pressure at 20 °C, mm Hg.

VP_i =Vapor pressure of the “i”th VOC compound at 20 °C, mm Hg.

(c) *Organic HAP content level determination—compliant primers and topcoats.* For those uncontrolled primers and topcoats complying with the primer and topcoat organic HAP content limits specified in § 63.745(c) without being

averaged, the following procedures shall be used to determine the mass of organic HAP emitted per volume of coating (less water) as applied.

(1) For coatings that contain no exempt solvents, determine the total organic HAP content using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A, to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

When Method 24 is used to determine the VOC content of water-reducible coatings, the precision adjustment factors in Reference Method 24 shall be used. If the adjusted analytical VOC content is less than the formulation solvent content, then the analytical VOC content should be set equal to the formulation solvent content.

(2) For each coating formulation as applied, determine the organic HAP weight fraction, water weight fraction (if applicable), and density from manufacturer's data. If these values cannot be determined using the manufacturer's data, the owner or operator shall submit an alternative procedure for determining their values for approval by the Administrator. Recalculation is required only when a change occurs in the coating formulation.

(3) For each coating as applied, calculate the mass of organic HAP emitted per volume of coating (lb/gal) less water as applied using equations 1, 2, and 3:

$$V_{wi} = \frac{D_{ci} W_{wi}}{D_w} \qquad Eq.\ 1$$

where:

V_{wi} =volume (gal) of water in one gal of coating i.

D_{ci} =density (lb of coating per gal of coating) of coating i.

W_{wi} =weight fraction (expressed as a decimal) of water in coating i.

D_w =density of water, 8.33 lb/gal.

$$M_{Hi} = D_{ci} W_{Hi} \qquad Eq.\ 2$$

where:

M_{Hi} =mass (lb) of organic HAP in one gal of coating i.

D_{ci} =density (lb of coating per gal of coating) of coating i.

W_{Hi} =weight fraction (expressed as a decimal) of organic HAP in coating i.

$$H_i = \frac{M_{Hi}}{(1 - V_{wi})} \qquad Eq.\ 3$$

where:

H_i =mass of organic HAP emitted per volume of coating i (lb/gal) less water as applied.

M_{Hi} =mass (lb) of organic HAP in one gal of coating i.

V_{wi} =volume (gal) of water in one gal of coating i.

(d) *Organic HAP content level determination—averaged primers and topcoats.* For those uncontrolled primers and topcoats that are averaged together in order to comply with the primer and topcoat organic HAP content limits specified in § 63.745(c), the following procedure shall be used to determine the monthly volume-weighted average mass of organic HAP emitted per volume of coating (less water) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1)(i) Determine the total organic HAP weight fraction as applied of each coating. If any ingredients, including diluent solvent, are added to a coating prior to its application, the organic HAP weight fraction of the coating shall be determined at a time and location in the process after all ingredients have been added.

(ii) Determine the total organic HAP weight fraction of each coating as applied each month.

(A) If no changes have been made to a coating, either as supplied or as applied, or if a change has been made that has a minimal effect on the organic HAP content of the coating, the value previously determined may continue to be used until a change in formulation has been made by either the manufacturer or the user.

(B) If a change in formulation or a change in the ingredients added to the coating takes place, including the ratio of coating to diluent solvent, prior to its application, either of which results in a more than minimal effect on the organic HAP content of the coating, the total organic HAP weight fraction of the coating shall be redetermined.

(iii) Manufacturer's formulation data may be used to determine the total organic HAP content of each coating and any ingredients added to the coating prior to its application. If the total organic HAP content cannot be determined using the manufacturer's data, the owner or operator shall submit an alternative procedure for determining the total organic HAP weight fraction for approval by the Administrator.

(2)(i) Determine the volume both in total gallons as applied and in total gallons (less water) as applied of each coating. If any ingredients, including diluent solvents, are added prior to its application, the volume of each coating shall be determined at a time and location in the process after all ingredients (including any diluent solvent) have been added.

(ii) Determine the volume of each coating (less water) as applied each month, unless the permitting agency specifies a shorter period as part of an ambient ozone control program.

(iii) The volume applied may be determined from company records.

(3)(i) Determine the density of each coating as applied. If any ingredients, including diluent solvent, are added to a coating prior to its application, the density of the coating shall be determined at a time and location in the process after all ingredients have been added.

(ii) Determine the density of each coating as applied each month, unless the permitting agency specifies a shorter period as part of an ambient ozone control program.

(A) If no changes have been made to a coating, either as supplied or as applied, or if a change has been made that has a minimal effect on the density of the coating, then the value previously determined may continue to be used until a change in formulation has been made by either the manufacturer or the user.

(B) If a change in formulation or a change in the ingredients added to the coating takes place, including the ratio of coating to diluent solvent, prior to its application, either of which results in a more than minimal effect on the density of the coating, then the density of the coating shall be redetermined.

(iii) The density may be determined from company records, including manufacturer's data sheets. If the density of the coating cannot be determined using the company's records, including the manufacturer's data, then the owner or operator shall submit an alternative procedure for determining the density for approval by the Administrator.

(4) Calculate the total volume in gallons as applied (less water) by summing the individual volumes of each coating (less water) as applied, which were determined under paragraph (d)(2) of this section.

(5) Calculate the volume-weighted average mass of organic HAP in coatings emitted per unit volume (lb/gal) of coating (less water) as applied during each 30-day period using equation 4:

$$H_a = \frac{\sum_{i=1}^{n} W_{Hi} D_{ci} V_{ci}}{C_{lw}} \qquad Eq.\ 4$$

where:

H_a =volume-weighted average mass of organic HAP emitted per unit volume of coating (lb/gal) (less water) as applied during each 30-day period for those coatings being averaged.

n=number of coatings being averaged.

W_{Hi} =weight fraction (expressed as a decimal) of organic HAP in coating i as applied that is being averaged during each 30-day period.

D_{ci} =density (lb of coating per gal of coating) of coating i as applied that is being averaged during each 30-day period.

V_{ci} =volume (gal) of coating i as applied that is being averaged during the 30-day period.

C_{lw} =total volume (gal) of all coatings (less water) as applied that are being averaged during each 30-day period.

(e) *VOC content level determination—compliant primers and topcoats.* For those uncontrolled primers and topcoats complying with the primer and topcoat VOC content levels specified in § 63.745(c) without being averaged, the following procedure shall be used to determine the mass of VOC emitted per volume of coating (less water and exempt solvents) as applied.

(1) Determine the VOC content of each formulation (less water and exempt solvents) as applied using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A, to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

When Method 24 is used to determine the VOC content of water-reducible coatings, the precision adjustment factors in Reference Method 24 shall be used. If the adjusted analytical VOC content is less than the formulation solvent content, then the analytical VOC content should be set equal to the formulation solvent content.

(2) For each coating applied, calculate the mass of VOC emitted per volume of coating (lb/gal) (less water and exempt solvents) as applied using equations 5, 6, and 7:

$$V_{wi} = \frac{D_{ci} W_{wi}}{D_w} \qquad Eq.\ 5$$

where:

V_{wi} =volume (gal) of water in one gal of coating i.

D_{ci} =density (lb of coating per gal of coating) of coating i.

W_{wi} =weight fraction (expressed as a decimal) of water in coating i.

D_w =density of water, 8.33 lb/gal.

$$M_{vi} = D_{ci} W_{vi} \qquad Eq. 6$$

where:

M_{Vi} =mass (lb) of VOC in one gal of coating i.

D_{ci} =density (lb of coating per gal of coating) of coating i.

W_{Vi} =weight fraction (expressed as a decimal) of VOC in coating i.

$$G_i = \frac{M_{vi}}{(1 - V_{wi}) - V_{xi}} \qquad Eq. 7$$

where:

G_i =mass of VOC emitted per volume of coating i (lb/gal) (less water and exempt solvents) as applied.

M_{Vi} =mass (lb) of VOC in one gal of coating i.

V_{wi} =volume (gal) of water in one gal of coating i.

V_{Xi} =volume (gal) of exempt solvents in one gal of coating i.

(3)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating G_a , compliance shall be based, except as provided in paragraph (e)(3)(ii) of this section, upon the VOC content obtained using EPA Method 24.

(ii) If the VOC content of a coating obtained using Method 24 would indicate noncompliance as determined under either § 63.749 (d)(3)(i) or (d)(4)(i), an owner or operator may elect to average the coating with other uncontrolled coatings and (re)calculate G_i (using the procedure specified in paragraph (f) of this section), provided appropriate and sufficient records were maintained for all coatings included in the average (re)calculation. The (re)calculated value of G_i (G_a in paragraph (f)) for the averaged coatings shall then be used to determine compliance.

(f) *VOC content level determination—averaged primers and topcoats.* For those uncontrolled primers and topcoats that are averaged within their respective coating category in order to comply with the primer and topcoat VOC content limits specified in § 63.745 (c)(2) and (c)(4), the following procedure shall be used to determine the monthly volume-weighted average mass of VOC emitted per volume of coating (less water and exempt solvents) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1)(i) Determine the VOC content (lb/gal) as applied of each coating. If any ingredients, including diluent solvent, are added to a coating prior to its application, the VOC content of the coating shall be determined at a time and location in the process after all ingredients have been added.

(ii) Determine the VOC content of each coating as applied each month, unless the permitting agency specifies a shorter period as part of an ambient ozone control program.

(A) If no changes have been made to a coating, either as supplied or as applied, or if a change has been made that has a minimal effect on the VOC content of the coating, the value previously determined may continue to be used until a change in formulation has been made by either the manufacturer or the user.

(B) If a change in formulation or a change in the ingredients added to the coating takes place, including the ratio of coating to diluent solvent, prior to its application, either of which results in a more than minimal effect on the VOC content of the coating, the VOC content of the coating shall be redetermined.

(iii) Determine the VOC content of each primer and topcoat formulation (less water and exempt solvents) as applied using EPA Method 24 or from manufacturer's data.

(2)(i) Determine the volume both in total gallons as applied and in total gallons (less water and exempt solvents) as applied of each coating. If any ingredients, including diluent solvents, are added prior to its application, the volume of each coating shall be determined at a time and location in the process after all ingredients (including any diluent solvent) have been added.

(ii) Determine the volume of each coating (less water and exempt solvents) as applied each day.

(iii) The volume applied may be determined from company records.

(3) Calculate the total volume in gallons (less water and exempt solvents) as applied by summing the individual volumes of each coating (less water and exempt solvents) as applied, which were determined under paragraph (f)(2) of this section.

(4) Calculate the volume-weighted average mass of VOC emitted per unit volume (lb/gal) of coating (less water and exempt solvents) as applied for each coating category during each 30-day period using equation 8:

$$G_a = \frac{\sum_{i=1}^{n} (VOC)_{ci} V_{ci}}{C_{lwes}} \qquad Eq. 8$$

where:

G_a =volume weighted average mass of VOC per unit volume of coating (lb/gal) (less water and exempt solvents) as applied during each 30-day period for those coatings being averaged.

n=number of coatings being averaged.

$(VOC)_{ci}$ =VOC content (lb/gal) of coating i (less water and exempt solvents) as applied (as determined using the procedures specified in paragraph (f)(1) of this section) that is being averaged during the 30-day period.

V_{ci} =volume (gal) of coating i (less water and exempt solvents) as applied that is being averaged during the 30-day period.

C_{lwes} =total volume (gal) of all coatings (less water and exempt solvents) as applied during each 30-day period for those coatings being averaged.

(5)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating G_a , recalculation of G_a is required using the new value. If more than one coating is involved, the recalculation shall be made once using all of the new values.

(ii) If recalculation is required, an owner or operator may elect to include in the recalculation of G_a uncontrolled coatings that were not previously included provided appropriate and sufficient records were maintained for these other coatings to allow daily recalculations.

(iii) The recalculated value of G_a under either paragraph (f)(5)(i) or (f)(5)(ii) of this section shall be used to determine compliance.

(g) *Overall VOC and/or organic HAP control efficiency—carbon adsorber.* Each owner or operator subject to the requirements of § 63.745(d), § 63.746(c), or § 63.747(d) shall demonstrate initial compliance with the requirements of this subpart by following the procedures of paragraph (g)(1), (2), (3), (4), or (5) as applicable and paragraphs (6), (7), and (8) of this section. When an initial compliance demonstration is required by this subpart, the procedures in paragraphs (g)(9) through (g)(14) of this section shall be used in determining initial compliance with the provisions of this subpart.

(1) To demonstrate initial and continuous compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when emissions are controlled by a dedicated solvent recovery device, each owner or operator of the affected operation may perform a liquid-liquid HAP or VOC material balance over rolling 7- to 30-day periods in lieu of demonstrating compliance through the methods in paragraph (g)(2), (g)(3), or (g)(4) of this section. Results of the material balance calculations performed to demonstrate initial compliance shall be submitted to the Administrator with the notification of compliance status required by § 63.9(h) and by § 63.753 (c)(1)(iv), (d)(3)(i), and (e)(3). When demonstrating compliance by this procedure, § 63.7(e)(3) of subpart A does not apply. The amount of liquid HAP or VOC applied and recovered shall be determined as discussed in paragraph (g)(1)(iii) of this section. The overall HAP or VOC emission reduction (R) is calculated using equation 9:

$$R = \frac{M_r}{\sum_{i=1}^{n} [W_{oi}\ M_{ai} - RS_i]} \times 100 \qquad Eq.\ 9$$

(i) The value of RS_i is zero unless the owner or operator submits the following information to the Administrator for approval of a measured RS_i value that is greater than zero:

(A) Measurement techniques; and

(B) Documentation that the measured value of RS_i exceeds zero.

(ii) The measurement techniques of paragraph (g)(1)(i)(A) of this section shall be submitted to the Administrator for approval with the notification of performance test required under § 63.7(b).

(iii) Each owner or operator demonstrating compliance by the test method described in paragraph (g)(1) of this section shall:

(A) Measure the amount of coating or stripper as applied;

(B) Determine the VOC or HAP content of all coating and stripper applied using the test method specified in § 63.750(c) (1) through (3) or (e) (1) and (2) of this section;

(C) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the amount of HAP or VOC recovered by the solvent recovery device over rolling 7- to 30-day periods; the device shall be certified by the manufacturer to be accurate to within ±2.0 percent, and this certification shall be kept on record;

(D) Measure the amount of HAP or VOC recovered; and

(E) Calculate the overall HAP or VOC emission reduction (R) for rolling 7- to 30-day periods using equation 9.

(F) Compliance is demonstrated if the value of R is equal to or greater than the overall HAP control efficiencies required by § 63.745(d), § 63.746(c), or § 63.747(d).

(2) To demonstrate initial compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when affected HAP emission points are controlled by an emission control device other than a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a gaseous emission test using the following procedures.

(i) Construct the overall HAP emission reduction system so that all volumetric flow rates and total HAP or VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 63.750(g) (9) through (14).

(ii) Determine capture efficiency from the HAP emission points by capturing, venting, and measuring all HAP emissions from the HAP emission points. During a performance test, the owner or operator of affected HAP emission points located in an area with other gaseous emission sources not affected by this subpart shall isolate the affected HAP emission points from all other gaseous emission points by one of the following methods:

(A) Build a temporary total enclosure around the affected HAP emission point(s); or

(B) Shut down all gaseous emission points not affected by this subpart and continue to exhaust fugitive emissions from the affected HAP emission points through any building ventilation system and other room exhausts such as drying ovens. All ventilation air must be vented through stacks suitable for testing.

(iii) Operate the emission control device with all affected HAP emission points connected and operating.

(iv) Determine the efficiency (E) of the control device using equation 10:

(v) Determine the efficiency (F) of the capture system using equation 11:

$$E = \frac{\sum_{i=1}^{N} Q_{bi} C_{bi} - \sum_{j=1}^{P} Q_{aj} C_{aj}}{\sum_{i=1}^{N} Q_{bi} C_{bi}} \qquad Eq. 10$$

$$F = \frac{\sum_{i=1}^{N} Q_{di} C_{di}}{\sum_{i=1}^{N} Q_{di} C_{di} + \sum_{k=1}^{P} Q_{fk} C_{fk}} \qquad Eq. 11$$

(vi) For each HAP emission point subject to § 63.745(d), § 63.746(c), or § 63.747(d), compliance is demonstrated if the product of (E) × (F) is equal to or greater than the overall HAP control efficiencies required under § 63.745(d), § 63.746(c), or § 63.747(d).

(3) To demonstrate compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when affected HAP emission points are controlled by a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a gaseous emission test using the following procedures:

(i) Construct the overall HAP emission reduction system so that each volumetric flow rate and the total HAP emissions can be accurately determined by the applicable test methods and procedures specified in § 63.750(g) (9) through (14);

(ii) Assure that all HAP emissions from the affected HAP emission point(s) are segregated from gaseous emission points not affected by this subpart and that the emissions can be captured for measurement, as described in paragraphs (g)(2)(ii) (A) and (B) of this section;

(iii) Operate the emission control device with all affected HAP emission points connected and operating;

(iv) Determine the efficiency (H_v) of each individual carbon adsorber vessel (v) using equation 12:

$$H_v = \frac{Q_{gv}\ C_{gv} - Q_{kv}\ C_{kv}}{Q_{gv}\ C_{gv}} \qquad Eq.\ 12$$

(v) Determine the efficiency of the carbon adsorption system (H_{sys}) by computing the average efficiency of the individual carbon adsorber vessels as weighted by the volumetric flow rate (Q_{hv}) of each individual carbon adsorber vessel (v) using equation 13:

$$H_{sys} = \frac{\sum_{v=1}^{q} H_v\ Q_{kv}}{\sum_{v=1}^{q} Q_{kv}} \qquad Eq.\ 13$$

(vi) Determine the efficiency (F) of the capture system using equation 11.

(vii) For each HAP emission point subject to § 63.745(d), § 63.746(c), or § 63.747(d), compliance is demonstrated if the product of (H_{sys}) × (F) is equal to or greater than the overall HAP control efficiency required by § 63.745(d), § 63.746(c), or § 63.747(d).

(4) An alternative method of demonstrating compliance with § 63.745(d), § 63.746(c), or § 63.747(d) is the installation of a total enclosure around the affected HAP emission point(s) and the ventilation of all HAP emissions from the total enclosure to a control device with the efficiency specified in paragraph (g)(4)(iii) of this section. If this method is selected, the compliance test methods described in paragraphs (g)(1), (g)(2), and (g)(3) of this section are not required. Instead, each owner or operator of an affected source shall:

(i) Demonstrate that a total enclosure is installed. An enclosure that meets the requirements in paragraphs (g)(4)(i)(A) through (D) of this section shall be considered a total enclosure. The owner or operator of an enclosure that does not meet these requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. The enclosure shall be considered a total enclosure if it is demonstrated to the satisfaction of the Administrator that all HAP emissions from the affected HAP emission point(s) are contained and vented to the control device. The requirements for automatic approval are as follows:

(A) The total area of all natural draft openings shall not exceed 5% of the total surface area of the total enclosure's walls, floor, and ceiling;

(B) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening;

(C) The average inward face velocity (FV) across all natural draft openings shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(*1*) All forced makeup air ducts and all exhaust ducts are constructed so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in § 63.750(g) (10) and (11); volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(*2*) Determine FV by equation 14:

$$FV = \frac{\sum_{j=1}^{n} Q_{out\,j} - \sum_{i=1}^{p} Q_{in\,i}}{\sum_{k=1}^{q} A_k} \qquad Eq.\ 14$$

(D) The air passing through all natural draft openings shall flow into the enclosure continuously. If FV is less than or equal to 9,000 meters per hour, the continuous inward flow of air shall be verified by continuous observation using smoke tubes, streamers, tracer gases, or other means approved by the Administrator over the period that the volumetric flow rate tests required to determine FV are carried out. If FV is greater than 9,000 meters per hour, the direction of airflow through the natural draft openings shall be presumed to be inward at all times without verification.

(ii) Determine the control device efficiency using equation 10 or equations 12 and 13, as applicable, and the test methods and procedures specified in § 63.750(g) (9) through (14).

(iii) Compliance shall be achieved if the installation of a total enclosure is demonstrated and the value of E determined from equation 10 (or the value of H_{sys} determined from equations 12 and 13, as applicable) is equal to or greater than the overall HAP control efficiencies required under § 63.745(d), § 63.746(c), or § 63.747(d).

(5) When nonregenerative carbon adsorbers are used to comply with § 63.745(d), § 63.746(c), or § 63.747(d), the owner or operator may conduct a design evaluation to demonstrate initial compliance in lieu of following the compliance test procedures of paragraphs (g)(1), (2), (3), and (4) of this section. The design evaluation shall consider the vent stream composition, component concentrations, flow rate, relative humidity, and temperature, and shall establish the design exhaust vent stream organic compound concentration level, capacity of the carbon bed, type and working capacity of activated carbon used for the carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and the emission point operating schedule.

(6)(i) To demonstrate initial compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when hard piping or ductwork is used to direct VOC and HAP emissions from a VOC and HAP source to the control device, each owner or operator shall demonstrate upon inspection that the criteria of paragraph (g)(6)(i)(A) and paragraph (g)(6)(i) (B) or (C) of this section VR/FD are met.

(A) The equipment shall be vented to a control device.

(B) The control device efficiency (E or H_{sys} , as applicable) determined using equation 10 or equations 12 and 13, respectively, and the test methods and procedures specified in § 63.750(g) (9) through (14), shall be equal to or greater than the overall HAP control efficiency required by § 63.745(d), § 63.746(c), or § 63.747(d).

(C) When a nonregenerative carbon adsorber is used, the ductwork from the affected emission point(s) shall be vented to the control device and the carbon adsorber shall be demonstrated, through the procedures of § 63.750(g) (1), (2), (3), (4), or (5), to meet the requirements of § 63.745(d), § 63.746(c), or § 63.747(d).

(7) Startups and shutdowns are normal operation for this source category. Emissions from these activities are to be included when determining if the standards specified in § 63.745(d), § 63.746(c), or § 63.747(d) are being attained.

(8) An owner or operator who uses compliance techniques other than those specified in this subpart shall submit a description of those compliance procedures, subject to the Administrator's approval, in accordance with § 63.7(f) of subpart A.

(9) Either EPA Method 18 or EPA Method 25A of appendix A of part 60, as appropriate to the conditions at the site, shall be used to determine VOC and HAP concentration of air exhaust streams as required by § 63.750(g) (1) through (6). The owner or operator shall submit notice of the intended test method to the Administrator for approval along with the notification of the performance test required under § 63.7(b). Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. Except as indicated in paragraphs (g)(9) (i) and (ii) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(i) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to paragraph (g) (2) or (4) of this section, the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(ii) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3)

or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(10) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(11) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(12) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(13) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(14) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(h) *Overall VOC and/or organic HAP control efficiency—control devices other than carbon adsorbers.* Calculate the overall control efficiency of a control system with a control device other than a carbon adsorber using the following procedure.

(1) Calculate the overall control efficiency using equation 15:

$$E_k = R_k F_k \qquad Eq.\ 15$$

where:

E_k =overall VOC and/or organic HAP control efficiency (expressed as a decimal) of control system k.

R_k =destruction or removal efficiency (expressed as a decimal) of total organic compounds or total organic HAP for control device k as determined under paragraph (h)(2) of this section.

F_k =capture efficiency (expressed as a decimal) of capture system k as determined under paragraph (h)(3) of this section.

(2) The organic HAP destruction or removal efficiency R_k of a control device other than a carbon adsorber shall be determined using the procedures described below. The destruction efficiency may be measured as either total organic HAP or as TOC minus methane and ethane according to these procedures.

(i) Use Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, to select the sampling sites.

(ii) Determine the gas volumetric flow rate using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(iii) Use Method 18 of 40 CFR part 60, appendix A, to measure either TOC minus methane and ethane or total organic HAP. Alternatively, any other method or data that have been validated according to the applicable procedures in Method 301 of this part may be used.

(iv) Use the following procedure to calculate the destruction or removal efficiency:

(A) The destruction or removal efficiency test shall consist of three runs. The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, the samples shall be taken at approximately equal intervals in time such as 15-minute intervals during the run.

(B) Calculate the mass rate of either TOC (minus methane and ethane) or total organic HAP (E_i , E_o using equations 16 and 17:

$$E_i = K_2 \left(\sum_{j=1}^{n} C_{ij} M_{ij} \right) Q_i \qquad Eq. 16$$

$$E_o = K_2 \left(\sum_{j=1}^{n} C_{oj} M_{oj} \right) Q_o \qquad Eq. 17$$

where:

E_i , E_o =mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet and outlet of the control device, respectively, dry basis, kg/hr.

K_2 =constant, 2.494×10^{-6} (parts per million)$^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

n=number of sample components in the gas stream.

C_{ij} , C_{oj} =concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

M_{ij} , M_{oj} =molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

Q_i , Q_o =flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

(*1*) Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by EPA Method 18 shall be summed using equation 16 in paragraph (h)(2)(iv)(B) of this section.

(*2*) Where the mass rate of total organic HAP is being calculated, only the organic HAP species shall be summed using equation 17 in paragraph (h)(2)(iv)(B) of this section. The list of organic HAP is provided in § 63.104 of subpart F of this part.

(C) Calculate the destruction or removal efficiency for TOC (minus methane and ethane) or total organic HAP using equation 18:

$$R = \frac{E_i - E_o}{E_i} \times 100 \qquad Eq. 18$$

where:

R=destruction or removal efficiency of control device, percent.

E_i =mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet to the control device as calculated under paragraph (h)(2)(iv)(B) of this section, kg TOC per hour or kg organic HAP per hour.

E_o =mass rate of TOC (minus methane and ethane) or total organic HAP at the outlet of the control device, as calculated under paragraph (h)(2)(iv)(B) of this section, kg TOC per hour or kg organic HAP per hour.

(3) Determine the capture efficiency F_k of each capture system to which organic HAP and VOC emissions from coating operations are vented. The capture efficiency value shall be determined using Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure as found in appendix B to § 52.741 of part 52 of this

chapter for total enclosures, and the capture efficiency protocol specified in § 52.741(a)(4)(iii) of part 52 of this chapter for all other enclosures.

(i)(1) *Alternative application method—primers and topcoats.* Each owner or operator seeking to use an alternative application method (as allowed in § 63.745(f)(1)(ix)) in complying with the standards for primers and topcoats shall use the procedures specified in paragraphs (i)(2)(i) and (i)(2)(ii) or (i)(2)(iii) of this section to determine the organic HAP and VOC emission levels of the alternative application technique as compared to either HVLP or electrostatic spray application methods.

(2)(i) For the process or processes for which the alternative application method is to be used, the total organic HAP and VOC emissions shall be determined for an initial 30-day period, the period of time required to apply coating to five completely assembled aircraft, or a time period approved by the permitting agency. During this initial period, only HVLP or electrostatic spray application methods shall be used. The emissions shall be determined based on the volumes, organic HAP contents (less water), and VOC contents (less water and exempt solvents) of the coatings as applied.

(ii) Upon implementation of the alternative application method, use the alternative application method in production on actual production parts or assemblies for a period of time sufficient to coat an equivalent amount of parts and assemblies with coatings identical to those used in the initial 30-day period. The actual organic HAP and VOC emissions shall be calculated for this post-implementation period.

(iii) Test the proposed application method against either HVLP or electrostatic spray application methods in a laboratory or pilot production area, using parts and coatings representative of the process(es) where the alternative method is to be used. The laboratory test will use the same part configuration(s) and the same number of parts for both the proposed method and the HVLP or electrostatic spray application methods.

(iv) Whenever the approach in either paragraph (i)(2)(ii) or (i)(2)(iii) of this section is used, the owner or operator shall calculate both the organic HAP and VOC emission reduction using equation:

$$P = \frac{E_b - E_a}{E_b} \times 100 \qquad Eq.\ 19$$

where:

P=organic HAP or VOC emission reduction, percent.

E_b =organic HAP or VOC emissions, in pounds, before the alternative application technique was implemented, as determined under paragraph (i)(2)(i) of this section.

E_a =organic HAP of VOC emissions, in pounds, after the alternative application technique was implemented, as determined under paragraph (i)(2)(ii) of this section.

(3) Each owner or operator seeking to demonstrate that an alternative application method achieves emission reductions equivalent to HVLP or electrostatic spray application methods shall comply with the following:

(i) Each coating shall be applied such that the dried film thickness is within the range specified by the applicable specification(s) for the aerospace vehicle or component being coated.

(ii) If no such dried film thickness specification(s) exists, the owner or operator shall ensure that the dried film thickness applied during the initial 30-day period is equivalent to the dried film thickness applied during the alternative application method test period for similar aerospace vehicles or components.

(iii) Failure to comply with these dried film thickness requirements shall invalidate the test results obtained under paragraph (i)(2)(i) of this section.

(j) *Spot stripping and decal removal.* Each owner or operator seeking to comply with § 63.746(b)(3) shall determine the volume of organic HAP-containing chemical strippers or alternatively the weight of organic HAP used per aircraft using the procedure specified in paragraphs (j)(1) through (j)(3) of this section.

(1) For each chemical stripper used for spot stripping and decal removal, determine for each annual period the total volume as applied or the total weight of organic HAP using the procedure specified in paragraph (d)(2) of this section.

(2) Determine the total number of aircraft for which depainting operations began during the annual period as determined from company records.

(3) Calculate the annual average volume of organic HAP-containing chemical stripper or weight of organic HAP used for spot stripping and decal removal per aircraft using equation 20 (volume) or equation 21 (weight):

$$C = \frac{\sum_{i=1}^{n} V_{si}}{A} \qquad Eq.\ 20$$

where:

C=annual average volume (gal per aircraft) of organic HAP-containing chemical stripper used for spot stripping and decal removal.

n=number of organic HAP-containing chemical strippers used in the annual period.

V_{si} =volume (gal) of organic HAP-containing chemical stripper (i) used during the annual period.

A=number of aircraft for which depainting operations began during the annual period.

$$C = \frac{\sum_{i=1}^{n}\left(V_{si} D_{hi}\left(\sum_{i=1}^{m} W_{hi}\right)\right)}{A} \qquad Eq.\ 21$$

where:

C = annual average weight (lb per aircraft) of organic HAP (chemical stripper) used for spot stripping and decal removal.

m = number of organic HAP contained in each chemical stripper, as applied.

n = number of organic HAP-containing chemical strippers used in the annual period.

W_{hi} = weight fraction (expressed as a decimal) of each organic HAP (i) contained in the chemical stripper, as applied, for each aircraft depainted.

D_{hi} = density (lb/gal) of each organic HAP-containing chemical stripper (i), used in the annual period.

V_{si} = volume (gal) of organic HAP-containing chemical stripper (i) used during the annual period.

A = number of aircraft for which depainting operations began during the annual period.

(k) *Organic HAP content level determination—compliant chemical milling maskants.* For those uncontrolled chemical milling maskants complying with the chemical milling maskant organic HAP content limit specified in § 63.747(c)(1)

without being averaged, the following procedures shall be used to determine the mass of organic HAP emitted per unit volume of coating (chemical milling maskant) i as applied (less water), H_i (lb/gal).

(1) For coatings that contain no exempt solvents, determine the total organic HAP content using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

When Method 24 is used to determine the VOC content of water-reducible coatings, the precision adjustment factors in Reference Method 24 shall be used. If the adjusted analytical VOC content is less than the formulation solvent content, then the analytical VOC content should be set equal to the formulation solvent content.

(2) [Reserved]

(l) *Organic HAP content level determination—averaged chemical milling maskants.* For those uncontrolled chemical milling maskants that are averaged together in order to comply with the chemical milling maskant organic HAP content level specified in § 63.747(c)(1), the procedure specified in paragraphs (l)(1) through (l)(4) of this section shall be used to determine the monthly volume-weighted average mass of organic HAP emitted per volume of chemical milling maskant (less water) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1) Determine the total organic HAP weight fraction as applied of each chemical milling maskant used during each 30-day period using the procedure specified in paragraph (d)(1) of this section.

(2) Determine for each 30-day period:

(i) The individual volume of each chemical milling maskant applied in terms of total gallons (less water) (using the procedure specified in paragraph (d)(2) of this section), and

(ii) The total volume in gallons of all chemical milling maskants (less water) as applied by summing the individual volumes of each chemical milling maskant as applied (less water).

(3) Determine the density of each chemical milling maskant as applied used during each 30-day period using the procedure specified in paragraph (d)(3) of this section.

(4) Calculate the volume-weighted average mass of organic HAP emitted per unit volume (lb/gal) of chemical milling maskant (less water) as applied for all chemical milling maskants during each 30-day period using equation 22:

$$H_a = \frac{\sum_{i=1}^{n} W_{Hi} D_{mi} V_{mi}}{M_{tw}} \qquad \text{Eq. 22}$$

where:

H_a =volume-weighted mass of organic HAP emitted per unit volume of chemical milling maskants (lb/gal) (less water) as applied during each 30-day period for those chemical milling maskants being averaged.

n=number of chemical milling maskants being averaged.

W_{Hi} =weight fraction (expressed as a decimal) of organic HAP in chemical milling maskant i (less water) as applied during each 30-day period that is averaged.

D_{mi} =density (lb chemical milling maskant per gal coating) of chemical milling maskant i as applied during each 30-day period that is averaged.

V_{mi} =volume (gal) of chemical milling maskant i (less water) as applied during the 30-day period that is averaged.

M_{lw} =total volume (gal) of all chemical milling maskants (less water) as applied during each 30-day period that is averaged.

(m) *VOC content level determination—compliant chemical milling maskants.* For those uncontrolled chemical milling maskants complying with the chemical milling maskant VOC content limit specified in § 63.747(c)(2) without being averaged, the procedure specified in paragraphs (m)(1) and (m)(2) of this section shall be used to determine the mass of VOC emitted per volume of chemical milling maskant (less water and exempt solvents) as applied.

(1) Determine the mass of VOC emitted per unit volume of chemical milling maskant (lb/gal) (less water and exempt solvents) as applied, G_i , for each chemical milling maskant using the procedures specified in paragraphs (e)(1) and (e)(2) of this section.

(2)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating G_i , compliance shall be based, except as provided in paragraph (m)(2)(ii) of this section, upon the VOC content obtained using EPA Method 24.

(ii) If the VOC content of a chemical milling maskant obtained using EPA Method 24 would indicate noncompliance as determined under § 63.749(h)(3)(i), an owner or operator may elect to average the chemical milling maskant with other uncontrolled chemical milling maskants and (re)calculate G_a (using the procedure specified in paragraph (n) of this section), provided appropriate and sufficient records were maintained for all chemical milling maskants included in the average recalculation. The (re)calculated value of G_a for the averaged chemical milling maskants shall then be used to determine compliance.

(n) *VOC content level determination—averaged chemical milling maskants.* For those uncontrolled chemical milling maskants that are averaged together in order to comply with the chemical milling maskant VOC content limit specified in § 63.747(c)(2), the procedure specified in paragraphs (n)(1) through (n)(4) of this section shall be used to determine the monthly volume-weighted average mass of VOC emitted per volume of chemical milling maskant (less water and exempt solvents) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1) Determine the VOC content of each chemical milling maskant (less water and exempt solvents) as applied used during each 30-day period using the procedure specified in paragraph (f)(1) of this section.

(2)(i) Determine the individual volume of each chemical milling maskant applied in terms of total gallons (less water and exempt solvents) using the procedure specified in paragraph (f)(2) of this section, and

(ii) Calculate the total volume in gallons of all chemical milling maskants (less water and exempt solvents) as applied by summing the individual volumes of each chemical milling maskant (less water and exempt solvents) as applied.

(3) Calculate the volume-weighted average mass of VOC emitted per unit volume (lb/gal) of chemical milling maskant (less water and exempt solvents) as applied during each 30-day period using equation 23:

$$G_a = \frac{\sum_{i=1}^{n} (VOC)_{mi} V_{mi}}{M_{lwes}} \qquad \text{Eq. 23}$$

where:

G_a =volume-weighted average mass of VOC per unit volume of chemical milling maskant (lb/gal) (less water and exempt solvents) as applied during each 30-day period for those chemical milling maskants that are averaged.

n=number of chemical milling maskants being averaged.

$(VOC)_{mi}$ =VOC content (lb/gal) of chemical milling maskant i (less water and exempt solvents) as applied during the 30-day period that is averaged.

V_{mi} =volume (gal) of chemical milling maskant i (less water and exempt solvents) as applied during the 30-day period that is averaged.

M_{lwes} =total volume (gal) of all chemical milling maskants (less water and exempt solvents) as applied during each 30-day period that is averaged.

(4)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating G_a , recalculation of G_a is required using the new value. If more than one chemical milling maskant is involved, the recalculation shall be made once using all of the new values.

(ii) If recalculation is required, an owner or operator may elect to include in the recalculation of G_a uncontrolled chemical milling maskants that were not previously included provided appropriate and sufficient records were maintained for these other chemical milling maskants to allow daily recalculations.

(iii) The recalculated value of G_a under either paragraph (n)(4)(i) or (n)(4)(ii) of this section shall be used to determine compliance.

(o) *Inorganic HAP emissions—dry particulate filter certification requirements.* Dry particulate filters used to comply with § 63.745(g)(2) or § 63.746(b)(4) must be certified by the filter manufacturer or distributor, paint/depainting booth supplier, and/or the facility owner or operator using method 319 in appendix A of subpart A of this part, to meet or exceed the efficiency data points found in Tables 1 and 2, or 3 and 4 of § 63.745 for existing or new sources respectively.

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§ 63.751 Monitoring requirements.

(a) *Enclosed spray gun cleaners.* Each owner or operator using an enclosed spray gun cleaner under § 63.744(c)(1) shall visually inspect the seals and all other potential sources of leaks associated with each enclosed gun spray cleaner system at least once per month. Each inspection shall occur while the system is in operation.

(b) *Incinerators and carbon adsorbers—initial compliance demonstrations.* Each owner or operator subject to the requirements in this subpart must demonstrate initial compliance with the requirements of §§ 63.745(d), 63.746(c), and 63.747(d) of this subpart. Each owner or operator using a carbon adsorber to comply with the requirements in this subpart shall comply with the requirements specified in paragraphs (b)(1) through (7) of this section. Each owner or operator using an incinerator to comply with the requirements in this subpart shall comply with the requirements specified in paragraphs (b)(8) through (12) of this section.

(1) Except as allowed by paragraph (b)(2) or (b)(5) of this section, for each control device used to control organic HAP or VOC emissions, the owner or operator shall fulfill the requirements of paragraph (b)(1) (i) or (ii) of this section.

(i) The owner or operator shall establish as a site-specific operating parameter the outlet total HAP or VOC concentration that demonstrates compliance with § 63.745(d), § 63.746(c), or § 63.747(d) as appropriate; or

(ii) The owner or operator shall establish as the site-specific operating parameter the control device efficiency that demonstrates compliance with § 63.745(d), § 63.746(c), or § 63.747(d).

(iii) When a nonregenerative carbon adsorber is used to comply with § 63.745(d), § 63.746(c), or § 63.747(d), the site-specific operating parameter value may be established as part of the design evaluation used to demonstrate initial compliance. Otherwise, the site-specific operating parameter value shall be established during the initial performance test conducted according to the procedures of § 63.750(g).

(2) For each nonregenerative carbon adsorber, in lieu of meeting the requirements of § 63.751(b)(1), the owner or operator may establish as the site-specific operating parameter the carbon replacement time interval, as determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. The carbon replacement time interval shall be established either as part of the design evaluation to demonstrate initial compliance or during the initial performance test conducted according to the procedures in § 63.750(g) (1), (2), (3), or (4).

(3) Each owner or operator venting solvent HAP emissions from a source through a room, enclosure, or hood, to a control device to comply with § 63.745(d), § 63.746(c), or § 63.747(d) shall:

(i) Submit to the Administrator with the compliance status report required by § 63.9(h) of the General Provisions a plan that:

(A) Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained;

(B) Discusses why this parameter is appropriate for demonstrating ongoing compliance; and

(C) Identifies the specific monitoring procedures;

(ii) Set the operating parameter value, or range of values, that demonstrate compliance with § 63.745(d), § 63.746(c), or § 63.747(d), as appropriate; and

(iii) Conduct monitoring in accordance with the plan submitted to the Administrator unless comments received from the Administrator require an alternate monitoring scheme.

(4) Owners or operators subject to § 63.751(b) (1), (2), or (3) shall calculate the site-specific operating parameter value, or range of values, as the arithmetic average of the maximum and/or minimum operating parameter values, as appropriate, that demonstrate compliance with § 63.745(d), § 63.746(c), or § 63.747(d) during the multiple test runs required by § 63.750 (g)(2) and (g)(1).

(5) For each solvent recovery device used to comply with § 63.745(d), § 63.746(c), or § 63.747(d), in lieu of meeting the requirements of paragraph (b)(1) of this section, the results of the material balance calculation conducted in accordance with § 63.750(g)(1) may serve as the site-specific operating parameter that demonstrates compliance with § 63.745(d), § 63.746(c), or § 63.747(d).

(6) *Continuous compliance monitoring.* Following the date on which the initial compliance demonstration is completed, continuous compliance with § 63.745(d), § 63.746(c), or § 63.747(d) of this subpart shall be demonstrated as outlined in this paragraph.

(i) Each owner or operator of an affected source subject to § 63.745(d), § 63.746(c), or § 63.747(d) of this subpart shall monitor the applicable parameters specified in paragraph (b)(6)(ii), (b)(6)(iii), or (b)(6)(iv) of this section depending on the type of control technique used.

(ii) Compliance monitoring shall be subject to the following provisions:

(A) Except as allowed by paragraph (b)(6)(iii)(A)(*2*) of this section, all continuous emission monitors shall comply with performance specification (PS) 8 or 9 in 40 CFR part 60, appendix B, as appropriate depending on whether VOC or HAP concentration is being measured. The requirements in appendix F of 40 CFR part 60 shall also be followed. In conducting the quarterly audits required by appendix F, owners or operators shall challenge the monitors with compounds representative of the gaseous emission stream being controlled.

(B) If the effluent from multiple emission points are combined prior to being channeled to a common control device, the owner or operator is required only to monitor the common control device, not each emission point.

(iii) Owners or operators complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a control device and establishing a site-specific operating parameter in accordance with paragraph (b)(1) of this section shall fulfill the

requirements of paragraph (b)(6)(iii)(A) of this section and paragraph (b)(6)(iii)(B) or (C) of this section, as appropriate.

(A) The owner or operator shall install, calibrate, operate, and maintain a continuous emission monitor.

(*1*) The continuous emission monitor shall be used to measure continuously the total HAP or VOC concentration at both the inlet and the outlet whenever HAP from coating and paint stripping operations are vented to the control device, or when continuous compliance is demonstrated through a percent efficiency calculation; or

(*2*) For owners or operators using a nonregenerative carbon adsorber, in lieu of using continuous emission monitors as specified in paragraph (b)(6)(iii)(A)(*1*) of this section, the owner or operator may use a portable monitoring device to monitor total HAP or VOC concentration at the inlet and outlet or the outlet of the carbon adsorber as appropriate.

(*a*) The monitoring device shall be calibrated, operated, and maintained in accordance with the manufacturer's specifications.

(*b*) The monitoring device shall meet the requirements of part 60, appendix A, Method 21, sections 2, 3, 4.1, 4.2, and 4.4. The calibration gas shall either be representative of the compounds to be measured or shall be methane, and shall be at a concentration associated with 125% of the expected organic compound concentration level for the carbon adsorber outlet vent.

(*c*) The probe inlet of the monitoring device shall be placed at approximately the center of the carbon adsorber outlet vent. The probe shall be held there for at least 5 minutes during which flow into the carbon adsorber is expected to occur. The maximum reading during that period shall be used as the measurement.

(B) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a carbon adsorption system with a common exhaust stack for all of the carbon vessels, the owner or operator shall not operate the control device at an average control efficiency less than that required by § 63.745(d), § 63.746(c), or § 63.747(d) for three consecutive adsorption cycles.

(C) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a carbon adsorption system with individual exhaust stacks for each of the multiple carbon adsorber vessels, the owner or operator shall not operate any carbon adsorber vessel at an average control efficiency less than that required by § 63.745(d), § 63.746(c), or § 63.747(d) as calculated daily using a 7 to 30-day rolling average.

(D) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a nonregenerative carbon adsorber, in lieu of the requirements of paragraph (b)(6)(iii) (B) or (C) of this section, the owner or operator may monitor the VOC or HAP concentration of the adsorber exhaust daily, at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater, or at a frequency as determined by the owner or operator and approved by the Administrator.

(iv) Owners or operators complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a nonregenerative carbon adsorber and establishing a site-specific operating parameter for the carbon replacement time interval in accordance with paragraph (b)(2) shall replace the carbon in the carbon adsorber system with fresh carbon at the predetermined time interval as determined in the design evaluation.

(v) Owners or operators complying with § 63.745(d), § 63.746(c), or § 63.747(d) by capturing emissions through a room, enclosure, or hood shall install, calibrate, operate, and maintain the instrumentation necessary to measure continuously the site-specific operating parameter established in accordance with paragraph (b)(3) of this section whenever VOC and HAP from coating and stripper operations are vented through the capture device. The capture device shall not be operated at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with paragraph (b)(3) of this section for any 3-hour period.

(7) Owners or operators complying with paragraph (b)(4) or (b)(5) of this section shall calculate the site-specific operating parameter value as the arithmetic average of the minimum operating parameter values that demonstrate compliance with § 63.745(d)and § 63.747(d) during the three test runs required by § 63.750(h)(2)(iv).

(8) All temperature monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications. Every 3 months, facilities shall replace the temperature sensors or have the temperature sensors recalibrated. As an alternative, a facility may use a continuous emission monitoring system (CEMS) to verify that there has been no change in the destruction efficiency and effluent composition of the incinerator.

(9) Where an incinerator other than a catalytic incinerator is used, a thermocouple equipped with a continuous recorder shall be installed and continuously operated in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(10) Where a catalytic incinerator is used, thermocouples, each equipped with a continuous recorder, shall be installed and continuously operated in the gas stream immediately before and after the catalyst bed.

(11) For each incinerator other than a catalytic incinerator, each owner or operator shall establish during each performance test during which compliance is demonstrated, including the initial performance test, the minimum combustion temperature as a site-specific operating parameter. This minimum combustion temperature shall be the operating parameter value that demonstrates compliance with § 63.745(d) and § 63.747(d).

(12) For each catalytic incinerator, each owner or operator shall establish during each performance test during which compliance is demonstrated, including the initial performance test, the minimum gas temperature upstream of the catalyst bed and the minimum gas temperature difference across the catalyst bed as site-specific operating parameters. These minimum temperatures shall be the operating parameter values that demonstrate compliance with § 63.745(d) and § 63.747(d).

(c) *Dry particulate filter, HEPA filter, and waterwash systems—primer and topcoat application operations.* (1) Each owner or operator using a dry particulate filter system to meet the requirements of § 63.745(g)(2) shall, while primer or topcoat application operations are occurring, continuously monitor the pressure drop across the system and read and record the pressure drop once per shift following the recordkeeping requirements of § 63.752(d).

(2) Each owner or operator using a conventional waterwash system to meet the requirements of § 63.745(g)(2) shall, while primer or topcoat application operations are occurring, continuously monitor the water flow rate through the system and read and record the water flow rate once per shift following the recordkeeping requirements of § 63.752(d). Each owner or operator using a pumpless waterwash system to meet the requirements of § 63.745(g)(2) shall, while primer and topcoat application operations are occurring, measure and record the parameter(s) recommended by the booth manufacturer that indicate booth performance once per shift, following the recordkeeping requirements of § 63.752(d).

(d) *Particulate filters and waterwash booths—depainting operations.* Each owner or operator using a dry particulate filter or a conventional waterwash system in accordance with the requirements of § 63.746(b)(4) shall, while depainting operations are occurring, continuously monitor the pressure drop across the particulate filters or the water flow rate through the conventional waterwash system and read and record the pressure drop or the water flow rate once per shift following the recordkeeping requirements of § 63.752(e). Each owner or operator using a pumpless waterwash system to meet the requirements of § 63.746(b)(4) shall, while depainting operations are occurring, measure and record the parameter(s) recommended by the booth manufacturer that indicate booth performance once per shift, following the recordkeeping requirements of § 63.752(e).

(e) *Use of an alternative monitoring method* —(1) *General.* Until permission to use an alternative monitoring method has been granted by the Administrator under this paragraph, the owner or operator of an affected source shall remain subject to the requirements of this section.

(2) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring methods or procedures of this section including, but not limited to, the following:

(i) Alternative monitoring requirements when the affected source is infrequently operated; or

(ii) Alternative locations for installing continuous monitoring systems when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements; or

(iii) Alternatives to the American Society for Testing and Materials (ASTM) test methods or sampling procedures specified in this section.

(3) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, requirement, or procedure, the Administrator may require the use of a method, requirement, or procedure specified in this section. If the results of the specified and the alternative method, requirement, or procedure do not agree, the results obtained by the specified method, requirement, or procedure shall prevail.

(4)(i) *Request to use alternative monitoring method.* An owner or operator who wishes to use an alternative monitoring method shall submit an application to the Administrator as described in paragraph (e)(4)(ii) of this section. The application may be submitted at any time provided that the monitoring method is not used to demonstrate compliance with a relevant standard or other requirement. If the alternative monitoring method is to be used to demonstrate compliance with a relevant standard, the application shall be submitted not later than with the site-specific test plan required in § 63.7(c) (if requested) or with the site-specific performance evaluation plan (if requested), or at least 60 days before the performance evaluation is scheduled to begin.

(ii) The application shall contain a description of the proposed alternative monitoring system and information justifying the owner's or operator's request for an alternative monitoring method, such as the technical or economic infeasibility, or the impracticality, of the affected source using the required method.

(iii) The owner or operator may submit the information required in this paragraph well in advance of the submittal dates specified in paragraph (e)(4)(i) of this section to ensure a timely review by the Administrator in order to meet the compliance demonstration date specified in this subpart.

(5) *Approval of request to use alternative monitoring method.* (i) The Administrator will notify the owner or operator of his/her intention to deny approval of the request to use an alternative monitoring method within 60 calendar days after receipt of the original request and within 60 calendar days after receipt of any supplementary information that is submitted. If notification of intent to deny approval is not received within 60 calendar days, the alternative monitoring method is to be considered approved. Before disapproving any request to use an alternative monitoring method, the Administrator will notify the applicant of the Administrator's intent to disapprove the request together with:

(A) Notice of the information and findings on which the intended disapproval is based; and

(B) Notice of opportunity for the owner or operator to present additional information to the Administrator before final action on the request. At the time the Administrator notifies the applicant of his or her intention to disapprove the request, the Administrator will specify how much time the owner or operator will have after being notified of the intended disapproval to submit the additional information.

(ii) If the Administrator approves the use of an alternative monitoring method for an affected source under paragraph (e)(5)(i) of this section, the owner or operator of such source shall continue to use the alternative monitoring method until approval is received from the Administrator to use another monitoring method as allowed by paragraph (e) of this section.

(f) *Reduction of monitoring data.* (1) The data may be recorded in reduced or nonreduced form (e.g., parts per million (ppm) pollutant and % O_2 or nanograms per Joule (ng/J) of pollutant).

(2) All emission data shall be converted into units specified in this subpart for reporting purposes. After conversion into units specified in this subpart, the data may be rounded to the same number of significant digits as used in this subpart to specify the emission limit (e.g., rounded to the nearest 1% overall reduction efficiency).

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15023, Mar. 27, 1998; 63 FR 46534, Sept. 1, 1998; 65 FR 76945, Dec. 8, 2000]

§ 63.752 Recordkeeping requirements.

(a) *General.* Each owner or operator of a source subject to this subpart shall fulfill all recordkeeping requirements specified in § 63.10 (a), (b), (d), and (f).

(b) *Cleaning operation.* Each owner or operator of a new or existing cleaning operation subject to this subpart shall record the information specified in paragraphs (b)(1) through (b)(5) of this section, as appropriate.

(1) The name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent used for affected cleaning operations at the facility.

(2) For each cleaning solvent used in hand-wipe cleaning operations that complies with the composition requirements specified in § 63.744(b)(1) or for semi-aqueous cleaning solvents used for flush cleaning operations:

(i) The name of each cleaning solvent used;

(ii) All data and calculations that demonstrate that the cleaning solvent complies with one of the composition requirements; and

(iii) Annual records of the volume of each solvent used, as determined from facility purchase records or usage records.

(3) For each cleaning solvent used in hand-wipe cleaning operations that does not comply with the composition requirements in § 63.744(b)(1), but does comply with the vapor pressure requirement in § 63.744(b)(2):

(i) The name of each cleaning solvent used;

(ii) The composite vapor pressure of each cleaning solvent used;

(iii) All vapor pressure test results, if appropriate, data, and calculations used to determine the composite vapor pressure of each cleaning solvent; and

(iv) The amount (in gallons) of each cleaning solvent used each month at each operation.

(4) For each cleaning solvent used for the exempt hand-wipe cleaning operations specified in § 63.744(e) that does not conform to the vapor pressure or composition requirements of § 63.744(b):

(i) The identity and amount (in gallons) of each cleaning solvent used each month at each operation; and

(ii) A list of the processes set forth in § 63.744(e) to which the cleaning operation applies.

(5) A record of all leaks from enclosed spray gun cleaners identified pursuant to § 63.751(a) that includes for each leak found:

(i) Source identification;

(ii) Date leak was discovered; and

(iii) Date leak was repaired.

(c) *Primer and topcoat application operations—organic HAP and VOC.* Each owner or operator required to comply with the organic HAP and VOC content limits specified in § 63.745(c) shall record the information specified in paragraphs (c)(1) through (c)(6) of this section, as appropriate.

(1) The name and VOC content as received and as applied of each primer and topcoat used at the facility.

(2) For uncontrolled primers and topcoats that meet the organic HAP and VOC content limits in § 63.745(c)(1) through (c)(4) without averaging:

(i) The mass of organic HAP emitted per unit volume of coating as applied (less water) (H_i) and the mass of VOC emitted per unit volume of coating as applied (less water and exempt solvents) (G_i) for each coating formulation within each coating category used each month (as calculated using the procedures specified in § 63.750(c) and (e));

(ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the values of H_i and G_i ; and

(iii) The volume (gal) of each coating formulation within each coating category used each month.

(3) For “low HAP content” uncontrolled primers with organic HAP content less than or equal to 250 g/l (2.1 lb/gal) less water as applied and VOC content less than or equal to 250 g/l (2.1 lb/gal) less water and exempt solvents as applied:

(i) Annual purchase records of the total volume of each primer purchased; and

(ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the organic HAP and VOC content as applied. These records shall consist of the manufacturer's certification when the primer is applied as received, or the data and calculations used to determine H_i if not applied as received.

(4) For primers and topcoats complying with the organic HAP or VOC content level by averaging:

(i) The monthly volume-weighted average masses of organic HAP emitted per unit volume of coating as applied (less water) (H_a) and of VOC emitted per unit volume of coating as applied (less water and exempt solvents) (G_a) for all coatings (as determined by the procedures specified in § 63.750(d) and (f)); and

(ii) All data, calculations, and test results (including EPA Method 24 results) used to determine the values of H_a and G_a .

(5) For primers and topcoats that are controlled by a control device other than a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency;

(ii) If an incinerator other than a catalytic incinerator is used, continuous records of the firebox temperature recorded under § 63.751(b)(9) and all calculated 3-hour averages of the firebox temperature; and

(iii) If a catalytic incinerator is used, continuous records of the temperature recorded under § 63.751(b)(10) and all calculated 3-hour averages of the recorded temperatures.

(6) For primer and topcoats that are controlled by a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The length of the rolling material balance period and all data and calculations used for determining this rolling period. The record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered; or

(ii) For nonregenerative carbon adsorbers, the overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(d) *Primer and topcoat application operations—inorganic HAP emissions.* (1) Each owner or operator complying with § 63.745(g) for the control of inorganic HAP emissions from primer and topcoat application operations through the use of a dry particulate filter system or a HEPA filter system shall record the pressure drop across the operating system once each shift during which coating operations occur.

(2) Each owner or operator complying with § 63.745(g) through the use of a conventional waterwash system shall record the water flow rate through the operating system once each shift during which coating operations occur. Each owner or operator complying with § 63.745(g) through the use of a pumpless waterwash system shall record the parameter(s) recommended by the booth manufacturer that indicate the performance of the booth once each shift during which coating operations occur.

(3) This log shall include the acceptable limit(s) of pressure drop, water flow rate, or for the pumpless waterwash booth, the booth manufacturer recommended parameter(s) that indicate the booth performance, as applicable, as specified by the filter or booth manufacturer or in locally prepared operating procedures.

(e) *Depainting operations.* Each owner or operator subject to the depainting standards specified in § 63.746 shall record the information specified in paragraphs (e)(1) through (e)(7) of this section, as appropriate.

(1) *General.* For all chemical strippers used in the depainting operation:

(i) The name of each chemical stripper; and

(ii) Monthly volumes of each organic HAP containing chemical stripper used or monthly weight of organic HAP-material used for spot stripping and decal removal.

(2) For HAP-containing chemical strippers that are controlled by a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The length of the rolling material balance period and all data and calculations used for determining this rolling period. The record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered; or

(ii) For nonregenerative carbon adsorbers, the overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(3) For HAP-containing chemical strippers that are controlled by a control device other than a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency;

(ii) [Reserved]

(4) For each type of aircraft depainted at the facility, a listing of the parts, subassemblies, and assemblies normally removed from the aircraft before depainting. Prototype, test model or aircraft that exist in low numbers (i.e., less than 25 aircraft of any one type) are exempt from this requirement.

(5) *Non-chemical based equipment.* If dry media blasting equipment is used to comply with the organic HAP emission limit specified in § 63.746(b)(1):

(i) The names and types of non-chemical based equipment; and

(ii) For periods of malfunction,

(A) The non-chemical method or technique that malfunctioned;

(B) The date that the malfunction occurred;

(C) A description of the malfunction;

(D) The methods used to depaint aerospace vehicles during the malfunction period;

(E) The dates that these methods were begun and discontinued; and

(F) The date that the malfunction was corrected.

(6) *Spot stripping and decal removal.* For spot stripping and decal removal, the volume of organic HAP-containing chemical stripper or weight of organic HAP used, the annual average volume of organic HAP-containing chemical stripper or weight of organic HAP used per aircraft, the annual number of aircraft stripped, and all data and calculations used.

(7) *Inorganic HAP emissions.* Each owner or operator shall record the actual pressure drop across the particulate filters or the visual continuity of the water curtain and water flow rate for conventional waterwash systems once each shift in which the depainting process is in operation. For pumpless waterwash systems, the owner or operator shall record the parameter(s) recommended by the booth manufacturer that indicate the performance of the booth once per shift in which the depainting process is in operation. This log shall include the acceptable limit(s) of the pressure drop as specified by the filter manufacturer, the visual continuity of the water curtain and the water flow rate for conventional waterwash systems, or the recommended parameter(s) that indicate the booth performance for pumpless systems as specified by the booth manufacturer or in locally prepared operating procedures.

(f) *Chemical milling maskant application operations.* Each owner or operator seeking to comply with the organic HAP and VOC content limits for the chemical milling maskant application operation, as specified in § 63.747(c), or the control system requirements specified in § 63.747(d), shall record the information specified in paragraphs (f)(1) through (f)(4) of this section, as appropriate.

(1) For uncontrolled chemical milling maskants that meet the organic HAP or VOC content limit without averaging:

(i) The mass of organic HAP emitted per unit volume of chemical milling maskant as applied (less water) (H_i) and the mass of VOC emitted per unit volume of chemical milling maskant as applied (less water and exempt solvents) (G_i) for each chemical milling maskant formulation used each month (as determined by the procedures specified in § 63.750 (k) and (m));

(ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the values of H_i and G_i ; and

(iii) The volume (gal) of each chemical milling maskant formulation used each month.

(2) For chemical milling maskants complying with the organic HAP or VOC content level by averaging:

(i) The monthly volume-weighted average masses of organic HAP emitted per unit volume of chemical milling maskant as applied (less water) (H_a) and of VOC emitted per unit volume of chemical milling maskant as applied (less water and exempt solvents) (G_a) for all chemical milling maskants (as determined by the procedures specified in § 63.750 (l) and (n)); and

(ii) All data, calculations, and test results (including EPA Method 24 results) used to determine the values of H_a and G_a .

(3) For chemical milling maskants that are controlled by a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The length of the rolling material balance period and all data and calculations used for determining this rolling period. The record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered; or

(ii) For nonregenerative carbon adsorbers, the overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall

control efficiency. The record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(4) For chemical milling maskants that are controlled by a control device other than a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency;

(ii) If an incinerator other than a catalytic incinerator is used, continuous records of the firebox temperature recorded under § 63.751(b)(9) and all calculated 3-hour averages of the firebox temperature; and

(iii) If a catalytic incinerator is used, continuous records of the temperature recorded under § 63.751(b)(10) and all calculated 3-hour averages of the recorded temperatures.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15023, Mar. 27, 1998; 63 FR 46534, Sept. 1, 1998]

§ 63.753 Reporting requirements.

(a)(1) Except as provided in paragraphs (a)(2) and (a)(3) of this section, each owner or operator subject to this subpart shall fulfill the requirements contained in § 63.9(a) through (e) and (h) through (j), Notification requirements, and § 63.10(a), (b), (d), and (f), Recordkeeping and reporting requirements, of the General Provisions, 40 CFR part 63, subpart A, and that the initial notification for existing sources required in § 63.9(b)(2) shall be submitted not later than September 1, 1997. In addition to the requirements of § 63.9(h), the notification of compliance status shall include:

(i) Information detailing whether the source has operated within the specified ranges of its designated operating parameters.

(ii) For each coating line, where averaging will be used along with the types of quantities of coatings the facility expects to use in the first year of operation. Averaging scheme shall be approved by the Administrator or delegated State authority and shall be included as part of the facility's title V or part 70 permit.

(2) The initial notification for existing sources, required in § 63.9(b)(2) shall be submitted no later than September 1, 1997. For the purposes of this subpart, a title V or part 70 permit application may be used in lieu of the initial notification required under § 63.9(b)(2), provided the same information is contained in the permit application as required by § 63.9(b)(2), and the State to which the permit application has been submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the EPA. Permit applications shall be submitted by the same due dates as those specified for the initial notifications.

(3) For the purposes of this subpart, the Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment to a particular time period or postmark deadline submitted under § 63.9(i) within 30 calendar days of receiving sufficient information to evaluate the request, rather than 15 calendar days as provided for in § 63.9(i)(3).

(b) *Cleaning operation.* Each owner or operator of a cleaning operation subject to this subpart shall submit the following information:

(1) Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(i) Any instance where a noncompliant cleaning solvent is used for a non-exempt hand-wipe cleaning operation;

(ii) A list of any new cleaning solvents used for hand-wipe cleaning in the previous 6 months and, as appropriate, their composite vapor pressure or notification that they comply with the composition requirements specified in § 63.744(b)(1);

(iii) Any instance where a noncompliant spray gun cleaning method is used;

(iv) Any instance where a leaking enclosed spray gun cleaner remains unrepaired and in use for more than 15 days; and

(v) If the operations have been in compliance for the semiannual period, a statement that the cleaning operations have been in compliance with the applicable standards. Sources shall also submit a statement of compliance signed by a responsible company official certifying that the facility is in compliance with all applicable requirements.

(c) *Primer and topcoat application operations.* Each owner or operator of a primer or topcoat application operation subject to this subpart shall submit the following information:

(1) Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(i) For primers and topcoats where compliance is not being achieved through the use of averaging or a control device, each value of H_i and G_i , as recorded under § 63.752(c)(2)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.745(c);

(ii) For primers and topcoats where compliance is being achieved through the use of averaging, each value of H_a and G_a , as recorded under § 63.752(c)(4)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.745(c);

(iii) If incinerators are used to comply with the standards, all periods when the 3-hour average combustion temperature(s) is (are) less than the average combustion temperature(s) established under § 63.751(b) (11) or (12) during the most recent performance test during which compliance was demonstrated;

(iv) If a carbon adsorber is used;

(A) each rolling period when the overall control efficiency of the control system is calculated to be less than 81%, the initial material balance calculation, and any exceedances as demonstrated through the calculation; or,

(B) for nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.

(v) For control devices other than an incinerator or carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated;

(vi) All times when a primer or topcoat application operation was not immediately shut down when the pressure drop across a dry particulate filter or HEPA filter system, the water flow rate through a conventional waterwash system, or the recommended parameter(s) that indicate the booth performance for pumpless systems, as appropriate, was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures;

(vii) If the operations have been in compliance for the semiannual period, a statement that the operations have been in compliance with the applicable standards; and,

(2) Annual reports beginning 12 months after the date of the notification of compliance status listing the number of times the pressure drop or water flow rate for each dry filter or waterwash system, as applicable, was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures.

(d) *Depainting operation.* Each owner or operator of a depainting operation subject to this subpart shall submit the following information:

(1) Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(i) Any 24-hour period where organic HAP were emitted from the depainting of aerospace vehicles, other than from the exempt operations listed in § 63.746 (a), (b)(3), and (b)(5).

(ii) Any new chemical strippers used at the facility during the reporting period;

(iii) The organic HAP content of these new chemical strippers;

(iv) For each chemical stripper that undergoes reformulation, its organic HAP content;

(v) Any new non-chemical depainting technique in use at the facility since the notification of compliance status or any subsequent semiannual report was filed;

(vi) For periods of malfunctions:

(A) The non-chemical method or technique that malfunctioned;

(B) The date that the malfunction occurred;

(C) A description of the malfunction;

(D) The methods used to depaint aerospace vehicles during the malfunction period;

(E) The dates that these methods were begun and discontinued; and

(F) The date that the malfunction was corrected;

(vii) All periods where a nonchemical depainting operation subject to § 63.746(b)(2) and (b)(4) for the control of inorganic HAP emissions was not immediately shut down when the pressure drop, water flow rate, or recommended booth parameter(s) was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operational procedures;

(viii) A list of new and discontinued aircraft models depainted at the facility over the last 6 months and a list of the parts normally removed for depainting for each new aircraft model being depainted; and

(ix) If the depainting operation has been in compliance for the semiannual period, a statement signed by a responsible company official that the operation was in compliance with the applicable standards.

(2) Annual reports occurring every 12 months from the date of the notification of compliance status that identify:

(i) The average volume per aircraft of organic HAP-containing chemical strippers or weight of organic HAP used for spot stripping and decal removal operations if it exceeds the limits specified in § 63.746(b)(3); and

(ii) The number of times the pressure drop limit(s) for each filter system or the number of times the water flow rate limit(s) for each waterwash system were outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures.

(3) Where a control device is used to control organic HAP emissions, semiannual reports that identify:

(i) If a carbon adsorber is used,

(A) each rolling period when the overall control efficiency of the control system is calculated to be less than 81% for existing systems or less than 95% for new systems, the initial material balance calculation, and any exceedances as demonstrated through the calculation; or,

(B) for nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.

(ii) For control devices other than a carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated;

(iii) Descriptions of any control devices currently in use that were not listed in the notification of compliance status or any subsequent report.

(e) *Chemical milling maskant application operation.* Each owner or operator of a chemical milling maskant application operation subject to this subpart shall submit semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(1) For chemical milling maskants where compliance is not being achieved through the use of averaging or a control device, each value of H_i and G_i , as recorded under § 63.752(f)(1)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.747(c);

(2) For chemical milling maskants where compliance is being achieved through the use of averaging, each value of H_a and G_a , as recorded under § 63.752(f)(2)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.747(c);

(3) Where a control device is used,

(i) If incinerators are used to comply with the standards, all periods when the 3-hour average combustion temperature(s) is (are) less than the average combustion temperature(s) established under § 63.751(b) (11) or (12) during the most recent performance test during which compliance was demonstrated;

(ii) If a carbon adsorber is used,

(A) Each rolling period when the overall control efficiency of the control system is calculated to be less than 81%, the initial material balance calculation, and any exceedances as demonstrated through the calculation; or,

(B) For nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.

(iii) For control devices other than an incinerator or carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated;

(4) All chemical milling maskants currently in use that were not listed in the notification of compliance status or any other subsequent semiannual report;

(5) Descriptions of any control devices currently in use that were not listed in the notification of compliance status or any subsequent report; and

(6) If the operations have been in compliance for the semiannual period, a statement that the chemical milling maskant application operation has been in compliance with the applicable standards.

[60 FR 45956, Sept. 1, 1996; 61 FR 4903, Feb. 9, 1996, as amended at 61 FR 66227, Dec. 17, 1996; 63 FR 15023, Mar. 27, 1998; 63 FR 46535, Sept. 1, 1998]

§§ 63.754-63.758 [Reserved]

§ 63.759 Implementation and enforcement.

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the requirements in §§ 63.741, 63.743, 63.744(a)(3), (b) through (e), 63.745 through 63.748, and 63.649(a).

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f), as defined in § 63.90, and as required in this subpart.

(3) Approval of major alternatives to monitoring under § 63.8(f), as defined in § 63.90, and as required in this subpart.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f), as defined in § 63.90, and as required in this subpart.

[68 FR 37352, June 23, 2003]

Table 1 to Subpart GG of Part 63—General Provisions Applicability to Subpart GG

Reference	Applies to affected sources in subpart GG	Comment
63.1(a)(1)	Yes	
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	Yes	
63.1(a)(5)	No	Reserved.
63.1(a)(6)	Yes	
63.1(a)(7)	Yes	
63.1(a)(8)	Yes	
63.1(a)(9)	No	Reserved.
63.1(a)(10)	Yes	
63.1(a)(11)	Yes	
63.1(a)(12)	Yes	
63.1(a)(13)	Yes	
63.1(a)(14)	Yes	
63.1(b)(1)	Yes	
63.1(b)(2)	Yes	
63.1(b)(3)	Yes	
63.1(c)(1)	Yes	
63.1(c)(2)	Yes	Subpart GG does not apply to area sources.
63.1(c)(3)	No	Reserved.
63.1(c)(4)	Yes	
63.1(c)(5)	Yes	
63.1(d)	No	Reserved.
63.1(e)	Yes	
63.2	Yes	

Reference	Applies to affected sources in subpart GG	Comment
63.3	Yes	
63.4(a)(1)	Yes	
63.4(a)(2)	Yes	
63.4(a)(3)	Yes	
63.4(a)(4)	No	Reserved.
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	
63.5(a)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	Reserved.
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	
63.5(c)	No	Reserved.
63.5(d)(1)(i)	Yes	
63.5(d)(1)(ii)(A)-(H)	Yes	
63.5(d)(1)(ii)(I)	No	Reserved.
63.5(d)(1)(ii)(J)	Yes	
63.5(d)(1)(iii)	Yes	
63.5(d)(2)-(4)	Yes	
63.5(e)	Yes	
63.5(f)	Yes	
63.6(a)	Yes	
63.6(b)(1)-(5)	Yes	§ 63.749(a) specifies compliance dates for new sources.
63.6(b)(6)	No	Reserved.
63.6(b)(7)	Yes	
63.6(c)(1)	Yes	
63.6(c)(2)	No	The standards in subpart GG are promulgated under section 112(d) of the Act.
63.6(c)(3)-(4)	No	Reserved.
63.6(c)(5)	Yes	
63.6(d)	No	Reserved.
63.6(e)	Yes	63.743(b) includes additional provisions for the operation and maintenance plan.
63.6(f)	Yes	
63.6(g)	Yes	
63.6(h)	No	The standards in subpart GG do not include opacity standards.
63.6(i)(1)-(3)	Yes	
63.6(i)(4)(i)(A)	Yes	
63.6(i)(4)(i)(B)	No	§ 63.743(a)(4) specifies that requests for extension of compliance must be submitted no later than 120 days before an affected source's compliance date.
63.6(i)(4)(ii)	No	The standards in subpart GG are promulgated under section 112(d) of the Act.

Reference	Applies to affected sources in subpart GG	Comment
63.6(i)(5)-(12)	Yes	
63.6(i)(13)	Yes	
63.6(i)(14)	Yes	
63.6(i)(15)	No	Reserved.
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)(1)	Yes	
63.7(a)(2)(i)-(vi)	Yes	
63.7(a)(2)(vii)-(viii)	No	Reserved.
63.7(a)(2)(ix)	Yes	
63.7(a)(3)	Yes	
63.7(b)	Yes	
63.7(c)	Yes	
63.7(d)	Yes	
63.7(e)	Yes	
63.7(f)	Yes	
63.7(g)(1)	Yes	
63.7(g)(2)	No	Reserved.
63.7(g)(3)	Yes	
63.7(h)	Yes	
63.8(a)(1)-(2)	Yes	
63.8(a)(3)	No	Reserved.
63.8(a)(4)	Yes	
63.8(b)	Yes	
63.8(c)	Yes	
63.8(d)	No	
63.8(e)(1)-(4)	Yes	
63.8(e)(5)(i)	Yes	
63.8(e)(5)(ii)	No	The standards in subpart GG do not include opacity standards.
63.8(f)(1)	Yes	
63.8(f)(2)(i)-(vii)	Yes	
63.8(f)(2)(viii)	No	The standards in subpart GG do not include opacity standards.
63.8(f)(2)(ix)	Yes	
63.8(f)(3)-(6)	Yes	
63.8(g)	Yes	
63.9(a)	Yes	
63.9(b)(1)	Yes	
63.9(b)(2)	Yes	§ 63.753(a)(1) requires submittal of the initial notification at least 1 year prior to the compliance date; § 63.753(a)(2) allows a title V or part 70 permit application to be substituted for the initial notification in certain circumstances.
63.9(b)(3)	Yes	
63.9(b)(4)	Yes	
63.9(b)(5)	Yes	

Reference	Applies to affected sources in subpart GG	Comment
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	Yes	
63.9(f)	No	The standards in subpart GG do not include opacity standards.
63.9(g)(1)	No	
63.9(g)(2)	No	The standards in subpart GG do not include opacity standards.
63.9(g)(3)	No	
63.9(h)(1)-(3)	Yes	§ 63.753(a)(1) also specifies additional information to be included in the notification of compliance status.
63.9(h)(4)	No	Reserved.
63.9(h)(5)-(6)	Yes	
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	
63.10(b)	Yes	
63.10(c)(1)	No	
63.10(c)(2)-(4)	No	Reserved.
63.10(c)(5)-(8)	No	
63.10(c)(9)	No	Reserved.
63.10(c)(10)-(13)	No	
63.10(c)(14)	No	§ 63.8(d) does not apply to this subpart.
63.10(c)(15)	No	
63.10(d)(1)-(2)	Yes	
63.10(d)(3)	No	The standards in subpart GG do not include opacity standards.
63.10(d)(4)	Yes	
63.10(d)(5)	Yes	
63.(10)(e)(1)	No	
63.10(e)(2)(i)	No	
63.10(e)(2)(ii)	No	The standards in subpart GG do not include opacity standards.
63.10(e)(3)	No	
63.10(e)(4)	No	The standards in subpart GG do not include opacity standards.
63.10(f)	Yes	
63.11	Yes	
63.12	Yes	
63.13	Yes	
63.14	Yes	
63.15	Yes	

[63 FR 15024, Mar. 27, 1998]

Appendix A to Subpart GG of Part 63—Specialty Coating Definitions

Ablative coating —A coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

Adhesion promoter —A very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.

Adhesive bonding primer —A primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250 °F or below and primers with a design cure above 250 °F.

Aerosol coating —A hand-held, pressurized, nonrefillable container that expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.

Antichafe coating —A coating applied to areas of moving aerospace components that may rub during normal operations or installation.

Bearing coating —A coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

Bonding maskant —A temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.

Caulking and smoothing compounds —Semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

Chemical agent-resistant coating (CARC) —An exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

Clear coating —A transparent coating usually applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clearcoat refers to any transparent coating without regard to substrate.

Commercial exterior aerodynamic structure primer —A primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, and landing gear and doors, for the purpose of extended corrosion protection and enhanced adhesion.

Commercial interior adhesive —Materials used in the bonding of passenger cabin interior components. These components must meet the FAA fireworthiness requirements.

Compatible substrate primer —Includes two categories: compatible epoxy primer and adhesive primer. *Compatible epoxy primer* is primer that is compatible with the filled elastomeric coating and is epoxy based. The compatible substrate primer is an epoxy-polyamide primer used to promote adhesion of elastomeric coatings such as impact-resistant coatings. *Adhesive primer* is a coating that (1) inhibits corrosion and serves as a primer applied to bare metal surfaces or prior to adhesive application, or (2) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.

Corrosion prevention system —A coating system that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this category.

Critical use and line sealer maskant —A temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, high-strength steel, high-precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scribing operations (i.e. line sealer) are also included in this category.

Cryogenic flexible primer —A primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (−275 °F and below).

Cryoprotective coating —A coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or re-entry, and prevent ice formation.

Cyanoacrylate adhesive —A fast-setting, single component adhesive that cures at room temperature. Also known as "super glue."

Dry lubricative material —A coating consisting of lauric acid, cetyl alcohol, waxes, or other non-cross linked or resin-bound materials which act as a dry lubricant.

Electric or radiation-effect coating —A coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lightning strike protection, electromagnetic pulse (EMP) protection, and radar avoidance. Coatings that have been designated as "classified" by the Department of Defense are exempt.

Electrostatic discharge and electromagnetic interference (EMI) coating —A coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.

Elevated-temperature Skydrol-resistant commercial primer —A primer applied primarily to commercial aircraft (or commercial aircraft adapted for military use) that must withstand immersion in phosphate-ester (PE) hydraulic fluid (Skydrol 500b or equivalent) at the elevated temperature of 150 °F for 1,000 hours.

Epoxy polyamide topcoat —A coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.

Fire-resistant (interior) coating —For civilian aircraft, fire-resistant interior coatings are used on passenger cabin interior parts that are subject to the FAA fireworthiness requirements. For military aircraft, fire-resistant interior coatings are used on parts subject to the flammability requirements of MIL-STD-1630A and MIL-A-87721. For space applications, these coatings are used on parts subject to the flammability requirements of SE-R-0006 and SSP 30233.

Flexible primer —A primer that meets flexibility requirements such as those needed for adhesive bond primed fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between the fasteners, skin, and skin-to-skin joints on outer aircraft skins. This flexible bridge allows more topcoat flexibility around fasteners and decreases the chance of the topcoat cracking around the fasteners. The result is better corrosion resistance.

Flight test coating —A coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

Fuel tank adhesive —An adhesive used to bond components exposed to fuel and that must be compatible with fuel tank coatings.

Fuel tank coating —A coating applied to fuel tank components to inhibit corrosion and/or bacterial growth and to assure sealant adhesion in extreme environmental conditions.

High temperature coating —A coating designed to withstand temperatures of more than 350 °F.

Insulation covering —Material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.

Intermediate release coating —A thin coating applied beneath topcoats to assist in removing the topcoat in depainting operations and generally to allow the use of less hazardous depainting methods.

Lacquer —A clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resoluble in their original solvent.

Metalized epoxy coating —A coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

Mold release —A coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

Nonstructural adhesive —An adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.

Optical anti-reflection coating —A coating with a low reflectance in the infrared and visible wavelength ranges, which is used for anti-reflection on or near optical and laser hardware.

Part marking coating —Coatings or inks used to make identifying markings on materials, components, and/or assemblies. These markings may be either permanent or temporary.

Pretreatment coating —An organic coating that contains at least 0.5 percent acids by weight and is applied directly to metal or composite surfaces to provide surface etching, corrosion resistance, adhesion, and ease of stripping.

Rain erosion-resistant coating— A coating or coating system used to protect the leading edges of parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc. against erosion caused by rain impact during flight.

Rocket motor bonding adhesive— An adhesive used in rocket motor bonding applications.

Rocket motor nozzle coating— A catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.

Rubber-based adhesive— Quick setting contact cements that provide a strong, yet flexible, bond between two mating surfaces that may be of dissimilar materials.

Scale inhibitor— A coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

Screen print ink— Inks used in screen printing processes during fabrication of decorative laminates and decals.

Seal coat maskant— An overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.

Sealant— A material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components. There are two categories of sealants: extrudable/rollable/brushable sealants and sprayable sealants.

Silicone insulation material— Insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not “sacrificial.”

Solid film lubricant— A very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.

Specialized function coatings— Coatings that fulfill extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty Coating categories.

Structural autoclavable adhesive— An adhesive used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.

Structural nonautoclavable adhesive— An adhesive cured under ambient conditions that is used to bond load-carrying aerospace components or for other critical functions, such as nonstructural bonding in the proximity of engines.

Temporary protective coating— A coating applied to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions. Coatings that provide this type of protection from chemical processing are not included in this category.

Thermal control coating— Coatings formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.

Touch-up and Repair Coating— A coating used to cover minor coating imperfections appearing after the main coating operation.

Wet fastener installation coating— A primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

Wing coating— A corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

[63 FR 15026, Mar. 27, 1998]

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for an
Administrative Part 70 Operating Permit Renewal

Source Background and Description

Source Name:	AAR Aircraft Services, Indianapolis
Source Location:	2825 West Perimeter Road, Indianapolis, IN 46241
County:	Marion County, Decatur and Wayne Townships
SIC Code:	4581 (Airports, Flying Fields, and Services)
Permit Renewal No.:	T 097-33261-00559
Permit Reviewer:	David Matousek

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from AAR Aircraft Services, Indianapolis relating to the operation of a stationary aerospace vehicle maintenance center. On May 30, 2013, AAR Aircraft Services, Indianapolis submitted an application to the OAQ requesting to renew its operating permit. AAR Aircraft Services, Indianapolis was issued its first Administrative Part 70 Operating Permit Renewal on February 18, 2009.

Source Definition

The source definition from the Administrative Part 70 Operating Permit Renewal was incorporated into the permit as follows:

This collocated airfield, aerospace vehicle maintenance center and central energy plant source consists of five (5) plants:

(a) Plant 1, Indianapolis Airport Authority (097-00156), is located at 2825 West Perimeter Road, Indianapolis, Indiana 46241 and 7800 Col. H. Weir Cook Memorial Drive (and various collocated addresses), Indianapolis, Indiana 46241;

(b) Plant 2, Johnson Melloh Solutions - IMC Central Energy Plant (097-00586), is located at 2745 South Hoffman Road, Suite 504, Indianapolis, Indiana 46241;

(c) Plant 3, AAR Aircraft Services, Indianapolis (097-00559), is located at 2825 West Perimeter Road, Indianapolis, Indiana 46241;

(d) Plant 5, Chautauqua Airlines (097-00668), is located at 2745 South Hoffman Road, Dock 67, Hangar 7A-7B, Indianapolis, IN 46241; and

(e) Plant 6, ASIG Aircraft Services International Group (097-00667), is located at 2050 Hoffman Road, Indianapolis, IN 46241.

These plants are located on one or more contiguous or adjacent properties, have the same two digit SIC code and are under common control, therefore they are considered one (1) major source, as defined by 326 IAC 2-7-1(22).

A Part 70 Operating Permit will be issued to the Indianapolis Airport Authority (097-00156) as the primary source, and Administrative Part 70 Operating Permits will be issued to Johnson Melloh Solutions – IMC Central Energy Plant (097-00586), AAR Aircraft Services, Indianapolis (097-00559), Chautauqua Airlines (097-00668) and ASIG Aircraft Services International Group (097-00667) solely for administrative purposes.

The source was initially separated into three (3) plants consisting of the Indianapolis Airport Authority (097-00156), AAR Aircraft Services, Indianapolis (097-00559) and Indianapolis Diversified Machining, Inc. (097-00560) under administrative amendment number 097-21243-00156, administrative amendment number 097-21245-00559, and administrative amendment number 097-21325-00560, all issued on October 14, 2005.

The source was reorganized into four (4) plants consisting of the Indianapolis Airport Authority (097-00156), BHMM Energy Services, LLC (097-00586), AAR Aircraft Services (097-00559), and Indianapolis Diversified Machining, Inc. (097-00560) under administrative amendment number 097-23165-00156, administrative amendment number 097-22919-00586, both issued on November 30, 2006, minor source modification number 097-25415-00559, issued on March 3, 2008, and Administrative Part 70 Operating Permit Renewal number T 097-25296-00560, issued on December 31, 2008.

The source was reorganized into six (6) plants consisting of the Indianapolis Airport Authority (097-00156), BHMM Energy Services, LLC (097-00586), AAR Aircraft Services (097-00559), Indianapolis Diversified Machining, Inc. (097-00560), Chautauqua Airlines (097-00668) and Skytanking (now ASIG Aircraft Services International Group) (097-00667) under administrative amendment number 097-25348-00156, issued on July 7, 2010, significant permit modification number 097-28213-00559, issued on March 30, 2010, and administrative amendment number 097-28370-00668, issued on July 9, 2010. Indianapolis Diversified Machining, Inc. had its permit revoked under 097-29631-00560 on September 9, 2010 and the new source definition was never incorporated into the BHMM Energy Services, LLC permit because the equipment was moved into the AAR permit.

Finally, the source was reorganized into five (5) plants consisting of the Indianapolis Airport Authority (097-00156), Johnson Melloh Solutions (097-00586), AAR Aircraft Services (097-00559), Chautauqua Airlines (097-00668) and Skytanking (now ASIG Aircraft Services International Group) (097-00667) under Part 70 Operating Permit Renewal number 097-25348-00156, issued on July 7, 2010, significant permit modification number 097-28213-00559, issued on March 30, 2010, Administrative Part 70 Operating Permit number 097-28370, issued on July 9, 2010, and 097-28369-00667, issued on July 8, 2010. On October 6, 2014, a renewal application was received from Skytanking requesting a change in ownership from Skytanking to ASIG Aircraft Services International Group. The current source description has been incorporated into the current Administrative Part 70 Operating Permit Renewal for AAR Aircraft Services, Indianapolis.

Permitted Emission Units and Pollution Control Equipment

This stationary source, located at 2825 West Perimeter Road, Indianapolis, Indiana 46241 consists of the following emission units and pollution control devices:

(a) Four (4) service hangars with activities relating to the coating of aircraft parts identified as emission unit 013, service hangars 1, 2, 3, and 5 are used for routine and nonroutine maintenance, with paint booths using high volume, low pressure (HVLP) spray application systems. The table below summarizes the startup dates for each hangar:

Hangar	Date Operation Began
Hangar 1A/1B	March 27, 1994
Hangar 2A/2B	December 13, 1994
Hangar 3A/3B	February 15, 1995
Hangar 5A/5B	September 1, 1995

[Under 40 CFR 63, Subpart GG, emission unit 013 is considered an existing affected unit.] [326 IAC 8-1-6]

(b) One (1) surface coating operation, identified as emission unit P-2, for surface coating the exterior of aerospace vehicles. Emission unit P-2 is located in Hangar 5 but is separate from emission unit 013. Emission unit P-2 utilizes high volume, low pressure (HVLP) spray application systems and is equipped with dry filters for particulate overspray control. Emission unit P-2 includes the use of surface coating stripper solvents for depainting operations that do not contain Hazardous Air Pollutants (HAPs). Emission unit P-2 exhausts at twenty (20) roof vents identified as Stack/Vent P-2-1 through Stack Vent P-2-20. The surface coating of the exterior of aerospace vehicles also includes insignificant natural gas fired make-up air heating units with a combined maximum heat input rate of 36.0 million Btu per hour identified as emission unit B-1. Emission unit P-2 and emission unit B-1 were each approved to construct in 2008. [Under 40 CFR 63, Subpart GG, emission unit P-2 is considered an existing affected unit.]

(c) Painting and mixing operations including:

(1) Two (2) paint booths, located in the Composite Shop, identified as emission unit 017, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 017a and 017b, installed in 1995. Under 40 CFR Part 63, Subpart GG, emission unit 017 is considered an affected facility.

(2) Two (2) paint booths, located in the Machine Shop and the Interior Shop (Back Shop), respectively, identified as emission unit 018, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 018a and 018b, installed in 2000 and 2001, respectively. Under 40 CFR Part 63, Subpart GG, emission unit 018 is considered an affected facility.

(d) One (1) ablative coating operation, approved in 2011 for construction, with a nominal throughput of three (3) thrust reversers per day, using spray gun and hand application, equipped with dry filters, equipped with one (1) insignificant propane AMU Heat & Cure Oven, with a maximum heat input capacity of 2.5 MMBtu/hr.

Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit

No emission units have been constructed and/or operated without a permit at this plant.

Emission Units and Pollution Control Equipment Removed From the Source

No emission units have been removed from service from this plant.

Insignificant Activities

This stationary source, located at Plant 3 at 2825 West Perimeter Road, Indianapolis, Indiana 46241 also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

(a) The following degreasing operations that do not individually exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.

(1) Seven (7) parts cleaners. [326 IAC 8-3-2] [326 IAC 8-3-8]

(b) The following grinding and machining operations located in Hangar 1, 2, 3, or 5 and controlled with fabric filters, scrubbers, mist collectors, wet collectors, electrostatic precipitators, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations with uncontrolled potential to emit of less than five (5) pounds of PM10 per hour and less than twenty five (25) pounds of PM10 per day.

(1) Eight (8) Grit Blast Cabinets. [326 IAC 6.5-1-2(a)]
(2) One (1) Bead Blast Cabinet [326 IAC 6.5-1-2(a)]

(c) The following activities which have potential emissions less than significance thresholds listed under 326 IAC 2-7-1(21):

(1) The following emission units located in Hangar 1, 2, 3, or 5 and in the Back Shops with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year:

(A) Touchup Painting Booths. [326 IAC 6.5-1-2(h)]

(2) The following emission units located in Hangar 1, 2, 3, or 5 and in the Back Shops with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year and equipped with a Central Vacuum system baghouse:

(A) Downdraft Benches [326 IAC 6.5-1-2(a)]
(B) ECB Booth [326 IAC 6.5-1-2(a)]
(C) Fugitives (Cleaning) [326 IAC 6.5-1-2(a)]
(D) Sanding Benches [326 IAC 6.5-1-2(a)]

(d) The following equipment located in the Back Shops related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6.5-1-2(a)]

(e) Trimmers located in the Back Shops that do not produce fugitive emissions and that are equipped with a dust collector or trim material recovery device such as a bag filter or cyclone. [326 IAC 6.5-1-2(a)]

(f) The following three emission units located in the Sheet Metal Shop and Composite Shop with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year with emissions directed to a Central Vacuum system baghouse:

(1) Cleaning Room. [326 IAC 6.5-1-2(a)]
(2) Dinol Room. [326 IAC 6.5-1-2(a)]
(3) Fugitives (Cleaning). [326 IAC 6.5-1-2(a)]

(g) The following two emission units located in the Sidewall/Ceiling Shop of the Interior Shop with potential VOC emissions less than 3 pounds per hour, potential PM emissions less than 5 pounds per hour and potential HAP emissions less than 1 ton per year:

(1) Drawdown Bench for Vacuum mold. [326 IAC 6.5-1-2(a)]
(2) Floorboard Router. [326 IAC 6.5-1-2(a)]

(h) Cleaners and solvents characterized as having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38°C (100°F) or having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20°C (68°F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months. Cleaning operations include hand wiping and spray gun cleaning. These activities are located in Hangar 1, 2, 3, and 5, emission unit P-2 and in the Back Shops. Potential VOC emissions are less than 3 pounds per hour and potential HAP emissions are less than 1 ton per year. [40 CFR 63, Subpart GG][326 IAC 20-15]

Existing Approvals

Since the issuance of the Administrative Part 70 Operating Permit Renewal number 097-25347-00559 on February 18, 2009, the source has constructed or has been operating under the following additional approvals:

(a) Administrative Amendment No. 097-27698-00559, issued on April 6, 2009;

(b) Significant Permit Modification No. 097-28213-00559, issued on March 30, 2010;

(c) Significant Permit Modification No. 097-29032-00559, issued on July 27, 2010;

(d) Minor Source Modification No. 097-30785-00559, issued on November 4, 2011; and

(e) Significant Permit Modification No. 097-30790-00559, issued on November 23, 2011.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Enforcement Issue

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in Marion County, Decatur and Wayne Townships.

Pollutant	Designation
SO_2	Non-attainment effective October 4, 2013, for the Center Township, Perry Township, and Wayne Township. Better than national standards for the remainder of the county.
CO	Attainment effective February 18, 2000, for the part of the city of Indianapolis bounded by 11th Street on the north; Capitol Avenue on the west; Georgia Street on the south; and Delaware Street on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of Indianapolis and Marion County.
O_3	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.[1]
$PM_{2.5}$	Attainment effective July 11, 2013, 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]Attainment effective October 18, 2000, for the 1-hour ozone standard for the Indianapolis area, including Marion County, and is a maintenance area for the 1-hour ozone National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51 , Subpart X*. The 1-hour designation 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. Marion 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) $PM_{2.5}$

Marion County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) SO_2

U.S. EPA, in the Federal Register Notice 78 FR 47191 dated August 5, 2013, has designated Marion County, Wayne Township as nonattainment for SO_2. Therefore, SO_2 emissions were reviewed pursuant to the requirements of Emission Offset, 326 IAC 2-3.

(e) Other Criteria Pollutants
Marion County has been classified as attainment or unclassifiable in Indiana for CO, PM_{10}, NO_2 and lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

This source contains a nested source (located at Plant 2, Johnson Melloh Solutions - IMC Central Energy Plant (097-00586)) consisting of a combination of fossil fuel-fired boilers totaling more than 250 MMBtu/hr or more heat input capacity. The nested source is considered one of the 28 source categories, as specified in 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7. Therefore, fugitive emissions from the nested source are counted toward the determination of PSD, Emission Offset (EO), and Part 70 Permit applicability.

The remaining operations at the source are not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7. However, there is an applicable New Source Performance Standard that was in effect on August 7, 1980, therefore fugitive emissions, from the affected facilities to which the New Source Performance Standard is applicable, are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability. Three (3) jet fuel storage tanks installed in 1978 and subject to 40 CFR 60, Subpart K, and located at the Indianapolis Airport Authority belong to a source category subject to a pre-1980 NSPS and all fugitive emission associated with these tanks are counted toward the determination of PSD, EO, and Part 70 Permit applicability.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the entire source (five (5) plants consisting of the Indianapolis Airport Authority (097-00156), Johnson Melloh Solutions (097-00586), AAR Aircraft Services, Chautauqua Airlines (097-00668), and ASIG Aircraft Services International Group (097-00667).

Unrestricted Potential Emissions	
Pollutant	**Entire Source (TPY)**
PM	88.43
PM_{10}	100.05
$PM_{2.5}$	100.05
SO_2	365.47
NO_x	368.16
VOC	163.51
CO	196.53
Single HAP (Toluene)	7.17
Total HAP	16.31

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

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) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM_{10}, $PM_{2.5}$, SO_2, NO_x, VOC and CO are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7 and will be issued a Part 70 Operating Permit Renewal.

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, because the source met the following:

(a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.

(b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any new control equipment is considered federally enforceable only after issuance of this Part 70 permit renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Collocated Sources:	**Permit Number**	**Address - Indianapolis, Indiana 46241**
Indianapolis Airport Authority (IAA)	T097-25348-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Dr.;
Johnson Melloh Solutions - IMC Central (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504;
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road;
Chautauqua Airlines (CHA)	T097-28370-00668	2745 South Hoffman Road, Dock 67, Hangar 7A-7B; and
ASIG Aircraft Services International Group (ASIG)	T097-28369-00667	2050 South Hoffman Road; Indianapolis, Indiana 46241

Potential to Emit - Nested Boilers (TPY) - One of 28 Source Categories

Process / Emission Unit	**Location**	**PM**	**PM_{10}**	***$PM_{2.5}$**	**SO_2**	**VOC**	**CO**	**NO_x**
IMCCEP Boiler #1	JMS	6.05	14.07	14.07	86.22	6.66	85.90	83.20
IMCCEP Boiler #2	JMS							
IMCCEP Boiler #3	JMS							
IMCCEP Boiler #4	JMS							
Total for Nested Boilers		**6.05**	**14.07**	**14.07**	**86.22**	**6.66**	**85.90**	**83.20**
PSD Major Source Thresholds		**100**	**100**	**100**	**---**	**100**	**100**	**100**
Emission Offset/Nonattainment NSR Major Source Thresholds		**NA**	**NA**	**NA**	**100**	**NA**	**NA**	**NA**

* Direct $PM_{2.5}$

Potential to Emit - Total Collocated Source (TPY) - Not One of 28 Source Categories								
Source Process / Emission Unit	**Location**	**PM[(b)]**	**PM_{10}**	**$PM_{2.5}$[(a)]**	**SO_2**	**VOC**	**CO**	**NO_x**
Total for Nested Boilers	JMS	6.05	14.07	14.07	86.22	6.66	85.90	83.20
Emergency Generator EU-13	IAA	0.49	0.22	0.22	1.33	0.39	10.29	8.36
Emergency Generator EU-14	IAA	0.49	0.22	0.22	1.33	0.39	10.29	8.36
Tank A	IAA	0.00	0.00	0.00	0.00	0.36	0.00	0.00
Emergency Generator EU-15	IAA	0.19	0.08	0.08	0.51	0.15	3.93	3.19
Emergency Generator EU-16	IAA	0.33	0.15	0.15	0.91	0.26	6.99	5.68
Emergency Generator EU-18	IAA	0.34	0.15	0.15	0.93	0.27	7.14	5.81
Emergency Generator EU-21	IAA	0.07	0.07	0.07	0.07	0.08	0.22	0.51
Emergency Generator EU-500	IAA	0.18	0.08	0.08	0.50	0.15	3.88	3.16
Degreasing	IAA	0.14	0.14	0.14	0.00	2.38	0.00	0.00
IAA Generators < 600 hp	IAA	0.30	0.30	0.30	0.28	0.00	0.91	4.24
IAA Generator Electric Vault	IAA	0.13	0.08	0.08	0.46	0.13	1.03	4.50
IAA Generator Eagle Hub	IAA	0.35	0.20	0.20	1.23	0.36	2.78	7.70
IAA Boilers < 100 MMBtu/hr	IAA	0.11	0.45	0.45	0.04	0.32	4.92	5.86
Boiler 23	IAA	0.02	0.10	0.10	0.01	0.07	1.10	1.31
Emergency Generator EU-24	IAA	0.13	0.08	0.08	0.76	0.13	1.04	2.45
IAA Natural Gas Heaters and Boiler	IAA	0.20	0.79	0.79	0.06	0.57	8.68	10.34
Emergency Generators EU-25/26	IAA	0.47	0.47	0.47	0.44	0.54	1.43	6.63
JMS Generators < 600 hp	JMS	1.30	1.30	1.30	1.22	1.51	3.99	18.52
JMS Generators > 600 hp	JMS	0.79	0.45	0.45	2.74	0.80	6.21	27.09
Ablative Coating Operation	AAR	5.25	5.25	5.25	0.00	25.00	0.00	0.00
AMU Heat and Cure Oven	AAR	0.02	0.08	0.08	0.01	0.06	0.92	1.10
Surface Coating P-2	AAR	0.92	0.92	0.92	0.00	25.00	0.00	0.00
NG Make-up Air Heating Unit B-1	AAR	0.30	1.20	1.20	0.09	0.87	13.25	15.77
Surface Coating EU-13/17/18	AAR	21.61	21.61	21.61	0.00	94.77	0.00	0.00
Chautauqua Airlines Emissions	CHA	0.00	0.00	0.00	0.00	negligible	0.00	0.00
ASIG Aircraft Services International Group : Generators > 600 hp	SKT	0.28	0.13	0.13	0.76	0.22	5.87	4.77
ASIG Aircraft Services International Group: Tanks	SKT	0.00	0.00	0.00	0.00	0.70	0.00	0.00
Total PTE of Entire Source		**40.47**	**48.60**	**48.60**	**99.90**	**162.13**	**180.78**	**228.55**
Emission Offset/NA-NSR Major Source Thresholds		**NA**	**NA**	**NA**	**100**	**NA**	**NA**	**NA**
PSD Major Source Thresholds		**250**	**250**	**250**	**---**	**250**	**250**	**250**

(a) $PM_{2.5}$ is direct $PM_{2.5}$.
(b) Under the Part 70 Permit program (40 CFR 70), PM_{10} and $PM_{2.5}$, not particulate matter (PM), are each considered as a regulated air pollutant.

HAP Emissions after Issuance	
Toluene	**7.13**
Hexane	2.80
Methyl Isobutyl Ketone	1.91
Xylene	1.64
Methyl Chloroform	0.95
Chromium	0.52
Methylene Chloride	0.41
Formaldehyde	0.24
Ethylbenzene	0.09
Other Minor HAPs	0.18
Total HAP	**15.87**

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, excluding the nested source, is not a major stationary source, under PSD (326 IAC 2-2), because no PSD regulated pollutant, is emitted at a rate of two hundred fifty (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) The existing nested source is not a major stationary source, under PSD (326 IAC 2-2), because no PSD regulated pollutant is emitted at a rate of one hundred (100) tons per year or more and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(c) This existing source is not a major stationary source under Emission Offset (326 IAC 2-3) because no nonattainment regulated pollutant is emitted at a rate of 100 tons per year or more.

(d) This existing source is not a major source of HAPs, as defined in 40 CFR 63.2, because HAPs emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Federal Rule Applicability

CAM:

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each existing pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the 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.

No emission unit located at AAR Aircraft Services, Indianapolis has the potential to emit before controls greater than the major source threshold for any pollutant. Based on this evaluation, the requirements of 40 CFR Part 64, CAM are not applicable to any of the existing units as part of this Part 70 Administrative Permit Renewal.

NSPS Requirements

(a) **40 CFR 60, Subpart TTT – Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines**: This subpart applies to each spray booth in which plastic parts used in the manufacture of business machines receive prime coats, color coats, or touch-up coats for which construction, modification, or reconstruction begins after January 8, 1986. Business machines are devices that use electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission. These devices are normally classified under the following SIC codes: 3572, 3573, 3574, 3661, 3579 and 3861. AAR Aircraft Services, Indianapolis operates under the SIC code 4581 and does not surface coat plastic parts used on business machines. Therefore, the requirements of 40 CFR 60, Subpart TTT (326 IAC 12) are not included in this Part 70 Operating Permit.

(b) **40 CFR 60, Subpart VVV – Standards of Performance for Polymeric Coating of Supporting Substrates Facilities**: This subpart applies to each coating operation and any onsite coating mix preparation equipment used to prepare for the polymeric coating of supporting substrates. Polymeric coating of supporting substrates means a web coating process that applies elastomers, polymers, or prepolymers to a supporting web other than paper, plastic film, metallic foil or metal coil. AAR Aircraft Services, Indianapolis does not use a web coating process to apply elastomers, polymers, or prepolymers. Therefore, the requirements of 40 CFR 60, Subpart VVV (326 IAC 12) are not included in this Part 70 Operating Permit.

NESHAP Requirements

(c) **40 CFR 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning**: This subpart applies to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform, or any combination of these halogenated HAP solvents, in a total concentration greater than 5% by weight, as a cleaning and/or drying agent. AAR Aircraft

Services, Indianapolis does not use any of the listed halogenated cleaning solvents. Therefore, the requirements of 40 CFR 63, Subpart T (326 IAC 20-6) are not included in this Part 70 Operating Permit.

(d) **40 CFR 63, Subpart GG – National Emission Standards for Aerospace Manufacturing and Rework Facilities**: This subpart applies to facilities that are engaged, either in part or in whole, in the manufacture or rework of commercial, civil, or military aerospace vehicles or components that are major sources of hazardous air pollutants (HAPs). This source is an area source of HAP; however, the potential to emit HAP at the time of rule promulgation was assumed by a U.S. EPA determination to be greater than major source thresholds. Therefore, based on EPA's "Once in Always In Policy" (OIAI Policy), the facilities at this source are still subject to the MACT standards under 40 CFR Part 63 (NESHAP), Subpart GG, because the source was considered a major source for HAPs on the "first compliance date" of NESHAP Subpart GG (December 7, 1998) and are required to comply permanently with the MACT standard (i.e., "Once in Always In").

For additional information on EPA's "Once in Always In Policy" (OIAI Policy), please refer to the EPA memo entitled "Potential to Emit for MACT Standards - Guidance on Timing Issues", May 16, 1995. This memo can be found at the following website: http://www.epa.gov/region07/air/title5/t5memos/pteguid.pdf

Therefore, this source is still subject to the National Emission Standards for Hazardous Air Pollutants for Aerospace Manufacturing and Rework Facilities (40 CFR Part 63, Subpart GG), which is incorporated by reference as 326 IAC 20-15. The activities subject to this subpart are limited to the manufacture or rework of aerospace vehicles or components. Affected sources include: each cleaning operation, each primer application operation, each topcoat application operation, each chemical milling maskant application operation, each waste storage and handling operation, and each spray booth or hangar that contains a primer or topcoat application operation subject to 40 CFR 63.745(g) or a depainting operation subject to 40 CFR 63.746(b)(4). The following operations are subject to 40 CFR 63, Subpart GG:

(1) Four (4) service hangars with activities relating to the coating of aircraft parts identified as emission unit 013, service hangars 1, 2, 3, and 5 are used for routine and nonroutine maintenance, with paint booths using high volume, low pressure (HVLP) spray application systems. The table below summarizes the startup dates for each hangar:

Hangar	Date Operation Began
Hangar 1A/1B	March 27, 1994
Hangar 2A/2B	December 13, 1994
Hangar 3A/3B	February 15, 1995
Hangar 5A/5B	September 1, 1995

[Under 40 CFR 63, Subpart GG, emission unit 013 is considered an existing affected unit.]
[326 IAC 8-1-6]

(2) One (1) surface coating operation, identified as emission unit P-2, for surface coating the exterior of aerospace vehicles. Emission unit P-2 is located in Hangar 5 but is separate from emission unit 013. Emission unit P-2 utilizes high volume, low pressure (HVLP) spray application systems and is equipped with dry filters for particulate overspray control. Emission unit P-2 includes the use of surface coating stripper solvents for depainting operations that do not contain Hazardous Air Pollutants (HAPs). Emission unit P-2 exhausts at twenty (20) roof vents identified as Stack/Vent P-2-1 through Stack Vent P-2-20. The surface coating of the exterior of aerospace vehicles also includes insignificant natural gas fired make-up air heating units with a combined maximum heat input rate of 36.0 million Btu per hour identified as emission unit B-1. Emission unit P-2 and emission unit B-1 were each approved to construct in 2008. [Under 40 CFR 63, Subpart GG, emission unit P-2 is considered an existing affected unit.]

(3) Painting and mixing operations including:

(i) Two (2) paint booths, located in the Composite Shop, identified as emission unit 017, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 017a and 017b, installed in 1995. Under 40 CFR Part 63, Subpart GG, emission unit 017 is considered an affected facility.

(ii) Two (2) paint booths, located in the Machine Shop and the Interior Shop (Back Shop), respectively, identified as emission unit 018, using high volume low pressure (HVLP) spray application systems, with dry filters for particulate matter control, exhausting to two stacks 018a and 018b, installed in 2000 and 2001, respectively. Under 40 CFR Part 63, Subpart GG, emission unit 018 is considered an affected facility.

(4) Cleaners and solvents characterized as having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38°C (100°F) or having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20°C (68°F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months. Cleaning operations include hand wiping and spray gun cleaning. These activities are located in Hangar 1, 2, 3, and 5, emission unit P-2 and in the Back Shops. Potential VOC emissions are less than 3 pounds per hour and potential HAP emissions are less than 1 ton per year.
[40 CFR 63, Subpart GG][326 IAC 20-15]

Nonapplicable portions of the NESHAP will not be included in the permit. This source is subject to the following portions of Subpart GG:

(1) 40 CFR 63.741;
(2) 40 CFR 63.742;
(3) 40 CFR 63.743(a), and (d);
(4) 40 CFR 63.744;
(5) 40 CFR 63.745(a), (b), (c), (e), (f), (g)(1), and (g)(2)(i)(A);
(6) 40 CFR 63.745(g)(3), and (g)(4);
(7) 40 CFR 63.746(a), (b)(1) to (b)(3), (b)(4)(i), and (b)(4)(ii)(A);
(8) 40 CFR 63.748;
(9) 40 CFR 63.749(a), (b), (c), (d)(1), (d)(2), (d)(3)(i); (d)(3)(iii), and (d)(3)(iv);
(10) 40 CFR 63.749(d)(4)(i), (d)(4)(iii), and (d)(4)(iv);
(11) 40 CFR 63.749(e), (f)(1), (f)(3)(ii), (g), (h)(1), (h)(3)(i), and (i);
(12) 40 CFR 63.750(a) to (f), (i) to (o);
(13) 40 CFR 63.751(d) and (f);

(14) 40 CFR 63.752(a) to (e)(1), and (e)(4) to (e)(7);
(15) 40 CFR 63.753(a), (b), (c)(1)(i), (c)(1)(ii), (c)(1)(vi), (c)(1)(vii), (c)(2);
(16) 40 CFR 63.753(d)(1), and (d)(2);
(17) 40 CFR 63.759;
(18) Table 1; and
(19) Appendix A to Subpart GG of Part 63 – Specialty Coating Definitions.

The TSD for minor source modification number 097-30785-00559 indicates the ablative coating operation is exempt from the requirements of Subpart GG. The coating use in the ablative coating operation uses a spray application method at 35-60 psi, and cannot be applied using the application methods specified in the regulation. Specifically, the ablative coating contains fillers that adversely affect atomization with HVLP spray guns. Therefore, the ablative coating operation is exempt from the requirements of Subpart GG under significant source modification 097-30785-00559 and pursuant to 40 CFR 63.745(f)(3)(ii).

(e) **40 CFR 63, Subpart YY – National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards:** This subpart applies to acetal resins production, acrylic and modacrylic fibers production, carbon black production, cyanide chemicals manufacturing, ethylene production, hydrogen fluoride production, polycarbonate production, and spandex production. AAR Aircraft Services, Indianapolis does not belong to one of the applicable source categories. Therefore, the requirements of 40 CFR 63, Subpart YY (326 IAC 20-44) are not included in this Part 70 Operating Permit.

(f) **40 CFR 63, Subpart MMMM, National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products:** This subpart applies to miscellaneous metal parts and products including: motor vehicle parts and accessories, bicycles and sporting goods, recreational vehicles, extruded aluminum structural components, railroad cars, heavy duty trucks, medical equipment, lawn and garden equipment, electronic equipment, magnet wire, steel drums, industrial machinery, metal pipes, and numerous other industrial, household, and consumer products. This subpart does not apply to the surface coating of metal parts and components of aerospace vehicles that meet the applicability criteria of 40 CFR 63, Subpart GG. The surface coating of metal parts and products conducted at this source meet the applicability criteria of 40 CFR 63, Subpart GG. Therefore, the requirements of 40 CFR 63, Subpart MMMM (326 IAC 20-80) are not included in this Part 70 Operating Permit.

(g) **40 CFR 63, Subpart PPPP – National Emission Standards for Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products**: This subpart applies to the surface coating of plastic parts and products including: motor vehicle parts and accessories for automobiles, trucks, recreational vehicles; sporting and recreational goods; toys; business machines; laboratory and medical equipment; and other consumer products. This subpart does not apply to the surface coating of plastic parts and components of aerospace vehicles that meet the applicability requirements of 40 CFR 63, Subpart GG. The surface coating operations conducted at this source meet the applicability criteria of 40 CFR 63, Subpart GG. Therefore, the requirements of 40 CFR 63, Subpart PPPP (326 IAC 20-81) are not included in this Part 70 Operating Permit.

(h) **40 CFR 63, Subpart HHHHHH – National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources:** This subpart applies to paint stripping operations using chemical strippers that contain methylene chloride in the paint removal process, auto body refinishing operations, spray application of coatings containing compounds of chromium, lead, manganese, nickel, or cadmium to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment. This subpart does not apply to surface coating or paint stripping activities that are covered under another area source NESHAP. The surface coating operations conducted at this source meet the applicability criteria of 40 CFR 63, Subpart GG and parts are for mobile equipment. Therefore, 40 CFR 63, the requirements of Subpart HHHHHH are not included in this Part 70 Operating Permit.

(i) **40 CFR 63, Subpart XXXXXX – National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories:** This subpart applies to area sources manufacturing, fabricating, or forging one or more of the products listed in one of the nine metal fabrication, and finishing source categories listed below:

(1) Electrical and Electronic Equipment Finishing Operations;
(2) Fabricated Metal Products;
(3) Fabricated Plate Work (Boiler Shops);
(4) Fabricated Structural Metal Manufacturing;
(5) Heating Equipment, except electric;
(6) Industrial Machinery and Equipment Finishing Operations;
(7) Iron and Steel Forging;
(8) Primary Metal Products Manufacturing; and
(9) Valves and Pipe Fittings.

AAR Indianapolis, Indianapolis is not involved in the manufacturing, fabricating or forging one of the nine metal fabrication and finishing source categories. Therefore, the requirements of 40 CFR 63, Subpart XXXXXX are not included in this Part 70 Operating Permit.

State Rule Applicability - Entire Source

326 IAC 1-6-3 (Preventive Maintenance Plan)
The source is subject to 326 IAC 1-6-3.

326 IAC 1-5-2 (Emergency Reduction Plans)
The source is subject to 326 IAC 1-5-2.

326 IAC 1-7 (Stack Height Provisions)
This rule applies to all sources with exhaust gas stacks that have uncontrolled potential emissions of twenty-five (25) tons per year or more of SO_2 or particulate matter (PM). Boilers #2, #3, and #4 at Plant 2, Johnson Melloh Solutions - IMC Central Energy Plant (097-00586) have uncontrolled potential SO_2 emissions of greater than twenty-five (25) tons per year. Therefore, Boilers #2, #3, and #4 are subject to the stack height provisions of 326 IAC 1-7.

326 IAC 2-2 (PSD) and 326 IAC 2-3 (Emission Offset)
This source is a minor source for Prevention of Significant Deterioration (PSD) and a minor source for Emission Offset (EO). See the Potential to Emit after Issuance Section of this Technical Support Document (TSD) for a more detailed discussion.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)
This rule applies to major sources of hazardous air pollutants (HAPS) constructed after July 27, 1997. This source is a minor source of HAPs. Therefore, the requirements of 326 IAC 2-4.1 are not included in the permit.

326 IAC 2-6 (Emission Reporting)
This source, not located in Lake, Porter, or LaPorte County, is subject to 326 IAC 2-6 (Emission Reporting) because it is required to have an operating permit pursuant to 326 IAC 2-7 (Part 70). The potential to emit of VOC and PM_{10} is less than 250 tons per year; and the potential to emit of CO, NO_x, and SO_2 is less than 2,500 tons per year. Therefore, pursuant to 326 IAC 2-6-3(b)(2), triennial reporting is required. An emission statement shall be submitted in accordance with the compliance schedule in 326 IAC 2-6-3 by July 1, 2017, and every three (3) years thereafter. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 5-1 (Opacity Limitations)
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(2).

326 IAC 6-4 (Fugitive Dust Emissions)
This rule applies to all sources of fugitive dust emissions. This source has fugitive dust emissions: therefore, this rule applies to the source.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
This rule applies to any source of fugitive particulate matter emissions located in nonattainment areas for particulate matter as designated by the Air Pollution Control Board, except Lake County, which has potential fugitive particulate matter emissions of twenty-five (25) tons per year or more. This source does not have potential fugitive particulate matter emission of twenty-five tons per year of more. Therefore, the requirements of 326 IAC 6-5 are not included in the permit.

326 IAC 6.5 (PM Limitations Except Lake County)
326 IAC 6.5 applies to sources or facilities located in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties. Sources specifically listed in the rule shall comply with the limitations in 326 IAC 6.5-2 through 326 IAC 6.5-10, as applicable. Sources not specifically listed in 326 IAC 6.5-2 through 326 IAC 6.5-10 shall comply with 326 IAC 6.5-1-2 if they have the potential to emit one hundred (100) tons or more, or have actual emissions of ten (10) tons or more of particulate matter (PM). 326 IAC 6.5 does not apply to combustion units located at sources specifically listed in 326 IAC 6.5-2 through 326 IAC 6.5-10, that burn only natural gas. 326 IAC 6.5 does not apply to surface coating operations and reinforced plastic composites fabricating manufacturing processes that use dip coating, roll coating, flow coating, or brush coating, or that use less than five (5) gallons of coating a day. Finally, the requirements of 326 IAC 6.5 do not apply to processes subject to a more stringent limitation under an NSPS.

This source, located in Marion County, does not have the potential to emit one hundred (100) tons or more per year of PM. However, it does have the potential to emit ten (10) tons per year or more of PM and PM emissions are not limited below ten (10) per year. Therefore, 326 IAC 6.5 applies to AAR Aircraft Services, Indianapolis and the requirements are included in the permit.

Pursuant to 326 IAC 6.5-1-2(h), surface coating operations shall be controlled by dry particulate filters, waterwashes, or an equivalent control device(s) and the source shall operate the control device(s) in accordance with the manufacturer's specifications. Pursuant to 326 IAC 6.5-1-2(a), particulate matter emissions from all other facilities subject to 326 IAC 6.5 shall not exceed 0.03 grain per dry standard cubic foot (dscf).

326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

State Rule Applicability – Individual Facilities

Emission Units 013, 017, 018, P-2, and the Ablative Coating Operation

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
(1) Pursuant to CP096-00156-01 Condition 15, issued November 25, 1996, and to the operating procedures outlined in the top down BACT analysis in accordance with 326 IAC 8-1-6, the Permittee shall achieve Best Available Control Technology for coatings used in emission units 013, 017 and 018 as specified below:

(a) The Permittee shall not apply to aerospace components any coating in the following categories with a VOC content in excess of the following limits (except as noted in condition b), expressed as grams of VOC per liter (lbs/gal) of coating as applied, excluding water:

Coating Category	g VOC/liter	lb VOC /gal
Primer – coatings applied directly to the aerospace component for the purpose of corrosion prevention, protection from the environment, functional fluid resistance and adhesion of subsequent coatings.	350	2.9
Adhesive Bonding Primer – coatings applied in a very thin film to aerospace metal for the primary purpose of providing a primer for a subsequent coating of structural adhesive.	850	7.1
Interior Topcoat – coating used in interior habitable spaces of aircraft.	340	2.8
Electric or Radiation Effect Coating – Electrical conductive or insulative coatings and coatings used on radar and antennae enclosures.	800	6.7
Extreme Performance and Interior Topcoat – A topcoat used in interior spaces of the aircraft areas requiring fluid, stain or nicotine barrier.	420	3.5
Fire Insulation Coating – Coatings used to provide a layer of insulation in the event of an aircraft or engine fire	600	5.0
Fuel Tank Coating – Coatings applied to the interior of a fuel tank or fuel wetted area of the aircraft to protect it from corrosion.	720	6.0
High Temperature Coating – A coating that during its normal use must withstand temperatures in excess of 350 degrees Fahrenheit.	720	6.0

Coating Category	g VOC/liter	lb VOC /gal
Sealant – A coating applied for the purpose of filling voids and providing a barrier against penetration of water, fuel or other fluids or vapors.	600	5.0
Self-priming Topcoat – A coating applied directly to the aerospace component that is not subsequently over coated.	420	3.5
Topcoat – Coatings applied over a primer or intermediate coating for the purposes such as appearance, identification or protection.	420	3.5
Pretreatment Wash Primer – A coating which contains a minimum of 0.5% acid by weight for surface etching and is applied directly to a bare metal surface to provide corrosion resistance and adhesion.	420	3.5
Sealant Bonding Primer – A coating applied in a very thin film to an aerospace component for the purposes of providing a primer for subsequent coat of a silicon sealant.	720	6.0
Temporary Protection Coating – A coating applied to an aerospace component to protect it from any mechanical or environmental damage during manufacturing.	250	2.1

(b) The aforementioned coating requirements shall not apply to:

(1) Application of coating to assembled printed circuit boards

(2) Coating of paper, fabrics and films

(3) Applications of adhesives

(4) Use of adhesive bonding primers that have a cure temperature in excess of 325°F

(5) Use of hand held non-refillable aerosol cans

(6) Application of coatings by template or hand in order to add designs, letters and/or numbers to the products

(7) Application of a solid film lubricant (anti-chafe coating)

(8) Coating of test panels used to evaluate coating performance

(9) Use of low usage coating which are coating with separate formulations that are used in volumes of less than 20 gallons per calendar year, provided that the requirements of item (c) below are met and no more than 200 gallons of low usage coatings may be classified as exempt per year.

(c) When using low usage coatings with formulations not covered in subsection (a) above, the Permittee shall annually provide a list in writing to IDEM, OAQ of coatings to be covered under the low usage exemptions stated in subsection (b) above for the following calendar year, the expected volume to be used and the maximum VOC content. The Permittee shall notify OAQ in writing of any additional coatings added to this list during the calendar year.

(d) The Permittee shall maintain a document containing a list of all coatings with coating limitations which may be used during the following year, the coating category, the VOC limit for the coating category, the mix ratio (if applicable), and VOC content of the coating as applied expressed as pounds per gallon of coating less water. This document will be updated periodically and in the interim, memos containing the required information will be issued as needed for new coatings or reformulations of existing coatings.

(e) Compliance with the coating limitations shall be based on methods specified in 326 IAC 8-1-4(a).

(f) The Permittee shall utilize High Volume, Low Pressure (HVLP) and/or touch up guns transfer technology when applying coatings by spray. HVLP shall mean coating equipment which is used to apply coatings by means of a gun that operates between 0.1 and 10 psig air atomizing spray. Touch up guns shall mean small air spray equipment, including air brushes that operate at no greater than 5 cfm air flow and no greater than 50 psig air pressure. These requirements do not apply to aerosol spray paint cans or the following:

(1) The application of coatings to surface areas with limited access due to visual impairment which requires a 360 degree spray gun extension.

(2) The application of waterborne extreme performance interior topcoat coating.

(3) The application of adhesive bonding primers and pretreatment primers.

(4) The application of a textured finish coat. A textured finish coat shall be considered any coating used to produce a non-smooth, patterned surface that is intentionally produced and applied as a final coat by spraying drops of coating over a previously applied base coat.

(2) Potential VOC emissions from surface coating operation P-2 and the ablative coating operation are greater than twenty-five (25) tons per year and would be subject to 326 IAC 8-1-6. However, the Permittee has accepted the following limits to render the requirements of 326 IAC 8-1-6 not applicable to the surface coating operation P-2 and the ablative coating operation:

(a) The VOC input to the surface coating operation (P-2) shall be less than twenty-five (25) tons per twelve (12) consecutive month period, with compliance determined at the end of each month, including thinning and clean up solvents and excluding any VOC in the waste solvent shipped offsite for recycling or disposal. Compliance with this limit shall limit the VOC emissions from the surface coating operation (P-2) to less than twenty-five (25) tons per year and shall render the requirements of 326 IAC 8-1-6 (New Facilities; VOC Reduction Requirements) not applicable to P-2.

(b) The VOC input to the ablative coating operation shall be less than twenty-five (25) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Compliance with this limit shall limit the VOC emissions from the ablative coating operation to less than twenty-five (25) tons per year and shall render the requirements of 326 IAC 8-1-6 (New Facilities; VOC Reduction Requirements) not applicable to the ablative coating operation.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
This rule establishes emission limitations for particulate emissions from manufacturing process located anywhere in the state. A manufacturing process is any single or series of actions, operations, or treatments in which a mechanical, physical, or chemical transformation of material occurs that emits, or has the potential to emit, particulate in the production of the product. The surface coating operations are considered manufacturing processes creating particulate matter emissions. However, emission units 013, 014, 018 and P-2 are subject to particulate control requirements under 40 CFR 63, Subpart GG. Pursuant to 326 IAC 6-3-1(c)(6), emission units 013, 014, 018, and P-2 are not subject to the requirements of 326 IAC 6-3; because, they are subject to a more stringent requirement under NESHAP Subpart GG. The ablative coating operation is not subject to NESHAP Subpart GG or 326 IAC 6-3, because it is subject to a particulate matter (PM) emission limitation under 326 IAC 6.5, pursuant to 326 IAC 6-3-1(c)(3).

326 IAC 6.5 (PM Limitations Except Lake County)
This source is subject to the requirements of 326 IAC 6.5 and emission units 013, 017, 018, P-2 and the ablative coating operation are subject to 326 IAC 6.5. Pursuant to 326 IAC 6.5-1-2(h), emission units 017, 018, P-2, the touchup painting booths located in Hangar 1, 2, 3, and 5 and the back shops, and the ablative coating operation shall be controlled by dry particulate filters, waterwashes, or an equivalent control device(s) and the source shall operate the control device(s) in accordance with the manufacturer's specifications.

326 IAC 8-2-9 (Miscellaneous Metal and Plastic Parts Coating Operations)
This rule applies to sources located in Marion County, constructed after November 1, 1980, with potential VOC emissions of twenty (25) tons per year or more and engaged in the surface coating of any of the following:

(a) Large and small farm machinery;
(b) Small household appliances;
(c) Office equipment;
(d) Commercial and industrial machinery and equipment;
(e) Surface coaters of metal parts or products under SIC codes: #33, #34, #35, #36, #37, #38, and #39.

AAR Aircraft Services, Indianapolis is not engaged in surface coating of any of the parts or products subject to 326 IAC 8-2-9. Therefore, the requirements of 326 IAC 8-2-9 were not included in the permit for emission units 013, 017, 018, P-2, or the Ablative Coating Operation.

Degreasing Operations

326 IAC 8-3-2 (Organic Solvent Degreasing)
This rule applies to sources owning or operating degreasers using solvents that contain a volatile organic compound (VOC) and were constructed after January 1, 1980 and are located anywhere in the state. This source contains fifteen organic solvent degreasing units constructed after 1980. Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the owner or operator shall:

(a) Equip the degreaser with a cover;

(b) Equip the degreaser with a device for draining cleaned parts;

(c) Close the degreaser cover whenever parts are not being handled in the degreaser;

(d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) Provide a permanent, conspicuous label summarizing the operation requirements; and

(f) Store waste solvent only in covered containers and not dispose or transfer waste solvent in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) could evaporate into the atmosphere.

326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers)
This rule establishes material requirements for the degreasing agents used in cold cleaner degreasers, located anywhere in the state, on and after January 1, 2015. Pursuant to 326 IAC 8-3-8, on and after January 1, 2015, material requirements for cold cleaner degreasers are as follows:

(a) The Permittee shall not cause or allow the sale of solvents for use in cold cleaner degreasing operations with a VOC composite partial vapor pressure, when diluted at the manufacturer's recommended blend and dilution, 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) in an amount greater than five (5) gallons during any seven (7) consecutive days to an individual or business.

(b) The Permittee shall not operate the cold cleaner degreasers 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).

(c) The Permittee shall maintain the following records for each purchase:

(1) The name and address of the solvent supplier

(2) The date of purchase (or invoice/bill date of contract servicer indicating service date;

(3) The type of solvent purchased;

(4) The total volume of solvent purchased;

(5) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

326 IAC 8-17 (Industrial Solvent Cleaning Operations)
This rule applies to sources located in Lake and Porter Counties. This source is located in Marion County. Therefore, the requirements of 326 IAC 8-17 were not included in the permit.

326 IAC 8-21 (Aerospace Manufacturing and Rework Operations)
This rule applies to sources located in Lake and Porter Counties. This source is located in Marion County. Therefore, the requirements of 326 IAC 8-21 were not included in the permit.

Miscellaneous Manufacturing Processes

326 IAC 8-2-9 (Miscellaneous Metal and Plastic Parts Coating Operations)
This rule applies to sources located in Marion County, constructed after November 1, 1980, with potential VOC emissions of twenty (25) tons per year or more and engaged in the surface coating of any of the following:

(a) Large and small farm machinery;
(b) Small household appliances;
(c) Office equipment
(d) Commercial and industrial machinery and equipment;
(e) Surface coaters of metal parts or products under SIC codes: #33, #34, #35, #36, #37, #38, and #39.

AAR Aircraft Services, Indianapolis is not engaged in surface coating of any of the parts or products subject to 326 IAC 8-2-9. Therefore, the requirements of 326 IAC 8-2-9 were not included in the permit for the touchup painting booths located in Hangars 1, 2, 3, or 5, and in the Back Shops.

326 IAC 8-6 (Organic Solvent Emission Limitations)
This rule applies to existing sources as of January 1, 1980, located in Lake and Marion Counties, with potential emissions of VOC of one hundred (100) tons per year or more, and not otherwise limited by another Article 8 rule. This rule also applies to operations commencing after October 7, 1974, and prior to January 1, 1980, and located anywhere in the state, with potential VOC emissions of one hundred (100) tons per year or more, and not otherwise limited by another Article 8 rule. While the airport dates back to 1931, the emission units resulting in the potential to emit of VOC exceeding 100 tons per year were constructed after January 1, 1980. Therefore, the requirements of 326 IAC 8-6 were not included in the permit for the touchup painting booths located in Hangars 1, 2, 3, or 5, and in the Back Shops.

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.

The compliance determination requirements applicable to this source are as follows:

Compliance Determination Requirements		
Emission Unit	**Parameter**	**Frequency**
013, 017, 018, P-2, and Ablative Coating Operation	VOC Content	Maintain current MSDS
P-2, and Ablative Coating Operation	VOC Input	Monthly
P-2, and Ablative Coating Operation	VOC Shipped Offsite	Monthly
Emission Units 017 and 018	Use of Dry Filters	At all times.
Emission Unit P-2	Use of Dry Filters	At all times.
Ablative Coating Operation	Use of Dry Filters	At all times.
The touchup painting booths located in Hangar 1, 2, 3, or 5 and in the Back Shops	Use of Dry Filters	At all times.

Summary of Testing Requirements				
Emission Unit	**Control Device**	**Timeframe for Testing**	**Pollutant**	**Frequency**
Emission Unit Testing is not Required				

The compliance monitoring requirements applicable to this source are as follows:

Compliance Monitoring Requirements			
Emission Units	**Parameter**	**Frequency**	**Response to Excursions or Exceedances**
Emission Units 017 and 018	Filter Checks	Once per Shift	A Reasonable Response
	Overspray at Exhaust and Ground Nearby, Exhaust Emissions	Monthly	A Reasonable Response

Compliance Monitoring Requirements			
Emission Units	**Parameter**	**Frequency**	**Response to Excursions or Exceedances**
Emission Unit P-2	Filter Checks	Once per Shift	A Reasonable Response
	Overspray at Exhaust and Ground Nearby, Exhaust Emissions	Monthly	A Reasonable Response
Ablative Coating Operation	Filter Checks	Once per Shift	A Reasonable Response
	Overspray at Exhaust and Ground Nearby, Exhaust Emissions	Monthly	A Reasonable Response
The touchup painting booths located in Hangar 1, 2, 3, or 5 and in the Back Shops	Filter Checks	Once per Shift	A Reasonable Response
	Overspray at Exhaust and Ground Nearby, Exhaust Emissions	Monthly	A Reasonable Response

These monitoring conditions are necessary because the dry filters for the surface coating operations must operate properly to ensure compliance with 326 IAC 6.5 (Particulate Matter Limitations Except Lake County).

IDEM, OAQ, Permits Branch along with OAQ, Compliance and Enforcement agreed to use non-standard compliance monitoring for surface coating operations at this source. Normally, filter checks are performed daily. In this case, a frequency of once per shift is used to better align compliance the state rule with the aerospace NESHAP Subpart GG. In addition, monthly inspections of overspray and exhaust emissions were both extended to monthly. A longer monitoring frequency for overspray and exhaust emissions is justifiable due to more frequent checks of the integrity and particle loading of the dry filters.

Recommendation

The staff recommends to the Commissioner that the Administrative Part 70 Operating Permit Renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on May 30, 2013.

Conclusion

The operation of this stationary aerospace vehicle maintenance center shall be subject to the conditions of the attached Administrative Part 70 Operating Permit Renewal No. T097-33261-00559.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to David Matousek 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) 232-8253 or toll free at 1-800-451-6027 extension 2-8253.

(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.

Appendix A to the Technical Support Document - Emission Calculations
PSD Analysis - Entire Source after Issuance

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Potential to Emit - Nested Boilers (TPY) - One of 28 Source Categories

Process / Emission Unit	Location	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO	NO_x
IMCCEP Boiler #1	JMS	6.05	14.07	14.07	86.22	6.66	85.90	83.20
IMCCEP Boiler #2	JMS							
IMCCEP Boiler #3	JMS							
IMCCEP Boiler #4	JMS							
Total for Nested Boilers		**6.05**	**14.07**	**14.07**	**86.22**	**6.66**	**85.90**	**83.20**
PSD Major Source Thresholds		**100**	**100**	**100**	**100**	**100**	**100**	**100**

Potential to Emit - Total Collocated Source (TPY) - Not One of 28 Source Categories

Source Process / Emission Unit	Location	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO	NO_x
Total for Nested Boilers	JMS	6.05	14.07	14.07	86.22	6.66	85.90	83.20
Emergency Generator EU-13	IAA	0.49	0.22	0.22	1.33	0.39	10.29	8.36
Emergency Generator EU-14	IAA	0.49	0.22	0.22	1.33	0.39	10.29	8.36
Tank A	IAA	0.00	0.00	0.00	0.00	0.36	0.00	0.00
Emergency Generator EU-15	IAA	0.19	0.08	0.08	0.51	0.15	3.93	3.19
Emergency Generator EU-16	IAA	0.33	0.15	0.15	0.91	0.26	6.99	5.68
Emergency Generator EU-18	IAA	0.34	0.15	0.15	0.93	0.27	7.14	5.81
Emergency Generator EU-21	IAA	0.07	0.07	0.07	0.07	0.08	0.22	0.51
Emergency Generator EU-500	IAA	0.18	0.08	0.08	0.50	0.15	3.88	3.16
Degreasing	IAA	0.14	0.14	0.14	0.00	2.38	0.00	0.00
IAA Generators < 600 hp	IAA	0.30	0.30	0.30	0.28	0.00	0.91	4.24
IAA Generator Electric Vault	IAA	0.13	0.08	0.08	0.46	0.13	1.03	4.50
IAA Generator Eagle Hub	IAA	0.35	0.20	0.20	1.23	0.36	2.78	7.70
IAA Boilers < 100 MMBtu/hr	IAA	0.11	0.45	0.45	0.04	0.32	4.92	5.86
Boiler 23	IAA	0.02	0.10	0.10	0.01	0.07	1.10	1.31
Emergency Generator EU-24	IAA	0.13	0.08	0.08	0.76	0.13	1.04	2.45
IAA Natural Gas Heaters and Boiler	IAA	0.20	0.79	0.79	0.06	0.57	8.68	10.34
Emergency Generators EU-25/26	IAA	0.47	0.47	0.47	0.44	0.54	1.43	6.63
JMS Generators < 600 hp	JMS	1.30	1.30	1.30	1.22	1.51	3.99	18.52
JMS Generators > 600 hp	JMS	0.79	0.45	0.45	2.74	0.80	6.21	27.09
Ablative Coating Operation	AAR	5.25	5.25	5.25	0.00	25.00	0.00	0.00
AMU Heat and Cure Oven	AAR	0.02	0.08	0.08	0.01	0.06	0.92	1.10
Surface Coating P-2	AAR	0.92	0.92	0.92	0.00	25.00	0.00	0.00
NG Make-up Air Heating Unit B-1	AAR	0.30	1.20	1.20	0.09	0.87	13.25	15.77
Surface Coating EU-13/17/18	AAR	21.61	21.61	21.61	0.00	94.77	0.00	0.00
Chautauqua Airlines Emissions	CHA	0.00	0.00	0.00	0.00	negligible	0.00	0.00
ASIG Aircraft Services International Group : Generators > 600 hp	ASIG	0.28	0.13	0.13	0.76	0.22	5.87	4.77
ASIG Aircraft Services International Group: Tanks	ASIG	0.00	0.00	0.00	0.00	0.70	0.00	0.00
Total PTE of Entire Source		**40.47**	**48.60**	**48.60**	**99.90**	**162.13**	**180.78**	**228.55**
Emission Offset/NA-NSR		**---**	**---**	**---**	**100.00**	**---**	**---**	**---**
PSD Major Source Thresholds		**250**	**250**	**250**	**---**	**250**	**250**	**250**

Appendix A to the Technical Support Document - Emission Calculations
Indianapolis Airport Authority - HAP Emissions After Issuance

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek
Date: December 10, 2014

Indianapolis Airport Authority HAP Summary

HAP	EU13	EU14	EU15	EU16	EU18	EU21	EU500	Degrease	Gen < 600	Electric Vault Generator	Eagle Hub Generator	Boiler < 100	Boiler 23	Gen 024	NG Heaters <100	Gen 025/026	IAA Total
1,1,1-Trichloroethane																	
1,3-butadiene									3.76E-05							5.86E-05	**9.62E-05**
2-methylnaphthalene																	
3-methylchloranthrene																	
7,12-dimethylbenz(a)anthracene																	
Acenaphthene																	
Acenaphthylene																	
Acetaldehyde	9.70E-05	9.70E-05	3.70E-05	6.59E-05	6.74E-05	1.79E-04	3.66E-05		7.38E-04	3.31E-05	8.93E-05			3.33E-05		1.15E-03	**2.62E-03**
Acrolein	3.03E-05	3.03E-05	1.16E-05	2.06E-05	2.11E-05	2.15E-05	1.15E-05		8.90E-05	1.03E-05	2.79E-05			1.04E-05		1.39E-04	**4.23E-04**
Anthracene																	
Arsenic																	
Benz(a)anthracene																	
Benzene	2.99E-03	2.99E-03	1.14E-03	2.03E-03	2.08E-03	2.17E-04	1.13E-03		8.98E-04	1.02E-03	2.75E-03	1.23E-04	2.76E-05	1.03E-03	2.17E-04	1.40E-03	**0.02**
Benzo(a)pyrene																	
Benzo(b)fluoranthene																	
Benzo(g,h,i)perylene																	
Benzo(k)fluoranthene																	
Beryllium																	
Cadmium												6.44E-05	1.45E-05		1.14E-04		**1.93E-04**
Chromium												8.20E-05	1.84E-05		1.45E-04		**2.45E-04**
Chrysene																	
Dibenzo(a,h)anthracene																	
Dichlorobenzene												7.03E-05	1.58E-05		1.24E-04		**2.10E-04**
Diisocyanate																	
Ethylbenzene								7.45E-02									**0.07**
Fluoranthene																	
Fluorene																	
Formaldehyde	3.04E-04	3.04E-04	1.16E-04	2.06E-04	2.11E-04	2.75E-04	1.15E-04		1.14E-03	1.04E-04	2.80E-04	4.39E-03	9.86E-04	1.04E-04	7.75E-03	1.77E-03	**0.02**
Glycol																	
Hexane												1.05E-01	2.37E-02		1.86E-01		**0.32**
Indo(1,2,3-cd)pyrene																	
Lead												2.93E-05	6.57E-06		5.17E-05		**8.75E-05**
Manganese												2.23E-05	4.99E-06		3.93E-05		**6.65E-05**
Mercury																	
Methanol																	
Methyl Chloroform																	
Methyl Isobutyl Ketone																	
Methylene Chloride																	
Naphthalene																	
Nickel												1.23E-04	2.76E-05		2.17E-04		**3.68E-04**
Phenanthrene																	
Phenol																	
Polycyclic Organic Matter	8.16E-04	8.16E-04	3.12E-04	5.55E-04	5.67E-04	3.92E-05	3.08E-04		1.62E-04	2.78E-04	7.51E-04			2.80E-04		2.52E-04	**5.14E-03**
Pyrene																	
Selenium																	
Toluene	1.08E-03	1.08E-03	4.13E-04	7.35E-04	7.51E-04	9.51E-05	4.09E-04	6.16E-01	3.94E-04	3.69E-04	9.96E-04	1.99E-04	4.47E-05	3.71E-04	3.52E-04	6.13E-04	**0.62**
Trimethylpentane																	**0.00**
Xylene	7.43E-04	7.43E-04	2.84E-04	5.05E-04	5.16E-04	6.65E-05	2.81E-04	1.68E-01	2.74E-04	2.53E-04	6.84E-04			2.55E-04		4.27E-04	**0.17**
Process Total	**6.06E-03**	**6.06E-03**	**2.31E-03**	**4.12E-03**	**4.21E-03**	**8.93E-04**	**2.29E-03**	**0.86**	**3.73E-03**	**2.07E-03**	**5.58E-03**	**0.11**	**0.02**	**2.08E-03**	**0.20**	**5.80E-03**	**1.23**

Appendix A to the Technical Support Document - Emission Calculations
Sourcewide HAP Emissions After Issuance - Including Nested Source

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek
Date: December 10, 2014

Sourcewide HAP Emissions

HAP	JMS IMCCEP Boilers	JMS Gen < 600	JMS Gen > 600	AAR Ablative	AAR AMU Oven	AAR P-2	AAR B-1	AAR EU13, 17, 18	Total from CHA	ASIG Generator	ASIG Tanks	Subtotal	IAA Total	Source Total
1,1,1-Trichloroethane	5.09E-04											5.09E-04	0.00E+00	**5.09E-04**
1,3-butadiene		1.64E-04										1.64E-04	9.62E-05	**2.60E-04**
2-methylnaphthalene	2.90E-05											2.90E-05	0.00E+00	**2.90E-05**
3-methylchloranthrene	2.18E-06											2.18E-06	0.00E+00	**2.18E-06**
7,12-dimethylbenz(a)anthracene	1.94E-05											1.94E-05	0.00E+00	**1.94E-05**
Acenaphthene	4.71E-05											4.71E-05	0.00E+00	**4.71E-05**
Acenaphthylene	2.19E-06											2.19E-06	0.00E+00	**2.19E-06**
Acetaldehyde		3.22E-03	1.99E-04							5.54E-05		3.48E-03	2.62E-03	**0.01**
Acrolein		3.89E-04	6.23E-05							1.73E-05		4.68E-04	4.23E-04	**8.91E-04**
Anthracene	4.83E-06											4.83E-06	0.00E+00	**4.83E-06**
Arsenic	1.39E-03											1.39E-03	0.00E+00	**1.39E-03**
Benz(a)anthracene	1.03E-05											1.03E-05	0.00E+00	**1.03E-05**
Benzene	2.54E-03	3.92E-03	6.13E-03		2.30E-05		3.31E-04			1.71E-03		0.01	0.02	**0.03**
Benzo(a)pyrene	1.45E-06											1.45E-06	0.00E+00	**1.45E-06**
Benzo(b)fluoranthene	2.18E-06											2.18E-06	0.00E+00	**2.18E-06**
Benzo(g,h,i)perylene	5.97E-06											5.97E-06	0.00E+00	**5.97E-06**
Benzo(k)fluoranthene	2.18E-06											2.18E-06	0.00E+00	**2.18E-06**
Beryllium	9.13E-04											9.13E-04	0.00E+00	**9.13E-04**
Cadmium	1.91E-03				1.20E-05		1.73E-04					2.09E-03	1.93E-04	**2.29E-03**
Chromium	2.18E-03				1.53E-05		2.21E-04	5.20E-01				0.52	2.45E-04	**0.52**
Chrysene	6.78E-06											6.78E-06	0.00E+00	**6.78E-06**
Dibenzo(a,h)anthracene	4.70E-06											4.70E-06	0.00E+00	**4.70E-06**
Dichlorobenzene	1.45E-03				1.31E-05		1.89E-04					1.65E-03	2.10E-04	**1.86E-03**
Diisocyanate								1.00E-02				0.01	0.00E+00	**0.01**
Ethylbenzene	1.37E-04			6.94E-03				1.00E-02				0.02	0.07	**0.09**
Fluoranthene	1.32E-05											1.32E-05	0.00E+00	**1.32E-05**
Fluorene	1.22E-05											1.22E-05	0.00E+00	**1.22E-05**
Formaldehyde	2.00E-01	4.96E-03	6.23E-04		8.21E-04		1.18E-02			1.73E-04		0.22	0.02	**0.24**
Glycol								1.00E-02				0.01	0.00E+00	**0.01**
Hexane	2.18E+00				1.97E-02		2.84E-01					2.48	0.32	**2.80**
Indo(1,2,3-cd)pyrene	6.26E-06											6.26E-06	0.00E+00	**6.26E-06**
Lead	2.71E-03				5.48E-06		7.88E-05					2.79E-03	8.75E-05	**2.88E-03**
Manganese	2.15E-03				4.16E-06		5.99E-05					2.22E-03	6.65E-05	**2.28E-03**
Mercury	1.14E-03											1.14E-03	0.00E+00	**1.14E-03**
Methanol								1.00E-02				1.00E-02	0.00E+00	**0.01**
Methyl Chloroform								9.50E-01				0.95	0.00E+00	**0.95**
Methyl Isobutyl Ketone				1.19E+00		3.97E-01		3.20E-01				1.91	0.00E+00	**1.91**
Methylene Chloride								4.10E-01				0.41	0.00E+00	**0.41**
Naphthalene	2.99E-03											2.99E-03	0.00E+00	**2.99E-03**
Nickel	2.82E-03				2.30E-05		3.31E-04					3.18E-03	3.68E-04	**3.55E-03**
Phenanthrene	3.82E-05											3.82E-05	0.00E+00	**3.82E-05**
Phenol								8.00E-02				0.08	0.00E+00	**0.08**
Polycyclic Organic Matter	7.11E-03	7.06E-04	1.68E-03							4.66E-04		0.01	5.14E-03	**0.02**
Pyrene	1.37E-05											1.37E-05	0.00E+00	**1.37E-05**
Selenium	4.73E-04											4.73E-04	0.00E+00	**4.73E-04**
Toluene	1.67E-02	1.72E-03	2.22E-03	5.56E+00	3.72E-05		5.36E-04	9.20E-01		6.18E-04		6.51	0.62	**7.13**
Trimethylpentane												0.00	0.00	**0.00**
Xylene	2.35E-04	1.20E-03	1.52E-03	7.94E-01		4.39E-01		2.30E-01		4.24E-04		1.47	0.17	**1.64**
Process Total	**2.43**	**0.02**	**0.01**	**7.56**	**0.02**	**0.84**	**0.30**	**3.47**	**0.00**	**3.46E-03**	**0.00E+00**	**14.64**	**1.23**	**15.87**

Appendix A to the Technical Support Document - Emission Calculations
Sourcewide Limited Potential to Emit

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek
Date: December 10, 2014

Summary of Potential to Emit

		Limited Potential To Emit (ton/yr)							HAP	
Process / Emission Unit	Location	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Total	Single
Emergency Diesel Generator EU-13	IAA	0.49	0.22	0.22	1.33	8.36	0.39	10.29	6.06E-03	2.99E-03
Emergency Diesel Generator EU-14	IAA	0.49	0.22	0.22	1.33	8.36	0.39	10.29	6.06E-03	2.99E-03
Tank A	IAA	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00
Emergency Diesel Generator EU-15	IAA	0.19	0.08	0.08	0.51	3.19	0.15	3.93	2.31E-03	1.14E-03
Emergency Diesel Generator EU-16	IAA	0.33	0.15	0.15	0.91	5.68	0.26	6.99	4.12E-03	2.03E-03
Emergency Diesel Generator EU-18	IAA	0.34	0.15	0.15	0.93	5.81	0.27	7.14	4.21E-03	2.08E-03
Emergency Diesel Generator EU-21	IAA	0.07	0.07	0.07	0.07	0.51	0.08	0.22	8.93E-04	2.75E-04
Emergency Diesel Generator EU-500	IAA	0.18	0.08	0.08	0.50	3.16	0.15	3.88	2.29E-03	1.13E-03
Degreasing	IAA	0.14	0.14	0.14	0.00	0.00	2.38	0.00	0.86	0.62
Generators < 600 hp	IAA	0.30	0.30	0.30	0.28	4.24	0.00	0.91	3.73E-03	8.98E-04
Generators > 600 hp, Elec Vault	IAA	0.13	0.08	0.08	0.46	4.50	0.13	1.03	2.07E-03	1.02E-03
Generators > 600 hp, Eagle Hub	IAA	0.35	0.20	0.20	1.23	7.70	0.36	2.78	5.58E-03	2.75E-03
Boilers < 100 mmBtu/hr	IAA	0.11	0.45	0.45	0.04	5.86	0.32	4.92	0.11	0.11
Boiler 23	IAA	0.02	0.10	0.10	0.01	1.31	0.07	1.10	0.02	0.02
Emergency Diesel Generator 024	IAA	0.13	0.08	0.08	0.76	2.45	0.13	1.04	2.08E-03	1.03E-03
Natural gas heaters and boiler	IAA	0.20	0.79	0.79	0.06	10.34	0.57	8.68	0.20	0.19
Diesel Emergency Generators 025 and 026	IAA	0.47	0.47	0.47	0.44	6.63	0.54	1.43	5.80E-03	1.77E-03
IMCCEP Boiler # 1 (worst case)	JMS	6.05	14.07	14.07	86.22	83.20	6.66	85.90	2.43	2.18
IMCCEP Boiler # 2 (worst case)	JMS									
IMCCEP Boiler # 3 (worst case)	JMS									
IMCCEP Boiler # 4 (worst case)	JMS									
Generators < 600 hp	JMS	1.30	1.30	1.30	1.22	18.52	1.51	3.99	1.63E-02	4.96E-03
Generators > 600 hp	JMS	0.79	0.45	0.45	2.74	27.09	0.80	6.21	1.24E-02	6.13E-03
Ablative Coating Operation	AAR	5.25	5.25	5.25	0.00	0.00	25.00	0.00	7.56	**5.56**
Natural Gas-Fired AMU Heat & Cure Oven	AAR	0.02	0.08	0.08	0.01	1.10	0.06	0.92	0.02	0.02
Surface Coating P-2	AAR	0.92	0.92	0.92	0.00	0.00	25.00	0.00	0.84	0.44
NG Make-Up Air Heating Unit B-1	AAR	0.30	1.20	1.20	0.09	15.77	0.87	13.25	0.30	0.28
Surface Coating (Emission Units 013, 017, 018)	AAR	21.61	21.61	21.61	0.00	0.00	94.77	0.00	3.47	0.95
Emission Units from Chautauqua	CHA	0.0	0.0	0.0	0.0	0.0	negligible	0.0	negligible	negligible
ASIG: Generators > 600 hp	ASIG	0.28	0.13	0.13	0.76	4.77	0.22	5.87	3.46E-03	1.71E-03
ASIG: Tanks	ASIG	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00
Totals:		**40.47**	**48.60**	**48.60**	**99.90**	**228.55**	**162.13**	**180.78**	**15.87**	**NA**

Appendix A to the Technical Support Document - Emission Calculations
Source Wide Potential to Emit

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek
Date: December 10, 2014

Summary of Potential to Emit

		Potential To Emit (ton/yr)							HAP	
Process / Emission Unit	Location	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Total	Single
Emergency Diesel Generator EU-13	IAA	0.49	0.22	0.22	1.33	8.36	0.39	10.29	6.06E-03	2.99E-03
Emergency Diesel Generator EU-14	IAA	0.49	0.22	0.22	1.33	8.36	0.39	10.29	6.06E-03	2.99E-03
Tank A	IAA	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00
Emergency Diesel Generator EU-15	IAA	0.19	0.08	0.08	0.51	3.19	0.15	3.93	2.31E-03	1.14E-03
Emergency Diesel Generator EU-16	IAA	0.33	0.15	0.15	0.91	5.68	0.26	6.99	4.12E-03	2.03E-03
Emergency Diesel Generator EU-18	IAA	0.34	0.15	0.15	0.93	5.81	0.27	7.14	4.21E-03	2.08E-03
Emergency Diesel Generator EU-21	IAA	0.07	0.07	0.07	0.07	0.51	0.08	0.22	8.93E-04	2.75E-04
Emergency Diesel Generator EU-500	IAA	0.18	0.08	0.08	0.50	3.16	0.15	3.88	2.29E-03	1.13E-03
Degreasing	IAA	0.14	0.14	0.14	0.00	0.00	2.38	0.00	0.86	0.62
Generators < 600 hp	IAA	0.30	0.30	0.30	0.28	4.24	0.00	0.91	3.73E-03	8.98E-04
Generators > 600 hp, Elec. Vault	IAA	0.13	0.08	0.08	0.46	4.50	0.13	1.03	2.07E-03	1.02E-03
Generators > 600 hp, Eagle Hub	IAA	0.35	0.20	0.20	1.23	7.70	0.36	2.78	5.58E-03	2.75E-03
Boilers < 100 mmBtu/hr	IAA	0.11	0.45	0.45	0.04	5.86	0.32	4.92	0.11	0.11
Boiler 23	IAA	0.02	0.10	0.10	0.01	1.31	0.07	1.10	0.02	0.02
Emergency Diesel Generator 024	IAA	0.13	0.08	0.08	0.76	2.45	0.13	1.04	2.08E-03	1.03E-03
Natural gas heaters and boiler	IAA	0.20	0.79	0.79	0.06	10.34	0.57	8.68	0.20	0.19
Diesel Emergency Generators 025 and 026	IAA	0.47	0.47	0.47	0.44	6.63	0.54	1.43	5.80E-03	1.77E-03
IMCCEP Boiler # 1 (worst case)	JMS	0.79	1.31	1.31	15.73	7.91	0.30	4.54	0.13	0.10
IMCCEP Boiler # 2 (worst case)	JMS	1.58	2.61	2.61	31.46	15.82	0.60	9.09	0.26	0.19
IMCCEP Boiler # 3 (worst case)	JMS	7.66	12.64	12.64	152.30	99.54	2.88	44.01	1.24	0.94
IMCCEP Boiler # 4 (worst case)	JMS	7.66	12.64	12.64	152.30	99.54	2.88	44.01	1.24	0.94
Generators < 600 hp	JMS	1.30	1.30	1.30	1.22	18.52	1.51	3.99	1.63E-02	4.96E-03
Generators > 600 hp	JMS	0.79	0.45	0.45	2.74	27.09	0.80	6.21	1.24E-02	6.13E-03
Ablative Coating Operation	AAR	5.25	5.25	5.25	0.00	0.00	26.37	0.00	7.56	**5.56**
Natural Gas-Fired AMU Heat & Cure Oven	AAR	0.02	0.08	0.08	0.01	1.10	0.06	0.92	0.02	0.02
Surface Coating P-2	AAR	0.92	0.92	0.92	0.00	0.00	25.00	0.00	0.84	0.44
NG Make-Up Air Heating Unit B-1	AAR	0.30	1.20	1.20	0.09	15.77	0.87	13.25	0.30	0.28
Surface Coating (Emission Units 013, 017, 018)	AAR	57.93	57.93	57.93	0.00	0.00	94.77	0.00	3.47	0.95
Emission Units from Chautauqua	CHA	0.0	0.0	0.0	0.0	0.0	negligible	0.0	negligible	negligible
ASIG: Generators > 600 hp	ASIG	0.28	0.13	0.13	0.76	4.77	0.22	5.87	3.46E-03	1.71E-03
ASIG: Tanks	ASIG	0.0	0.0	0.0	0.0	0.0	0.70	0.0	0.00E+00	0
Totals:		**88.43**	**100.05**	**100.05**	**365.47**	**368.16**	**163.51**	**196.53**	**16.31**	**NA**
									1.23	

Appendix A to the Technical Support Document - Emission Calculations
Indianapolis Airport Authority - Generator 13

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	2200.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	1,100,000
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM**	PM10*	PM2.5*	SO2	NOx**	VOC*	CO**
Emission Factor in lb/hp-hr	8.82E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	1.52E-02	7.05E-04	1.87E-02
Potential Emission in tons/yr	0.49	0.22	0.22	1.33	8.36	0.39	10.29

*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 3.4-2). Assume PM2.5 = PM10. VOC = Table 3.4-1.

**PM, NOx and CO emission factors taken from 40 CFR 60, Subpart IIII Table 1

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	2.99E-03	1.08E-03	7.43E-04	3.04E-04	9.70E-05	3.03E-05	8.16E-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 3.4-3).

Potential Emission of Total HAPs (tons/yr)	6.06E-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 to the Technical Support Document - Emission Calculations
IAA Emergency Generator 14

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	2200.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	1,100,000
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM**	PM10*	PM2.5*	SO2	NOx**	VOC	CO**
Emission Factor in lb/hp-hr	8.82E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	1.52E-02	7.05E-04	1.87E-02
Potential Emission in tons/yr	0.49	0.22	0.22	1.33	8.36	0.39	10.29

*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 3.4-2). PM2.5 = PM10, VOC Table 3.4-1

**PM, NOx and CO emission factors taken from 40 CFR 60, Subpart IIII Table 1

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	2.99E-03	1.08E-03	7.43E-04	3.04E-04	9.70E-05	3.03E-05	8.16E-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 3.4-3).

Potential Emission of Total HAPs (tons/yr)	6.06E-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 to the Technical Support Document - Emission Calculations
IAA - Tank A

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Storage Tanks ID	Product Stored	Type of Tank	Tank Volumes	Tank Volumes (gal)	Date Installed
Stand A	Jet Fuel	Internal Floating Roof	113,825	840,000	1978
Stand B-East	(Removed under 35016)				
Stand B-West					

Storage Tanks ID	Tank Volumes (gal)	Turnovers	Throughput (Gal)	Working Loss	Working Loss Lbs/1000 gal	Breathing Loss
Stand A	840,000	57.14	40000000	204	0.0051	512
Stand B-East	(Removed under 35016)					
Stand B-West						
			40000000	204	0.0051	512

Maximum Product throughput (gal/yr)	40,000,000
Maximum working loss (lbs/1000 gal)	0.0051
Max emissions from Working Loss (lbs/yr)	204
Breathing Loss for Product, (lbs/yr)	512.18
Total Emissions from Product (tons/yr)	0.36

The US EPA TANKS program was used to estimate the breathing and working losses from each tank

For each Tank, the withdrawal loss was then divided by the throughput that was placed in the TANKS4 program to determine the worst case unit working loss (lbs/1000 gallons)

Appendix A to the Technical Support Document - Emission Calculations
IAA Emergency Generator 15

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	840
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	420,000
Sulfur Content (S) of Fuel (% by weight)	0.3

	Pollutant						
	PM**	PM10*	PM2.5*	SO2	NOx**	VOC	CO**
Emission Factor in lb/hp-hr	8.82E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	1.52E-02	7.05E-04	1.87E-02
Potential Emission in tons/yr	0.19	0.08	0.08	0.51	3.19	0.15	3.93

*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 3.4-2). PM2.5 = PM10, VOC = Table 3.4-1.

**PM, NOx and CO emission factors taken from 40 CFR 60, Subpart IIII Table 1

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Form.	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	1.14E-03	4.13E-04	2.84E-04	1.16E-04	3.70E-05	1.16E-05	3.12E-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 3.4-3).

Potential Emission of Total HAPs (tons/yr)	**2.31E-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]

Form. = formaldehyde

Appendix A to the Technical Support Document - Emission Calculations
IAA Emergency Generator 16

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	**T097-35016-00156**	**2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive**
Johnson Melloh Solutions (JMS)	**T097-34078-00586**	**2745 South Hoffman Road, Suite 504**
AAR Aircraft Services, Indianapolis (AAR)	**T097-33261-00559**	**2825 West Perimeter Road**
Chautauqua Airlines (CHA)	**T097-35018-00668**	**2745 South Hoffman Road, Dock 67, Hng 7A-7B**
ASIG Aircraft Services International Group	**T097-35006-00667**	**2050 South Hoffman Road**

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	1495
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	747,500
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM**	PM10*	PM2.5*	SO2	NOx**	VOC	CO**
Emission Factor in lb/hp-hr	8.82E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	1.52E-02	7.05E-04	1.87E-02
Potential Emission in tons/yr	0.33	0.15	0.15	0.91	5.68	0.26	6.99

*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 3.4-2). PM2.5=PM10, VOC = Table 3.4-1.

**PM, NOx and CO emission factors taken from 40 CFR 60, Subpart IIII Table 1

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	2.03E-03	7.35E-04	5.05E-04	2.06E-04	6.59E-05	2.06E-05	5.55E-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 3.4-3).

Potential Emission of Total HAPs (tons/yr)	**4.12E-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 to the Technical Support Document - Emission Calculations
IAA Emergency Generator 18

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	**T097-35016-00156**	**2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive**
Johnson Melloh Solutions (JMS)	**T097-34078-00586**	**2745 South Hoffman Road, Suite 504**
AAR Aircraft Services, Indianapolis (AAR)	**T097-33261-00559**	**2825 West Perimeter Road**
Chautauqua Airlines (CHA)	**T097-35018-00668**	**2745 South Hoffman Road, Dock 67, Hng 7A-7B**
ASIG Aircraft Services International Group	**T097-35006-00667**	**2050 South Hoffman Road**

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	1528
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	764,000
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM**	PM10*	PM2.5*	SO2	NOx**	VOC	CO**
Emission Factor in lb/hp-hr	8.82E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	1.52E-02	7.05E-04	1.87E-02
Potential Emission in tons/yr	0.34	0.15	0.15	0.93	5.81	0.27	7.14

*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 3.4-2). PM2.5=PM10, VOC = Table 3.4-1.

**PM, NOx and CO emission factors taken from 40 CFR 60, Subpart IIII Table 1

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	2.08E-03	7.51E-04	5.16E-04	2.11E-04	6.74E-05	2.11E-05	5.67E-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 3.4-3).

Potential Emission of Total HAPs (tons/yr)	**4.21E-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 to the Technical Support Document - Emission Calculations
IAA Emergency Generator 21

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	133
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	66,500
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM	PM10*	PM2.5*	SO2	NOx**	VOC	CO
Emission Factor in lb/hp-hr	2.20E-03	2.20E-03	2.20E-03	2.05E-03	1.52E-02	2.51E-03	6.68E-03
Potential Emission in tons/yr	0.07	0.07	0.07	0.07	0.51	0.08	0.22

*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). PM=PM10=PM2.5. VOC and CO Table 3.3-1.

**NOx emission factor was taken from 40 CFR 60, Subpart IIII Table 1

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	2.17E-04	9.51E-05	6.65E-05	2.75E-04	1.79E-04	2.15E-05	3.92E-05

***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 3.3-2).

Potential Emission of Total HAPs (tons/yr)	**8.93E-04**

Methodology

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.3-1 , 3.3-2, 3.3-3

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 to the Technical Support Document - Emission Calculations
Emergency Standby Generator 500 Hours

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	831
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	415,500
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM**	PM10*	PM2.5*	SO2	NOx**	VOC	CO**
Emission Factor in lb/hp-hr	8.82E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	1.52E-02	7.05E-04	1.87E-02
Potential Emission in tons/yr	0.18	0.08	0.08	0.50	3.16	0.15	3.88

*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 3.4-2). PM2.5 = PM10, VOC = Table 3.4-1

**PM, NOx and CO emission factors taken from 40 CFR 60, Subpart IIII Table 1

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	1.13E-03	4.09E-04	2.81E-04	1.15E-04	3.66E-05	1.15E-05	3.08E-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 3.4-3).

Potential Emission of Total HAPs (tons/yr)	**2.29E-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 to the Technical Support Document - Emission Calculations
IAA Surface Coating & Degreasing & Storage Tanks

Collocated Sources:	**Permit Numbers**	**Address - Indianapolis, Indiana 46241**
Indianapolis Airport Authority (IAA)	**T097-35016-00156**	**2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive**
Johnson Melloh Solutions (JMS)	**T097-34078-00586**	**2745 South Hoffman Road, Suite 504**
AAR Aircraft Services, Indianapolis (AAR)	**T097-33261-00559**	**2825 West Perimeter Road**
Chautauqua Airlines (CHA)	**T097-35018-00668**	**2745 South Hoffman Road, Dock 67, Hng 7A-7B**
ASIG Aircraft Services International Group	**T097-35006-00667**	**2050 South Hoffman Road**

Permit Reviewer: **David Matousek**

Date: **December 10, 2014**

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	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	PM/PM10 (ton/yr)	lb VOC/gal solids	Transfer Efficiency
PPG DBU-1 Deltron Basecoat	8.6	66.00%	0.0%	66.0%	0.0%	47.00%	0.03750	1.000	5.64	5.64	0.21	5.08	0.93	0.14	12.01	70%
PPG DRR1170 Reducer	7.1	96.44%	0.0%	96.4%	0.0%	2.75%	0.01250	1.000	6.88	6.88	0.09	2.06	0.38	0.00	250.04	NA
Worst case coating/promotor, reducer, remover											**0.30**	**7.14**	**1.3**	**0.14**		
consumption, gallons per day							**1.20**									

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
PM10 emission is assumed equal to PM
PM/PM10 Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Degreasing

2 tanks x 145 gallons maximum usage each/12 months x 7.36 lbs VOC/gallon x ton/2000 pounds **1.07** tons VOC/yr

Storage Tanks

IAA submitted with application that small storage tanks at IAA have the potential to emit **0.01** tons VOC/yr

Hazardous Air Pollutants (HAPs)

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum Usage (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Ethyl Benzene	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Combined HAP Emissions (ton/yr)
PPG DBU-1 Deltron Basecoat	8.6	0.03750	1.0	10.00%	40.00%	5.00%	0.14	0.57	0.07	0.78
PPG DRR1170 Reducer	7.1	0.012500	1.0	7.00%	13.00%	1.00%	0.03	0.05	0.004	0.08
Total State Potential Emissions							**0.17**	**0.62**	**0.07**	**0.86**

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A to the Technical Support Document - Emission Calculations
IAA Emergency Generators
Diesel Fuel < 600 HP

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road
	Permit Reviewer:	David Matousek
	Date:	December 10, 2014

Unit Location	horsepower	
Main Terminal -LAN Room		(226 hp removed under 35016)
South Tug Guard Shack	70	
Gate 10 Guard Shack	70	
Midfield Road Access Gate	70	
Main Terminal -Main Concourse		(535 hp removed under 35016)
Airport Fire Station		(300 hp removed under 31891)
Airfield Maintenance Bldg.	340	
Midfield Program Office		(600 hp removed under 31891)
sum total	550	hp
	3.850	MMBtu/hr

max heat input MMBtu / hr
3.9

	PM	PM10/2.5	SOx	NOx	VOC	CO
Emission Factor lbs / MMBtu	0.31	0.31	0.29	4.41	2.51E-03	0.95
Potential Emissions lbs / hr	1.19	1.19	1.12	16.98	0.01	3.66
tons / yr @ 500 hrs / yr	0.30	0.30	0.28	4.24	0.00	0.91

Methodology

AP-42 App. A Conversion Factor: 7000 Btu/horsepower hr
Emission Factor (lbs / MMBtu): from AP-42 Table 3.3-1 & 3.3-2 Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines
Diesel fuel Btu: 137000 Btu/gal (per AP-42 Appendix A)
Potential Emissions (lbs / hr): emfac x heat input
Potential Emissions (tons / yr): lbs / hr emissions x 500 operating hrs / yr x ton / 2000 lbs

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Potential Emission in tons/yr	8.98E-04	3.94E-04	2.74E-04	3.76E-05	1.14E-03	7.38E-04	8.90E-05	1.62E-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).

Methodology

Potential Emission of Total HAPs (tons/yr)	3.73E-03

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
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 to the Technical Support Document - Emission Calculations
IAA Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)
Airfield Maintenance Electrical Vault Generator Cummins Model 1010 Straight 6

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	750.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	375,000
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM*	PM10*	PM2.5*	SO2*	NOx**	VOC*	CO*
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	2.40E-02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.13	0.08	0.08	0.46	4.50	0.13	1.03

*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 3.4-1). PM2.5=PM10

**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	1.02E-03	3.69E-04	2.53E-04	1.04E-04	3.31E-05	1.03E-05	2.78E-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 3.4-3).

Potential Emission of Total HAPs (tons/yr)	**2.07E-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 to the Technical Support Document - Emission Calculations
IAA Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)
Eagle Hub Emergency Generator

Collocated Sources:	**Permit Numbers**	**Address - Indianapolis, Indiana 46241**
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	2,025.00
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	1,012,500
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM*	PM10*	PM2.5*	SO2*	NOx**	VOC*	CO*
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	1.52E-02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.35	0.20	0.20	1.23	7.70	0.36	2.78

*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 3.4-1). PM2.5=PM10

**NOx emission factor: Provided by Permittee

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	2.75E-03	9.96E-04	6.84E-04	2.80E-04	8.93E-05	2.79E-05	7.51E-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 3.4-3).

Potential Emission of Total HAPs (tons/yr)	**5.58E-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 to the Technical Support Document - Emission Calculations
IAA Misc. Natural Gas Combustion Only
MMBTU/HR <100

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	
EU-04	8.998	78.8	
EU-05	2.247	19.7	
EU-19	1.00	8.8	
EU-20	1.00	8.8	
EU-22	0.125	1.1	
(2) 2009 Boilers		0.0	2x 0.5 MMBtu boilers removed under 31891
Total	13.370	117.1	

		Pollutant						
Emission Factor in lb/MMCF		PM* 1.9	PM10* 7.6	PM2.5* 7.6	SO2 0.6	NOx 100 **see below	VOC 5.5	CO 84
Potential Emission in tons/yr	EU-04	0.07	0.30	0.30	0.02	3.94	0.22	3.31
	EU-05	0.02	0.07	0.07	0.01	0.98	0.05	0.83
	EU-19	0.01	0.03	0.03	2.63E-03	0.44	0.02	0.37
	EU-20	0.01	0.03	0.03	2.63E-03	0.44	0.02	0.37
	EU-22	1.04E-03	4.16E-03	4.16E-03	3.29E-04	0.05	3.01E-03	0.05
	(2) 2009 Boilers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	**0.11**	**0.45**	**0.45**	**0.04**	**5.86**	**0.32**	**4.92**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 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/1,000 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

		HAPs - Organics				
		Benzene	zene	de	Hexane	Toluene
Emission Factor in lb/MMcf		2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	Total	1.2E-04	7.0E-05	4.4E-03	1.1E-01	2.0E-04
		HAPs - Metals				
		Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf		5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	Total	2.9E-05	6.4E-05	8.2E-05	2.2E-05	1.2E-04

Potential Emission of Total HAPs (tons/yr)	**1.1E-01**

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A to the Technical Support Document - Emission Calculations
IAA Boiler No. 23
Utility Boiler

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
3.0	26.28

	Pollutant					
	PM*	PM10/2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.02	0.10	0.01	1.31	0.07	1.10

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 280 (pre-NSPS) or 190 (post-NSPS), Low NOx Burner = 140, Flue gas recirculation = 100 (See Table 1.4-1)

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supplement D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.10E-03	1.20E-03	7.50E-02	1.80E+00	3.40E-03
Potential Emission in tons/yr	2.8E-05	1.6E-05	9.9E-04	2.4E-02	4.5E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
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	6.6E-06	1.4E-05	1.8E-05	5.0E-06	2.8E-05

Total HAPs **2.5E-02**

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A to the Technical Support Document - Emission Calculations
IAA Large Reciprocating Internal Combustion Engines - Diesel Fuel - EU024
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	755.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	377,500
Sulfur Content (S) of Fuel (% by weight)	0.500

	Pollutant						
	PM*	PM10*	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)*	1.30E-02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.13	0.08	0.08	0.76	2.45	0.13	1.04

*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 3.4-2). PM10=PM2.5

**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	1.03E-03	3.71E-04	2.55E-04	1.04E-04	3.33E-05	1.04E-05	2.80E-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)	**2.08E-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

Methodology

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 to the Technical Support Document - Emission Calculations
IAA Natural Gas Combustion Only < 100 MMBtu/hr

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Unit Location	MMBtu/hr
International Arrivals	2.25
12 Heaters Bldg. 100	10.56
10 Heaters Bldg. 105	2.50
Ten Heaters Bldg. 53	2.00
Eleven Heaters Bldg. 54	0.66
Eagle Hub	2.72
Four Ambi-Rad Htrs FH2	0.60
Five Ambi-Rad Htrs AMB5	0.75
Three Sterling Htrs AMB6	0.30
Two Heaters FH1	0.50
Six RG Htrs FH1	0.48
One Carrier roof top FH1	0.08
One Heater AMB2	0.13
Two Boilers	0.08
sum total	23.605

Heat Input Capacity MMBtu/hr	HHV MMBtu/MMCF	Potential Throughput MMCF/yr
23.605	1000	206.78

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.20	0.79	0.79	0.06	10.34	0.57	8.68

*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

Hazardous Air Pollutants (HAPs)

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMCF	2.10E-03	1.20E-03	7.50E-02	1.80E+00	3.40E-03
Potential Emission in tons/yr	2.2E-04	1.2E-04	7.8E-03	1.9E-01	3.5E-04
	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMCF	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	5.2E-05	1.1E-04	1.4E-04	3.9E-05	2.2E-04

0.20 Total HAP

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A to the Technical Support Document - Emission Calculations
IAA Reciprocating Internal Combustion Engines - Generators 025 and 026
Output Rating (<=600 HP) Maximum Input Rate (<=4.2 MMBtu/hr)

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	380	Emergency Generator 025
Output Horsepower Rating (hp)	476	Emergency Generator 026
Total (hp)	**856**	

Maximum Hours Operated per Year	500	380 hp located at Building 60 and 476 hp located at Fire House 2
Potential Throughput (hp-hr/yr)	428,000	

	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	0.47	0.47	0.47	0.44	6.63	0.54	1.43

*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	1.40E-03	6.13E-04	4.27E-04	5.86E-05	1.77E-03	1.15E-03	1.39E-04	2.52E-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)	**5.80E-03**

Appendix A to the Technical Support Document - Emission Calculations
Potential to Emit - Boiler #1 at Johnson Melloh Solutions - IMC Central Energy Plant

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	**T097-35016-00156**	**2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive**
Johnson Melloh Solutions (JMS)	**T097-34078-00586**	**2745 South Hoffman Road, Suite 504**
AAR Aircraft Services, Indianapolis (AAR)	**T097-33261-00559**	**2825 West Perimeter Road**
Chautauqua Airlines (CHA)	**T097-35018-00668**	**2745 South Hoffman Road, Dock 67, Hng 7A-7B**
ASIG Aircraft Services International Group	**T097-35006-00667**	**2050 South Hoffman Road**

Permit Reviewer: David Matousek

Date: December 10, 2014

Maximum Heat Input Capacity	12.6 MMBtu/hr	or	110,376 MMBtu/yr		
Heat Content Fuel Oil	139.50 MMBtu/kgal				
Heat Content Natural Gas	1,020.00 MMBtu/MMCF				
Max. Fuel Oil Usage (Current Permit S Content)	791.23 kgal/yr	at	2,800 ppm S	0.28 % S	
Maximum Natural Gas Usage	108.21 MMCF/yr				

Potential to Emit

	Emission Factor (Natural Gas / Fuel Oil)	Throughput	PTE (TPY)	Worst Case PTE (TPY)	Emission Factor Source
PM	1.9 lb/MMCF	108.21 MMCF/yr	0.10	0.79	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	2 lb/kgal	791.23 kgal/yr	0.79		AP-42, Ch. 1.3, 5/2010, Table 1.3-1
PM_{10} / Direct $PM_{2.5}$	7.6 lb/MMCF	108.21 MMCF/yr	0.41	1.31	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	3.3 lb/kgal	791.23 kgal/yr	1.31		AP-42, Ch. 1.3, 5/2010, Table 1.3-1, 1.3-2
SO_2	0.6 lb/MMCF	108.21 MMCF/yr	0.03	15.73	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	39.76 lb/kgal	791.23 kgal/yr	15.73		AP-42, Ch. 1.3, 5/2010, Table 1.3-1, 142S
VOC	5.5 lb/MMCF	108.21 MMCF/yr	0.30	0.30	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	0.252 lb/kgal	791.23 kgal/yr	0.10		AP-42, Ch. 1.3, 5/2010, Table 1.3-3
CO	84 lb/MMCF	108.21 MMCF/yr	4.54	4.54	AP-42, Ch. 1.4, 7/1998, Table 1.4-1
	5 lb/kgal	791.23 kgal/yr	1.98		AP-42, Ch. 1.3, 5/2010, Table 1.3-1
NO_x	100 lb/MMCF	108.21 MMCF/yr	5.41	7.91	AP-42, Ch. 1.4, 7/1998, Table 1.4-1
	20 lb/kgal	791.23 kgal/yr	7.91		AP-42, Ch. 1.3, 5/2010, Table 1.3-1
CO_2	53.06 kg/MMBtu	110,376 MMBtu/yr	6,455.68	9,149.39	40 CFR 98, Subpart C, Table C-1
	75.20 kg/MMBtu	110,376 MMBtu/yr	9,149.39		40 CFR 98, Subpart C, Table C-1
CH_4	1.00E-03 kg/MMBtu	110,376 MMBtu/yr	0.12	0.37	40 CFR 98, Subpart C, Table C-2
	3.00E-03 kg/MMBtu	110,376 MMBtu/yr	0.37		40 CFR 98, Subpart C, Table C-2
N_2O	1.00E-04 kg/MMBtu	110,376 MMBtu/yr	0.01	0.07	40 CFR 98, Subpart C, Table C-2
	6.00E-04 kg/MMBtu	110,376 MMBtu/yr	0.07		40 CFR 98, Subpart C, Table C-2
CO_2e				9,179.50	Calculated

Methodology:

1) Throughput (MMCF/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/MMCF)
2) Throughput (kgal/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/kgal)
3) PTE (TPY) = Emission Factor (lb/MMCF) x Usage (MMCF/yr) x 1 ton/2,000 lb
4) PTE (TPY) = Emission Factor (lb/kgal) x Usage (kgal/yr) x 1 ton/2,000 lb
5) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Usage (MMBtu/yr) x 1 ton/2,000 lb
6) CO_2e (TPY) = CO_2 Emissions + (CH_4 Emissions x Global Warming Potential (25)) + (N_2O Emissions x (Global Warming Potential 298))
7) Worst Case PTE (TPY) = Highest Potential Emission Rate (TPY) of Fuel Oil Combustion and Natural Gas Combustion for each pollutant.

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Appendix A to the Technical Support Document - Emission Calculations
Potential to Emit - Boiler #1 at Johnson Melloh Solutions - IMC Central Energy Plant

(Continued from Previous Page)

	Potential to Emit				
	Emission Factor (Natural Gas / Fuel Oil)	**Throughput**	**PTE (TPY)**	**Worst Case PTE (TPY)**	**Emission Factor Source**
	None	None	None		No emission factor
1,1,1-Trichloroethane	2.36E-04 lb/kgal	791.23 kgal/yr	9.34E-05	9.34E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	108.21 MMCF/yr	1.30E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
2-methylnaphthalene	None	None	None	1.30E-06	No emission factor
	1.80E-06 lb/MMCF	108.21 MMCF/yr	9.74E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
3-methylchloranthrene	None	None	None	9.74E-08	No emission factor
	1.60E-05 lb/MMCF	108.21 MMCF/yr	8.66E-07		No emission factor
7,12-dimethylbenz(a)anthracene	None	None	None	8.66E-07	No emission factor
	1.80E-06 lb/MMCF	108.21 MMCF/yr	9.74E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthene	2.11E-05 lb/kgal	791.23 kgal/yr	8.35E-06	8.35E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	108.21 MMCF/yr	9.74E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthylene	2.53E-07 lb/kgal	791.23 kgal/yr	1.00E-07	1.00E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-06 lb/MMCF	108.21 MMCF/yr	1.30E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Anthracene	1.22E-06 lb/kgal	791.23 kgal/yr	4.83E-07	4.83E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.00E-04 lb/MMCF	108.21 MMCF/yr	1.08E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Arsenic	4.00E-06 lb/MMBtu	110,376 MMBtu/yr	2.21E-04	2.21E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	108.21 MMCF/yr	9.74E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benz(a)anthracene	4.01E-06 lb/kgal	791.23 kgal/yr	1.59E-06	1.59E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	108.21 MMCF/yr	1.14E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzene	2.14E-04 lb/kgal	791.23 kgal/yr	8.47E-05	1.14E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	108.21 MMCF/yr	6.49E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(a)pyrene	None	None	None	6.49E-08	No emission factor
	1.80E-06 lb/MMCF	108.21 MMCF/yr	9.74E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(b)fluoranthene	None	None	None	9.74E-08	No emission factor
	1.20E-06 lb/MMCF	108.21 MMCF/yr	6.49E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(g,h,i)perylene	2.26E-06 lb/kgal	791.23 kgal/yr	8.94E-07	8.94E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	108.21 MMCF/yr	9.74E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(k)fluoranthene	None	None	None	9.74E-08	No emission factor
	1.20E-05 lb/MMCF	108.21 MMCF/yr	6.49E-07		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Beryllium	3.00E-06 lb/MMBtu	110,376 MMBtu/yr	1.66E-04	1.66E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.10E-03 lb/MMCF	108.21 MMCF/yr	5.95E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Cadmium	3.00E-06 lb/MMBtu	110,376 MMBtu/yr	1.66E-04	1.66E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.40E-03 lb/MMCF	108.21 MMCF/yr	7.57E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Chromium	3.00E-06 lb/MMBtu	110,376 MMBtu/yr	1.66E-04	1.66E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	108.21 MMCF/yr	9.74E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Chrysene	2.38E-06 lb/kgal	791.23 kgal/yr	9.42E-07	9.42E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	108.21 MMCF/yr	6.49E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dibenzo(a,h)anthracene	1.67E-06 lb/kgal	791.23 kgal/yr	6.61E-07	6.61E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-03 lb/MMCF	108.21 MMCF/yr	6.49E-05		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dichlorobenzene	None	None	None	6.49E-05	No emission factor
	None	None	None		No emission factor
Ethylbenzene	6.36E-05 lb/kgal	791.23 kgal/yr	2.52E-05	2.52E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

(Continued on Next Page)

Potential to Emit - Boiler #1 at Johnson Melloh Solutions - IMC Central Energy Plant

(Continued from Previous Page)

Potential to Emit					
	Emission Factor (Natural Gas / Fuel Oil)	**Throughput**	**PTE (TPY)**	**Worst Case PTE (TPY)**	**Emission Factor Source**
	3.00E-06 lb/MMCF	108.21 MMCF/yr	1.62E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluoranthene	4.84E-06 lb/kgal	791.23 kgal/yr	1.91E-06	1.91E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.80E-06 lb/MMCF	108.21 MMCF/yr	1.51E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluorene	4.47E-06 lb/kgal	791.23 kgal/yr	1.77E-06	1.77E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	7.50E-02 lb/MMCF	108.21 MMCF/yr	4.06E-03		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Formaldehyde	0.061 lb/kgal	791.23 kgal/yr	2.41E-02	2.41E-02	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	1.8 lb/MMCF	108.21 MMCF/yr	0.10		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Hexane	None	None	None	0.10	No emission factor
	1.80E-06 lb/MMCF	108.21 MMCF/yr	9.74E-08		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Indo(1,2,3-cd)pyrene	2.14E-06 lb/kgal	791.23 kgal/yr	8.47E-07	8.47E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Lead	9.00E-06 lb/MMBtu	110,376 MMBtu/yr	4.97E-04	4.97E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.80E-04 lb/MMCF	108.21 MMCF/yr	2.06E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Manganese	6.00E-06 lb/MMBtu	110,376 MMBtu/yr	3.31E-04	3.31E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	2.60E-04 lb/MMCF	108.21 MMCF/yr	1.41E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Mercury	3.00E-06 lb/MMBtu	110,376 MMBtu/yr	1.66E-04	1.66E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	6.10E-04 lb/MMCF	108.21 MMCF/yr	3.30E-05		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Naphthalene	1.13E-03 lb/kgal	791.23 kgal/yr	4.47E-04	4.47E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	108.21 MMCF/yr	1.14E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Nickel	3.00E-06 lb/MMBtu	110,376 MMBtu/yr	1.66E-04	1.66E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.70E-05 lb/MMCF	108.21 MMCF/yr	9.20E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Phenanthrene	1.05E-05 lb/kgal	791.23 kgal/yr	4.15E-06	4.15E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Polycyclic Organic Matter	0.0033 lb/kgal	791.23 kgal/yr	1.31E-03	1.31E-03	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	5.00E-06 lb/MMCF	108.21 MMCF/yr	2.71E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Pyrene	4.25E-06 lb/kgal	791.23 kgal/yr	1.68E-06	1.68E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	108.21 MMCF/yr	1.30E-06		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Selenium	1.50E-06 lb/MMBtu	110,376 MMBtu/yr	8.28E-05	8.28E-05	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.40E-03 lb/MMCF	108.21 MMCF/yr	1.84E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Toluene	6.30E-03 lb/kgal	791.23 kgal/yr	2.49E-03	2.49E-03	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Xylene	1.09E-04 lb/kgal	791.23 kgal/yr	4.31E-05	4.31E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

Worst Case HAP at PTE **0.10 TPY** **(Hexane)**

Total HAP at PTE **0.13 TPY**

Appendix A to the Technical Support Document - Emission Calculations
Potential to Emit - Boiler #2 at Johnson Melloh Solutions - IMC Central Energy Plant

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Maximum Heat Input Capacity	25.2	MMBtu/hr	or	220,752	MMBtu/yr	
Heat Content Fuel Oil	139.50	MMBtu/kgal				
Heat Content Natural Gas	1,020.00	MMBtu/MMCF				
Max. Fuel Oil Usage (Current Permit S Content)	1,582.45	kgal/yr	at	2,800	ppm S	0.28 % S
Maximum Natural Gas Usage	216.42	MMCF/yr				

Potential to Emit

	Emission Factor (Natural Gas / Fuel Oil)	Throughput	PTE (TPY)	Worst Case PTE (TPY)	Emission Factor Source
PM	1.9 lb/MMCF	216.42 MMCF/yr	0.21	1.58	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	2 lb/kgal	1,582.45 kgal/yr	1.58		AP-42, Ch. 1.3, 5/2010, Table 1.3-1
PM_{10} / Direct $PM_{2.5}$	7.6 lb/MMCF	216.42 MMCF/yr	0.82	2.61	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	3.3 lb/kgal	1,582.45 kgal/yr	2.61		AP-42, Ch. 1.3, 5/2010, Table 1.3-1, 1.3-2
SO_2	0.6 lb/MMCF	216.42 MMCF/yr	0.06	31.46	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	39.76 lb/kgal	1,582.45 kgal/yr	31.46		AP-42, Ch. 1.3, 5/2010, Table 1.3-1, 142S
VOC	5.5 lb/MMCF	216.42 MMCF/yr	0.60	0.60	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	0.252 lb/kgal	1,582.45 kgal/yr	0.20		AP-42, Ch. 1.3, 5/2010, Table 1.3-3
CO	84 lb/MMCF	216.42 MMCF/yr	9.09	9.09	AP-42, Ch. 1.4, 7/1998, Table 1.4-1
	5 lb/kgal	1,582.45 kgal/yr	3.96		AP-42, Ch. 1.3, 5/2010, Table 1.3-1
NO_x	100 lb/MMCF	216.42 MMCF/yr	10.82	15.82	AP-42, Ch. 1.4, 7/1998, Table 1.4-1
	20 lb/kgal	1,582.45 kgal/yr	15.82		AP-42, Ch. 1.3, 5/2010, Table 1.3-1
CO_2	53.06 kg/MMBtu	220,752 MMBtu/yr	12,911.35	18,298.79	40 CFR 98, Subpart C, Table C-1
	75.20 kg/MMBtu	220,752 MMBtu/yr	18,298.79		40 CFR 98, Subpart C, Table C-1
CH_4	1.00E-03 kg/MMBtu	220,752 MMBtu/yr	0.24	0.73	40 CFR 98, Subpart C, Table C-2
	3.00E-03 kg/MMBtu	220,752 MMBtu/yr	0.73		40 CFR 98, Subpart C, Table C-2
N_2O	1.00E-04 kg/MMBtu	220,752 MMBtu/yr	0.02	0.15	40 CFR 98, Subpart C, Table C-2
	6.00E-04 kg/MMBtu	220,752 MMBtu/yr	0.15		40 CFR 98, Subpart C, Table C-2
CO_2e				18,361.74	Calculated

Methodology:
1) Throughput (MMCF/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/MMCF)
2) Throughput (kgal/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/kgal)
3) PTE (TPY) = Emission Factor (lb/MMCF) x Usage (MMCF/yr) x 1 ton/2,000 lb
4) PTE (TPY) = Emission Factor (lb/kgal) x Usage (kgal/yr) x 1 ton/2,000 lb
5) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Usage (MMBtu/yr) x 1 ton/2,000 lb
6) CO_2e (TPY) = CO_2 Emissions + (CH_4 Emissions x Global Warming Potential (25)) + (N_2O Emissions x (Global Warming Potential 298))
7) Worst Case PTE (TPY) = Highest Potential Emission Rate (TPY) of Fuel Oil Combustion and Natural Gas Combustion for each pollutant.

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Appendix A to the Technical Support Document - Emission Calculations
Potential to Emit - Boiler #2 at Johnson Melloh Solutions - IMC Central Energy Plant

(Continued from Previous Page)

	Potential to Emit				
	Emission Factor (Natural Gas / Fuel Oil)	**Throughput**	**PTE (TPY)**	**Worst Case PTE (TPY)**	**Emission Factor Source**
	None	None	None		No emission factor
1,1,1-Trichloroethane	2.36E-04 lb/kgal	1,582.45 kgal/yr	1.87E-04	1.87E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	216.42 MMCF/yr	2.60E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
2-methylnaphthalene	None	None	None	2.60E-06	No emission factor
	1.80E-06 lb/MMCF	216.42 MMCF/yr	1.95E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
3-methylchloranthrene	None	None	None	1.95E-07	No emission factor
	1.60E-05 lb/MMCF	216.42 MMCF/yr	1.73E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
7,12-dimethylbenz(a)anthracene	None	None	None	1.73E-06	No emission factor
	1.80E-06 lb/MMCF	216.42 MMCF/yr	1.95E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthene	2.11E-05 lb/kgal	1,582.45 kgal/yr	1.67E-05	1.67E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	216.42 MMCF/yr	1.95E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthylene	2.53E-07 lb/kgal	1,582.45 kgal/yr	2.00E-07	2.00E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-06 lb/MMCF	216.42 MMCF/yr	2.60E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Anthracene	1.22E-06 lb/kgal	1,582.45 kgal/yr	9.65E-07	9.65E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.00E-04 lb/MMCF	216.42 MMCF/yr	2.16E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Arsenic	4.00E-06 lb/MMBtu	220,752 MMBtu/yr	4.42E-04	4.42E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	216.42 MMCF/yr	1.95E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benz(a)anthracene	4.01E-06 lb/kgal	1,582.45 kgal/yr	3.17E-06	3.17E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	216.42 MMCF/yr	2.27E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzene	2.14E-04 lb/kgal	1,582.45 kgal/yr	1.69E-04	2.27E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	216.42 MMCF/yr	1.30E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(a)pyrene	None	None	None	1.30E-07	No emission factor
	1.80E-06 lb/MMCF	216.42 MMCF/yr	1.95E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(b)fluoranthene	None	None	None	1.95E-07	No emission factor
	1.20E-06 lb/MMCF	216.42 MMCF/yr	1.30E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(g,h,i)perylene	2.26E-06 lb/kgal	1,582.45 kgal/yr	1.79E-06	1.79E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	216.42 MMCF/yr	1.95E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(k)fluoranthene	None	None	None	1.95E-07	No emission factor
	1.20E-05 lb/MMCF	216.42 MMCF/yr	1.30E-06		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Beryllium	3.00E-06 lb/MMBtu	220,752 MMBtu/yr	3.31E-04	3.31E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.10E-03 lb/MMCF	216.42 MMCF/yr	1.19E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Cadmium	3.00E-06 lb/MMBtu	220,752 MMBtu/yr	3.31E-04	3.31E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.40E-03 lb/MMCF	216.42 MMCF/yr	1.51E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Chromium	3.00E-06 lb/MMBtu	220,752 MMBtu/yr	3.31E-04	3.31E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	216.42 MMCF/yr	1.95E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Chrysene	2.38E-06 lb/kgal	1,582.45 kgal/yr	1.88E-06	1.88E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	216.42 MMCF/yr	1.30E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dibenzo(a,h)anthracene	1.67E-06 lb/kgal	1,582.45 kgal/yr	1.32E-06	1.32E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-03 lb/MMCF	216.42 MMCF/yr	1.30E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dichlorobenzene	None	None	None	1.30E-04	No emission factor
	None	None	None		No emission factor
Ethylbenzene	6.36E-05 lb/kgal	1,582.45 kgal/yr	5.03E-05	5.03E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

(Continued on Next Page)

Potential to Emit - Boiler #2 at Johnson Melloh Solutions - IMC Central Energy Plant

(Continued from Previous Page)

Potential to Emit					
	Emission Factor (Natural Gas / Fuel Oil)	**Throughput**	**PTE (TPY)**	**Worst Case PTE (TPY)**	**Emission Factor Source**
	3.00E-06 lb/MMCF	216.42 MMCF/yr	3.25E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluoranthene	4.84E-06 lb/kgal	1,582.45 kgal/yr	3.83E-06	3.83E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.80E-06 lb/MMCF	216.42 MMCF/yr	3.03E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluorene	4.47E-06 lb/kgal	1,582.45 kgal/yr	3.54E-06	3.54E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	7.50E-02 lb/MMCF	216.42 MMCF/yr	8.12E-03		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Formaldehyde	0.061 lb/kgal	1,582.45 kgal/yr	4.83E-02	4.83E-02	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	1.8 lb/MMCF	216.42 MMCF/yr	0.19		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Hexane	None	None	None	0.19	No emission factor
	1.80E-06 lb/MMCF	216.42 MMCF/yr	1.95E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Indo(1,2,3-cd)pyrene	2.14E-06 lb/kgal	1,582.45 kgal/yr	1.69E-06	1.69E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Lead	9.00E-06 lb/MMBtu	220,752 MMBtu/yr	9.93E-04	9.93E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.80E-04 lb/MMCF	216.42 MMCF/yr	4.11E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Manganese	6.00E-06 lb/MMBtu	220,752 MMBtu/yr	6.62E-04	6.62E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	2.60E-04 lb/MMCF	216.42 MMCF/yr	2.81E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Mercury	3.00E-06 lb/MMBtu	220,752 MMBtu/yr	3.31E-04	3.31E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	6.10E-04 lb/MMCF	216.42 MMCF/yr	6.60E-05		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Naphthalene	1.13E-03 lb/kgal	1,582.45 kgal/yr	8.94E-04	8.94E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	216.42 MMCF/yr	2.27E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Nickel	3.00E-06 lb/MMBtu	220,752 MMBtu/yr	3.31E-04	3.31E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.70E-05 lb/MMCF	216.42 MMCF/yr	1.84E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Phenanthrene	1.05E-05 lb/kgal	1,582.45 kgal/yr	8.31E-06	8.31E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Polycyclic Organic Matter	0.0033 lb/kgal	1,582.45 kgal/yr	2.61E-03	2.61E-03	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	5.00E-06 lb/MMCF	216.42 MMCF/yr	5.41E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Pyrene	4.25E-06 lb/kgal	1,582.45 kgal/yr	3.36E-06	3.36E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	216.42 MMCF/yr	2.60E-06		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Selenium	1.50E-06 lb/MMBtu	220,752 MMBtu/yr	1.66E-04	1.66E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.40E-03 lb/MMCF	216.42 MMCF/yr	3.68E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Toluene	6.30E-03 lb/kgal	1,582.45 kgal/yr	4.98E-03	4.98E-03	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Xylene	1.09E-04 lb/kgal	1,582.45 kgal/yr	8.62E-05	8.62E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

Worst Case HAP at PTE **0.19 TPY** **(Hexane)**

Total HAP at PTE **0.26 TPY**

Appendix A to the Technical Support Document - Emission Calculations
Potential to Emit - Boiler #3 at Johnson Melloh Solutions - IMC Central Energy Plant

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Maximum Heat Input Capacity	122 MMBtu/hr	or	1,068,720 MMBtu/yr		
Heat Content Fuel Oil	139.50 MMBtu/kgal				
Heat Content Natural Gas	1,020.00 MMBtu/MMCF				
Max. Fuel Oil Usage (Current Permit S Content)	7,661.08 kgal/yr	at	2,800 ppm S	0.28 % S	
Maximum Natural Gas Usage	1,047.76 MMCF/yr				

Potential to Emit

	Emission Factor (Natural Gas / Fuel Oil)	Throughput	PTE (TPY)	Worst Case PTE (TPY)	Emission Factor Source
PM	1.9 lb/MMCF	1,047.76 MMCF/yr	1.00		AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	2 lb/kgal	7,661.08 kgal/yr	7.66	7.66	AP-42, Ch. 1.3, 5/2010, Table 1.3-1
PM_{10} / Direct $PM_{2.5}$	7.6 lb/MMCF	1,047.76 MMCF/yr	3.98		AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	3.3 lb/kgal	7,661.08 kgal/yr	12.64	12.64	AP-42, Ch. 1.3, 5/2010, Table 1.3-1, 1.3-2
SO_2	0.6 lb/MMCF	1,047.76 MMCF/yr	0.31		AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	39.76 lb/kgal	7,661.08 kgal/yr	152.30	152.30	AP-42, Ch. 1.3, 5/2010, Table 1.3-1, 142S
VOC	5.5 lb/MMCF	1,047.76 MMCF/yr	2.88		AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	0.252 lb/kgal	7,661.08 kgal/yr	0.97	2.88	AP-42, Ch. 1.3, 5/2010, Table 1.3-3
CO	84 lb/MMCF	1,047.76 MMCF/yr	44.01		AP-42, Ch. 1.4, 7/1998, Table 1.4-1
	5 lb/kgal	7,661.08 kgal/yr	19.15	44.01	AP-42, Ch. 1.3, 5/2010, Table 1.3-1
NO_x	190 lb/MMCF	1,047.76 MMCF/yr	99.54		AP-42, Ch. 1.4, 7/1998, Table 1.4-1
	24 lb/kgal	7,661.08 kgal/yr	91.93	99.54	AP-42, Ch. 1.3, 5/2010, Table 1.3-1
CO_2	53.06 kg/MMBtu	1,068,720 MMBtu/yr	62,507.34		40 CFR 98, Subpart C, Table C-1
	75.2 kg/MMBtu	1,068,720 MMBtu/yr	88,589.36	88,589.36	40 CFR 98, Subpart C, Table C-1
CH_4	1.00E-03 kg/MMBtu	1,068,720 MMBtu/yr	1.18		40 CFR 98, Subpart C, Table C-2
	3.00E-03 kg/MMBtu	1,068,720 MMBtu/yr	3.53	3.53	40 CFR 98, Subpart C, Table C-2
N_2O	1.00E-04 kg/MMBtu	1,068,720 MMBtu/yr	0.12		40 CFR 98, Subpart C, Table C-2
	6.00E-04 kg/MMBtu	1,068,720 MMBtu/yr	0.71	0.71	40 CFR 98, Subpart C, Table C-2
CO_2e				88,889.19	Calculated

Methodology:
1) Throughput (MMCF/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/MMCF)
2) Throughput (kgal/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/kgal)
3) PTE (TPY) = Emission Factor (lb/MMCF) x Usage (MMCF/yr) x 1 ton/2,000 lb
4) PTE (TPY) = Emission Factor (lb/kgal) x Usage (kgal/yr) x 1 ton/2,000 lb
5) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Usage (MMBtu/yr) x 1 ton/2,000 lb
6) CO_2e (TPY) = CO_2 Emissions + (CH_4 Emissions x Global Warming Potential (25)) + (N_2O Emissions x (Global Warming Potential 298))
7) Worst Case PTE (TPY) = Highest Potential Emission Rate (TPY) of Fuel Oil Combustion and Natural Gas Combustion for each pollutant.

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Appendix A to the Technical Support Document - Emission Calculations
Potential to Emit - Boiler #3 at Johnson Melloh Solutions - IMC Central Energy Plant

(Continued from Previous Page)

	Potential to Emit				
	Emission Factor (Natural Gas / Fuel Oil)	**Throughput**	**PTE (TPY)**	**Worst Case PTE (TPY)**	**Emission Factor Source**
	None	None	None		No emission factor
1,1,1-Trichloroethane	2.36E-04 lb/kgal	7,661.08 kgal/yr	9.04E-04	9.04E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	1,047.76 MMCF/yr	1.26E-05		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
2-methylnaphthalene	None	None	None	1.26E-05	No emission factor
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
3-methylchloranthrene	None	None	None	9.43E-07	No emission factor
	1.60E-05 lb/MMCF	1,047.76 MMCF/yr	8.38E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
7,12-dimethylbenz(a)anthracene	None	None	None	8.38E-06	No emission factor
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthene	2.11E-05 lb/kgal	7,661.08 kgal/yr	8.08E-05	8.08E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthylene	2.53E-07 lb/kgal	7,661.08 kgal/yr	9.69E-07	9.69E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-06 lb/MMCF	1,047.76 MMCF/yr	1.26E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Anthracene	1.22E-06 lb/kgal	7,661.08 kgal/yr	4.67E-06	4.67E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.00E-04 lb/MMCF	1,047.76 MMCF/yr	1.05E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Arsenic	4.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	2.14E-03	2.14E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benz(a)anthracene	4.01E-06 lb/kgal	7,661.08 kgal/yr	1.54E-05	1.54E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	1,047.76 MMCF/yr	1.10E-03		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzene	2.14E-04 lb/kgal	7,661.08 kgal/yr	8.20E-04	1.10E-03	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	1,047.76 MMCF/yr	6.29E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(a)pyrene	None	None	None	6.29E-07	No emission factor
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(b)fluoranthene	None	None	None	9.43E-07	No emission factor
	1.20E-06 lb/MMCF	1,047.76 MMCF/yr	6.29E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(g,h,i)perylene	2.26E-06 lb/kgal	7,661.08 kgal/yr	8.66E-06	8.66E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(k)fluoranthene	None	None	None	9.43E-07	No emission factor
	1.20E-05 lb/MMCF	1,047.76 MMCF/yr	6.29E-06		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Beryllium	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.10E-03 lb/MMCF	1,047.76 MMCF/yr	5.76E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Cadmium	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.40E-03 lb/MMCF	1,047.76 MMCF/yr	7.33E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Chromium	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Chrysene	2.38E-06 lb/kgal	7,661.08 kgal/yr	9.12E-06	9.12E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	1,047.76 MMCF/yr	6.29E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dibenzo(a,h)anthracene	1.67E-06 lb/kgal	7,661.08 kgal/yr	6.40E-06	6.40E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-03 lb/MMCF	1,047.76 MMCF/yr	6.29E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dichlorobenzene	None	None	None	6.29E-04	No emission factor
	None	None	None		No emission factor
Ethylbenzene	6.36E-05 lb/kgal	7,661.08 kgal/yr	2.44E-04	2.44E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

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Potential to Emit - Boiler #3 at Johnson Melloh Solutions - IMC Central Energy Plant

(Continued from Previous Page)

Potential to Emit					
	Emission Factor (Natural Gas / Fuel Oil)	**Throughput**	**PTE (TPY)**	**Worst Case PTE (TPY)**	**Emission Factor Source**
	3.00E-06 lb/MMCF	1,047.76 MMCF/yr	1.57E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluoranthene	4.84E-06 lb/kgal	7,661.08 kgal/yr	1.85E-05	1.85E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.80E-06 lb/MMCF	1,047.76 MMCF/yr	1.47E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluorene	4.47E-06 lb/kgal	7,661.08 kgal/yr	1.71E-05	1.71E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	7.50E-02 lb/MMCF	1,047.76 MMCF/yr	3.93E-02		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Formaldehyde	0.061 lb/kgal	7,661.08 kgal/yr	2.34E-01	2.34E-01	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	1.8 lb/MMCF	1,047.76 MMCF/yr	0.94		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Hexane	None	None	None	0.94	No emission factor
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Indo(1,2,3-cd)pyrene	2.14E-06 lb/kgal	7,661.08 kgal/yr	8.20E-06	8.20E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Lead	9.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	4.81E-03	4.81E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.80E-04 lb/MMCF	1,047.76 MMCF/yr	1.99E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Manganese	6.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	3.21E-03	3.21E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	2.60E-04 lb/MMCF	1,047.76 MMCF/yr	1.36E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Mercury	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	6.10E-04 lb/MMCF	1,047.76 MMCF/yr	3.20E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Naphthalene	1.13E-03 lb/kgal	7661.08 kgal/yr	4.33E-03	4.33E-03	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	1,047.76 MMCF/yr	1.10E-03		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Nickel	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.70E-05 lb/MMCF	1,047.76 MMCF/yr	8.91E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Phenanthrene	1.05E-05 lb/kgal	7,661.08 kgal/yr	4.02E-05	4.02E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Polycyclic Organic Matter	0.0033 lb/kgal	7,661.08 kgal/yr	1.26E-02	1.26E-02	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	5.00E-06 lb/MMCF	1,047.76 MMCF/yr	2.62E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Pyrene	4.25E-06 lb/kgal	7,661.08 kgal/yr	1.63E-05	1.63E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	1,047.76 MMCF/yr	1.26E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Selenium	1.50E-06 lb/MMBtu	1,068,720 MMBtu/yr	8.02E-04	8.02E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.40E-03 lb/MMCF	1,047.76 MMCF/yr	1.78E-03		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Toluene	6.30E-03 lb/kgal	7,661.08 kgal/yr	2.41E-02	2.41E-02	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Xylene	1.09E-04 lb/kgal	7,661.08 kgal/yr	4.18E-04	4.18E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

Worst Case HAP at PTE **0.94 TPY** **(Hexane)**

Total HAP at PTE **1.24 TPY**

Appendix A to the Technical Support Document - Emission Calculations
Potential to Emit - Boiler #4 at Johnson Melloh Solutions - IMC Central Energy Plant

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Maximum Heat Input Capacity	122	MMBtu/hr	or	1,068,720	MMBtu/yr
Heat Content Fuel Oil	139.50	MMBtu/kgal			
Heat Content Natural Gas	1,020.00	MMBtu/MMCF			
Max. Fuel Oil Usage (Current Permit S Content)	7,661.08	kgal/yr	at	2,800 ppm S	0.28 % S
Maximum Natural Gas Usage	1,047.76	MMCF/yr			

Potential to Emit

	Emission Factor (Natural Gas / Fuel Oil)	Throughput	PTE (TPY)	Worst Case PTE (TPY)	Emission Factor Source
PM	1.9 lb/MMCF	1,047.76 MMCF/yr	1.00		AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	2 lb/kgal	7,661.08 kgal/yr	7.66	7.66	AP-42, Ch. 1.3, 5/2010, Table 1.3-1
PM_{10} / Direct $PM_{2.5}$	7.6 lb/MMCF	1,047.76 MMCF/yr	3.98		AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	3.3 lb/kgal	7,661.08 kgal/yr	12.64	12.64	AP-42, Ch. 1.3, 5/2010, Table 1.3-1, 1.3-2
SO_2	0.6 lb/MMCF	1,047.76 MMCF/yr	0.31		AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	39.76 lb/kgal	7,661.08 kgal/yr	152.30	152.30	AP-42, Ch. 1.3, 5/2010, Table 1.3-1
VOC	5.5 lb/MMCF	1,047.76 MMCF/yr	2.88		AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	0.252 lb/kgal	7,661.08 kgal/yr	0.97	2.88	AP-42, Ch. 1.3, 5/2010, Table 1.3-3
CO	84 lb/MMCF	1,047.76 MMCF/yr	44.01		AP-42, Ch. 1.4, 7/1998, Table 1.4-1
	5 lb/kgal	7,661.08 kgal/yr	19.15	44.01	AP-42, Ch. 1.3, 5/2010, Table 1.3-1
NO_x	190 lb/MMCF	1,047.76 MMCF/yr	99.54		AP-42, Ch. 1.4, 7/1998, Table 1.4-1
	24 lb/kgal	7,661.08 kgal/yr	91.93	99.54	AP-42, Ch. 1.3, 5/2010, Table 1.3-1
CO_2	53.06 kg/MMBtu	1,068,720 MMBtu/yr	62,507.34		40 CFR 98, Subpart C, Table C-1
	75.2 kg/MMBtu	1,068,720 MMBtu/yr	88,589.36	88,589.36	40 CFR 98, Subpart C, Table C-1
CH_4	1.00E-03 kg/MMBtu	1,068,720 MMBtu/yr	1.18		40 CFR 98, Subpart C, Table C-2
	3.00E-03 kg/MMBtu	1,068,720 MMBtu/yr	3.53	3.53	40 CFR 98, Subpart C, Table C-2
N_2O	1.00E-04 kg/MMBtu	1,068,720 MMBtu/yr	0.12		40 CFR 98, Subpart C, Table C-2
	6.00E-04 kg/MMBtu	1,068,720 MMBtu/yr	0.71	0.71	40 CFR 98, Subpart C, Table C-2
CO_2e				88,889.19	Calculated

Methodology:
1) Throughput (MMCF/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/MMCF)
2) Throughput (kgal/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/kgal)
3) PTE (TPY) = Emission Factor (lb/MMCF) x Usage (MMCF/yr) x 1 ton/2,000 lb
4) PTE (TPY) = Emission Factor (lb/kgal) x Usage (kgal/yr) x 1 ton/2,000 lb
5) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Usage (MMBtu/yr) x 1 ton/2,000 lb
6) CO_2e (TPY) = CO_2 Emissions + (CH_4 Emissions x Global Warming Potential (25)) + (N_2O Emissions x (Global Warming Potential 298))
7) Worst Case PTE (TPY) = Highest Potential Emission Rate (TPY) of Fuel Oil Combustion and Natural Gas Combustion for each pollutant.

(Continued on Next Page)

Appendix A to the Technical Support Document - Emission Calculations
Potential to Emit - Boiler #4 at Johnson Melloh Solutions - IMC Central Energy Plant

(Continued from Previous Page)

Potential to Emit					
	Emission Factor (Natural Gas / Fuel Oil)	**Throughput**	**PTE (TPY)**	**Worst Case PTE (TPY)**	**Emission Factor Source**
	None	None	None		No emission factor
1,1,1-Trichloroethane	2.36E-04 lb/kgal	7,661.08 kgal/yr	9.04E-04	9.04E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	1,047.76 MMCF/yr	1.26E-05		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
2-methylnaphthalene	None	None	None	1.26E-05	No emission factor
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
3-methylchloranthrene	None	None	None	9.43E-07	No emission factor
	1.60E-05 lb/MMCF	1,047.76 MMCF/yr	8.38E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
7,12-dimethylbenz(a)anthracene	None	None	None	8.38E-06	No emission factor
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthene	2.11E-05 lb/kgal	7,661.08 kgal/yr	8.08E-05	8.08E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthylene	2.53E-07 lb/kgal	7,661.08 kgal/yr	9.69E-07	9.69E-07	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-06 lb/MMCF	1,047.76 MMCF/yr	1.26E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Anthracene	1.22E-06 lb/kgal	7,661.08 kgal/yr	4.67E-06	4.67E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.00E-04 lb/MMCF	1,047.76 MMCF/yr	1.05E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Arsenic	4.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	2.14E-03	2.14E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benz(a)anthracene	4.01E-06 lb/kgal	7,661.08 kgal/yr	1.54E-05	1.54E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	1,047.76 MMCF/yr	1.10E-03		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzene	2.14E-04 lb/kgal	7,661.08 kgal/yr	8.20E-04	1.10E-03	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	1,047.76 MMCF/yr	6.29E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(a)pyrene	None	None	None	6.29E-07	No emission factor
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(b)fluoranthene	None	None	None	9.43E-07	No emission factor
	1.20E-06 lb/MMCF	1,047.76 MMCF/yr	6.29E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(g,h,i)perylene	2.26E-06 lb/kgal	7,661.08 kgal/yr	8.66E-06	8.66E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(k)fluoranthene	None	None	None	9.43E-07	No emission factor
	1.20E-05 lb/MMCF	1,047.76 MMCF/yr	6.29E-06		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Beryllium	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.10E-03 lb/MMCF	1,047.76 MMCF/yr	5.76E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Cadmium	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.40E-03 lb/MMCF	1,047.76 MMCF/yr	7.33E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Chromium	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Chrysene	2.38E-06 lb/kgal	7,661.08 kgal/yr	9.12E-06	9.12E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	1,047.76 MMCF/yr	6.29E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dibenzo(a,h)anthracene	1.67E-06 lb/kgal	7,661.08 kgal/yr	6.40E-06	6.40E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-03 lb/MMCF	1,047.76 MMCF/yr	6.29E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dichlorobenzene	None	None	None	6.29E-04	No emission factor
	None	None	None		No emission factor
Ethylbenzene	6.36E-05 lb/kgal	7,661.08 kgal/yr	2.44E-04	2.44E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

(Continued on Next Page)

Potential to Emit - Boiler #4 at Johnson Melloh Solutions - IMC Central Energy Plant

(Continued from Previous Page)

Potential to Emit					
	Emission Factor (Natural Gas / Fuel Oil)	**Throughput**	**PTE (TPY)**	**Worst Case PTE (TPY)**	**Emission Factor Source**
	3.00E-06 lb/MMCF	1,047.76 MMCF/yr	1.57E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluoranthene	4.84E-06 lb/kgal	7,661.08 kgal/yr	1.85E-05	1.85E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.80E-06 lb/MMCF	1,047.76 MMCF/yr	1.47E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluorene	4.47E-06 lb/kgal	7,661.08 kgal/yr	1.71E-05	1.71E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	7.50E-02 lb/MMCF	1,047.76 MMCF/yr	3.93E-02		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Formaldehyde	0.061 lb/kgal	7,661.08 kgal/yr	2.34E-01	2.34E-01	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	1.8 lb/MMCF	1,047.76 MMCF/yr	0.94		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Hexane	None	None	None	0.94	No emission factor
	1.80E-06 lb/MMCF	1,047.76 MMCF/yr	9.43E-07		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Indo(1,2,3-cd)pyrene	2.14E-06 lb/kgal	7,661.08 kgal/yr	8.20E-06	8.20E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Lead	9.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	4.81E-03	4.81E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.80E-04 lb/MMCF	1,047.76 MMCF/yr	1.99E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Manganese	6.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	3.21E-03	3.21E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	2.60E-04 lb/MMCF	1,047.76 MMCF/yr	1.36E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Mercury	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	6.10E-04 lb/MMCF	1,047.76 MMCF/yr	3.20E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Naphthalene	1.13E-03 lb/kgal	7661.08 kgal/yr	4.33E-03	4.33E-03	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	1,047.76 MMCF/yr	1.10E-03		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Nickel	3.00E-06 lb/MMBtu	1,068,720 MMBtu/yr	1.60E-03	1.60E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.70E-05 lb/MMCF	1,047.76 MMCF/yr	8.91E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Phenanthrene	1.05E-05 lb/kgal	7,661.08 kgal/yr	4.02E-05	4.02E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Polycyclic Organic Matter	0.0033 lb/kgal	7,661.08 kgal/yr	1.26E-02	1.26E-02	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	5.00E-06 lb/MMCF	1,047.76 MMCF/yr	2.62E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Pyrene	4.25E-06 lb/kgal	7,661.08 kgal/yr	1.63E-05	1.63E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	1,047.76 MMCF/yr	1.26E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Selenium	1.50E-06 lb/MMBtu	1,068,720 MMBtu/yr	8.02E-04	8.02E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.40E-03 lb/MMCF	1,047.76 MMCF/yr	1.78E-03		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Toluene	6.30E-03 lb/kgal	7,661.08 kgal/yr	2.41E-02	2.41E-02	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	None	None		No emission factor
Xylene	1.09E-04 lb/kgal	7,661.08 kgal/yr	4.18E-04	4.18E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

Worst Case HAP at PTE **0.94 TPY** **(Hexane)**

Total HAP at PTE **1.24 TPY**

Appendix A to the Technical Support Document - Emission Calculations
Limited Potential to Emit - Boiler #1 to #4 at Johnson Melloh Solutions - IMC Central Energy Plant

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Combined Heat Input Capacity of Boiler #1 to #4	281.8	MMBtu/hr	or		2,468,568	MMBtu/yr
Heat Content Fuel Oil	139.50	MMBtu/kgal	at	S Wt % =	0.28	%
Heat Content Natural Gas	1,020.00	MMBtu/MMCF				

Case 1 - All Natural Gas					
Combustion on all Natural Gas	2,420.16	MMCF/yr		2,468,568	MMBtu/yr

Case 2 - Limited Fuel Oil with Makeup Natural Gas					
Make Up Natural Gas after All F.O. Used	1,830.80	MMCF/yr		1,867,413	MMBtu/yr
Limited Fuel Oil Usage (S=0.28)	4,309.356	kgal/yr	or	601,155	MMBtu/yr
				2,468,568	MMBtu/yr

Limited Potential to Emit

	Emission Factor (Natural Gas / Fuel Oil)	Case 1 All N.G (TPY)	Case 2 Limited F.O. + N.G. (TPY)	Limited PTE (TPY)	Emission Factor Source
PM	1.9 lb/MMCF	2.30	1.74	6.05	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	2 lb/kgal		4.31		AP-42, Ch. 1.3, 5/2010, Table 1.3-1
PM_{10} / Direct $PM_{2.5}$	7.6 lb/MMCF	9.20	6.96	14.07	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	3.3 lb/kgal		7.11		AP-42, Ch. 1.3, 5/2010, Table 1.3-1, 1.3-2
SO_2	0.6 lb/MMCF	0.73	0.55	86.22	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	39.76 lb/kgal		85.67		AP-42, Ch. 1.3, 5/2010, Table 1.3-1, 142S
VOC	5.5 lb/MMCF	6.66	5.03	6.66	AP-42, Ch. 1.4, 7/1998, Table 1.4-2
	0.252 lb/kgal		0.54		AP-42, Ch. 1.3, 5/2010, Table 1.3-3
CO	Emissions Set to Keep Nested Source under 100 TPY			85.90	Natural gas combustion is worst case.
NO_x	Emissions Set to Keep Nested Source under 100 TPY			83.20	Natural gas combustion is worst case.
CO_2	53.06 kg/MMBtu	144,382	109,221	159,053	40 CFR 98, Subpart C, Table C-1
	75.20 kg/MMBtu		49,832		40 CFR 98, Subpart C, Table C-1
CH_4	1.00E-03 kg/MMBtu	2.72	2.06	4.05	40 CFR 98, Subpart C, Table C-2
	3.00E-03 kg/MMBtu		1.99		40 CFR 98, Subpart C, Table C-2
N_2O	1.00E-04 kg/MMBtu	0.27	0.21	0.61	40 CFR 98, Subpart C, Table C-2
	6.00E-04 kg/MMBtu		0.40		40 CFR 98, Subpart C, Table C-2
CO_2e				159,336	Calculated

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Appendix A to the Technical Support Document - Emission Calculations
Limited Potential to Emit - Boiler #1 to #4 at Johnson Melloh Solutions - IMC Central Energy Plant

(Continued from Previous Page)

	Limited Potential to Emit				
	Emission Factor (Natural Gas / Fuel Oil)	**Case 1 All N.G (TPY)**	**Case 2 Limited F.O. + N.G. (TPY)**	**Limited PTE (TPY)**	**Emission Factor Source**
	None	0.00	0.00		No emission factor
1,1,1-Trichloroethane	2.36E-04 lb/kgal		5.09E-04	5.09E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	2.90E-05	2.20E-05		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
2-methylnaphthalene	None		0.00	2.90E-05	No emission factor
	1.80E-06 lb/MMCF	2.18E-06	1.65E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
3-methylchloranthrene	None		0.00	2.18E-06	No emission factor
	1.60E-05 lb/MMCF	1.94E-05	1.46E-05		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
7,12-dimethylbenz(a)anthracene	None		0.00	1.94E-05	No emission factor
	1.80E-06 lb/MMCF	2.18E-06	1.65E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthene	2.11E-05 lb/kgal		4.55E-05	4.71E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	2.18E-06	1.65E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Acenaphthylene	2.53E-07 lb/kgal		5.45E-07	2.19E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-06 lb/MMCF	2.90E-06	2.20E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Anthracene	1.22E-06 lb/kgal		2.63E-06	4.83E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.00E-04 lb/MMCF	2.42E-04	1.83E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Arsenic	4.00E-06 lb/MMBtu		1.20E-03	1.39E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	2.18E-06	1.65E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benz(a)anthracene	4.01E-06 lb/kgal		8.64E-06	1.03E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	2.54E-03	1.92E-03		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzene	2.14E-04 lb/kgal		4.61E-04	2.54E-03	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	1.45E-06	1.10E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(a)pyrene	None		0.00	1.45E-06	No emission factor
	1.80E-06 lb/MMCF	2.18E-06	1.65E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(b)fluoranthene	None		0.00	2.18E-06	No emission factor
	1.20E-06 lb/MMCF	1.45E-06	1.10E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(g,h,i)perylene	2.26E-06 lb/kgal		4.87E-06	5.97E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.80E-06 lb/MMCF	2.18E-06	1.65E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Benzo(k)fluoranthene	None		0	2.18E-06	No emission factor
	1.20E-05 lb/MMCF	1.45E-05	1.10E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Beryllium	3.00E-06 lb/MMBtu		9.02E-04	9.13E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.10E-03 lb/MMCF	1.33E-03	1.01E-03		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Cadmium	3.00E-06 lb/MMBtu		9.02E-04	1.91E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.40E-03 lb/MMCF	1.69E-03	1.28E-03		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Chromium	3.00E-06 lb/MMBtu		9.02E-04	2.18E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.80E-06 lb/MMCF	2.18E-06	1.65E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Chrysene	2.38E-06 lb/kgal		5.13E-06	6.78E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-06 lb/MMCF	1.45E-06	1.10E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dibenzo(a,h)anthracene	1.67E-06 lb/kgal		3.60E-06	4.70E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	1.20E-03 lb/MMCF	1.45E-03	1.10E-03		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Dichlorobenzene	None		0.00	1.45E-03	No emission factor
	None	0.00	0.00		No emission factor
Ethylbenzene	6.36E-05 lb/kgal		1.37E-04	1.37E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

(Continued on Next Page)

Appendix A to the Technical Support Document - Emission Calculations
Limited Potential to Emit - Boiler #1 to #4 at Johnson Melloh Solutions - IMC Central Energy Plant
(Continued from Previous Page)

Potential to Emit					
	Emission Factor (Natural Gas / Fuel Oil)	Case 1 All N.G (TPY)	Case 2 Limited F.O. + N.G. (TPY)	Limited PTE (TPY)	Emission Factor Source
	3.00E-06 lb/MMCF	3.63E-06	2.75E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluoranthene	4.84E-06 lb/kgal		1.04E-05	1.32E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.80E-06 lb/MMCF	3.39E-06	2.56E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Fluorene	4.47E-06 lb/kgal		9.63E-06	1.22E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	7.50E-02 lb/MMCF	9.08E-02	0.0687		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Formaldehyde	0.061 lb/kgal		0.1314	0.200	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	1.8 lb/MMCF	2.18	1.65		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Hexane	None		0.00	2.18	No emission factor
	1.80E-06 lb/MMCF	2.18E-06	1.65E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Indo(1,2,3-cd)pyrene	2.14E-06 lb/kgal		4.61E-06	6.26E-06	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	0.00	0.00		No emission factor
Lead	9.00E-06 lb/MMBtu		2.71E-03	2.71E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.80E-04 lb/MMCF	4.60E-04	3.48E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Manganese	6.00E-06 lb/MMBtu		1.80E-03	2.15E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	2.60E-04 lb/MMCF	3.15E-04	2.38E-04		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Mercury	3.00E-06 lb/MMBtu		9.02E-04	1.14E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	6.10E-04 lb/MMCF	7.38E-04	5.58E-04		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Naphthalene	1.13E-03 lb/kgal		2.43E-03	2.99E-03	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.10E-03 lb/MMCF	2.54E-03	1.92E-03		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Nickel	3.00E-06 lb/MMBtu		9.02E-04	2.82E-03	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	1.70E-05 lb/MMCF	2.06E-05	1.56E-05		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Phenanthrene	1.05E-05 lb/kgal		2.26E-05	3.82E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	0.00	0.00		No emission factor
Polycyclic Organic Matter	0.0033 lb/kgal		7.11E-03	7.11E-03	AP-42, Ch. 1.3, Table 1.3-8, 5/2010
	5.00E-06 lb/MMCF	6.05E-06	4.58E-06		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Pyrene	4.25E-06 lb/kgal		9.16E-06	1.37E-05	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	2.40E-05 lb/MMCF	2.90E-05	2.20E-05		AP-42, Ch. 1.4, Table 1.4-4, 7/1998
Selenium	1.50E-06 lb/MMBtu		4.51E-04	4.73E-04	AP-42, Ch. 1.3, Table 1.3-10, 5/2010
	3.40E-03 lb/MMCF	4.11E-03	3.11E-03		AP-42, Ch. 1.4, Table 1.4-3, 7/1998
Toluene	6.30E-03 lb/kgal		1.36E-02	1.67E-02	AP-42, Ch. 1.3, Table 1.3-9, 5/2010
	None	0.00	0.00		No emission factor
Xylene	1.09E-04 lb/kgal		2.35E-04	2.35E-04	AP-42, Ch. 1.3, Table 1.3-9, 5/2010

Worst Case HAP at Limited PTE **2.18** **TPY** **(Hexane)**

Total HAP at Limited PTE **2.43** **TPY**

Methodology:

1) Throughput (MMCF/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/MMCF)
2) Throughput (kgal/yr) = Heat Input (MMBtu/hr) x 8,760 hr/yr x 1/Heat Content (MMBtu/kgal)
3) PTE (TPY) = Emission Factor (lb/MMCF) x Usage (MMCF/yr) x 1 ton/2,000 lb
4) PTE (TPY) = Emission Factor (lb/kgal) x Usage (kgal/yr) x 1 ton/2,000 lb
5) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Usage (MMBtu/yr) x 1 ton/2,000 lb
6) CO_2e (TPY) = CO_2 Emissions + (CH_4 Emissions x Global Warming Potential (25)) + (N_2O Emissions x (Global Warming Potential 298))
7) Worst Case PTE (TPY) = Highest Potential Emission Rate (TPY) of Fuel Oil Combustion and Natural Gas Combustion for each pollutant.

Appendix A to the Technical Support Document - Emission Calculations
JMS Fire Pump Engines
Diesel Fuel < 600 HP

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International (	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek
Date: December 10, 2014

Unit Location	horsepower	
Main Terminal -LAN Room	480	Fire Pump Engine # 1
South Tug Guard Shack	480	Fire Pump Engine # 2
Gate 10 Guard Shack	480	Fire Pump Engine # 3
Midfield Road Access Gate	480	Fire Pump Engine # 4
Main Terminal -Main Concourse	480	Fire Pump Engine # 5
sum total	2400	hp
	16.8000	MMBtu/hr

max heat input MMBtu / hr
16.8

	PM	PM10/2.5	SOx	NOx	VOC	CO
Emission Factor lbs / MMBtu	0.31	0.31	0.29	4.41	0.36	0.95
Potential Emissions lbs / hr	5.21	5.21	4.87	74.09	6.05	15.96
tons / yr @ 500 hrs / yr	1.30	1.30	1.22	18.52	1.51	3.99

Methodology

AP-42 App. A Conversion Factor: 7.00E+03 Btu/horsepower hr
Emission Factor (lbs / MMBtu): from AP-42 Table 3.3-1 & 3.3-2 Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines
Diesel fuel Btu: 140000 Btu/gal (per AP-42 Appendix A)
Potential Emissions (lbs / hr): emfac x heat input
Potential Emissions (tons / yr): lbs / hr emissions x 500 operating hrs / yr x ton / 2000 lbs

if limited to: 500 annual operating hours, then 16785.7 gal/yr max annual diesel fuel consumption

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Potential Emission in tons/yr	3.92E-03	1.72E-03	1.20E-03	1.64E-04	4.96E-03	3.22E-03	3.89E-04	7.06E-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).

Methodology

Potential Emission of Total HAPs (tons/yr)	1.63E-02

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
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 to the Technical Support Document - Emission Calculations
JMS Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	1505.0	Emergency Generator # 1
Output Horsepower Rating (hp)	1505.0	Emergency Generator # 2
Output Horsepower Rating (hp)	1505.0	Emergency Generator # 3
Total	**4515.0**	

Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	2,257,500
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	2.40E-02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.79	0.45	0.45	2.74	27.09	0.80	6.21

*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	6.13E-03	2.22E-03	1.52E-03	6.23E-04	1.99E-04	6.23E-05	1.68E-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)	**1.24E-02**

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 to the Technical Support Document - Emission Calculations
VOC and Particulate
From Surface Coating Operations
AAR Ablative Coating Operation

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek
Date: December 10, 2014

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	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)	lb VOC/gal solids	Transfer Efficiency
PR1200 RTV Primer	6.34	94.50%	0.0%	94.5%	0.0%	4.55%	0.25	1.00	5.99	5.99	1.50	35.95	6.56	0.10	131.68	75%
Ablative Coating (MA25S)	5.12	48.05%	0.0%	48.1%	0.0%	51.95%	1.77	1.00	2.46	2.46	4.35	104.51	19.07	5.16	4.74	75%
RTV 560	11.84	0.71%	0.0%	0.7%	0.0%	99.46%	2.00	1.00	0.08	0.08	0.17	4.04	0.74	0.00	0.08	100%
Acetone	6.59	100%	100.0%	0.0%	0.0%	0.00%	0.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	#DIV/0!	100%
State Potential Emissions		**Add worst case coating to all solvents**									**6.02**	**144.49**	**26.37**	**5.25**		
METHODOLOGY											**326 IAC 8-1-6 VOC Minor Limit**		**25.00**	**TPY**		

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A to the Technical Support Document - Emission Calculations
HAP Emission Calculations
AAR Ablative Coating Operation

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Material	Density (lb/gal)	Gallons of Material (gal/unit)	Maximum (unit/hr)	Wt% Xylene	Wt% Ehtylbenzene	Wt% MIBK	Wt% Toluene	Xylene (TPY)	Ethylbenzene (TPY)	MIBK (TPY)	Toluene (TPY)
PR1200 RTV Primer	6.34	0.25	1	0.00%	0.10%	0.00%	0.10%	0.00	0.01	0.00	0.01
Ablative Coating (MA25S)	5.12	1.77	1	2.00%	0.00%	3.00%	14.00%	0.79	0.00	1.19	5.56
RTV 560	11.84	2	1	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00
Acetone	6.59	0.5	1	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00
							Total Single HAP	**0.79**	**0.01**	**1.19**	**5.56**
							Total HAP		**7.56**		

Appendix A to the Technical Support Document - Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100
AAR AMU Heat & Cure Oven

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr
2.50	1000	21.9

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.02	0.08	0.08	0.01	1.10	0.06	0.92

*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/1,000 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.3E-05	1.3E-05	8.2E-04	2.0E-02	3.7E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	5.5E-06	1.2E-05	1.5E-05	4.2E-06	2.3E-05

Total HAPs 0.021

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A to the Technical Support Document - Emission Calculations
VOC and Particulate
Surface Coating Operation P-2

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek
Date: December 10, 2014

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (units/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Stripper PR-2002	8.34	100.00%	44.4%	55.6%	44.4%	0.00%	110.0	0.0041	8.34	4.64	9.18	0.00	0.00	0%
Primer	13.39	21.30%	0.0%	21.3%	0.0%	52.40%	14.0	0.0041	2.85	2.85	0.72	0.27	5.44	90%
White Topcoat	11.12	26.00%	0.0%	26.0%	0.0%	57.92%	24.0	0.0041	2.89	2.89	1.25	0.36	4.99	90%
Gray Topcoat	11.02	23.50%	0.0%	23.5%	0.0%	62.80%	20.0	0.0041	2.59	2.59	0.93	0.30	4.12	90%

State Potential Emissions **Add worst case coating to all solvents** **see below** **0.92**

METHODOLOGY

Primer (14 gallons) + White Topcoat (24 gallons) + Gray Topcoat (20 gallons) = 58 gallons to paint one unit (plane).
Units/hour = max of 36 planes painted per year = 36 units/yr / year/8760 hours = 0.0041 units/hour.
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used
Transfer Efficiency = Air Pollution Engineering Manual (AWMA 1992) Chapter 10 Table 2, electrostatic painting and flat surfaces.

326 IAC 8-1-6 VOC Minor Limit:
IDEM, OAQ determined a VOC limit was required to ensure this operation does not exceed 25 tons per year. A limit was added under SPM 097-28213-00559.

Potential to Emit VOC **greater than** **25** TPY
VOC Limit **25** TPY

Appendix A to the Technical Support Document - Emission Calculations
HAP Emission Calculations
AAR Surface Coating Operation P-2

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Grou	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek
Date: December 10, 2014

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (units/hour)	Weight % Xylene	Weight % MIBK	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	MIBK Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)	Combined HAP (ton/yr)
White Topcoat	11.12	24.00	0.0041	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Gray Topcoat	11.02	20.00	0.0041	5.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20	0.40	0.00	0.00	0.00	0.00	0.00	0.60
METHODOLOGY											**0.44**	**0.40**						**0.84**

Potential HAP = Weight % HAP * Density of coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

Appendix A to the Technical Support Document - Emission Calculations
Natural Gas Combustion Only
MM BTU/HR <100
AAR NG Make-Up Air Heating Unit B-1

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road
	Permit Reviewer:	David Matousek
	Date:	December 10, 2014

Combined Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
36.0	315.36

	Pollutant					
	PM*	PM10/2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.30	1.20	0.09	15.77	0.87	13.25

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 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

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

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 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMCF	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.3E-04	1.9E-04	1.2E-02	2.8E-01	5.4E-04

	HAPs - Metals					Combined
	Lead	Cadmium	Chromium	Manganese	Nickel	HAP
Emission Factor in lb/MMCF	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	NA
Potential Emission in tons/yr	7.9E-05	1.7E-04	2.2E-04	6.0E-05	3.3E-04	0.30

The five highest organic and metal HAPs emission factors are provided above. Hexane is highest single HAP.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A to the Technical Support Document - Emission Calculations

Emission Calculations - Surface Coating Operations EU-13, EU17 and EU-18

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Aircraft Equivalence

Aircraft	Bays per Fleet	Planes per Year (HMV)	Planes per Year (CCHK)	Planes per Year (Corrosion)	Planes per Year (Other)	HMV ISS Factor	HMV ISS Aircraft Equivalence	CCHK ISS Factor	CCHK ISS Aircraft Equivalence
757	3	35	96	0	1.5	1.786	62.51	1.80	172.80
767	2	24	48	0	0.5	2.700	64.80	2.70	129.60
737	12	96	265	41	3.5	1.000	96.00	1.00	265.00

HMV Aircraft Total per Year 223.31

CCHK Aircraft Total per Year 567.40

PM, PM_{10}, $PM_{2.5}$ Emissions

Hanger Floor Emissions

Aircraft	Particulate Emissions (lb/plane)	Planes per Year	PTE PM, PM_{10}, $PM_{2.5}$ (TPY)
757-HMV	94.40	35	1.65
767-HMV	141.60	24	1.70
737-HMV	52.40	96	2.52
757-CCHK	83.00	96	3.98
767-CCHK	92.40	48	2.22
737-CCHK	55.30	265	7.33
737-RCHK	14.80	41	0.30
		PTE (TPY)	**19.70**

Paint Room Emissions

Aircraft	Particulate Emissions (lb/plane)	Planes per Year	PTE PM, PM_{10}, $PM_{2.5}$ (TPY)
757-HMV	220.33	35	3.86
767-HMV	245.30	24	2.94
737-HMV	146.89	96	7.05
		PTE (TPY)	**13.85**

(Continued on Next Sheet)

Appendix A to the Technical Support Document (TSD)
Emission Calculations - Surface Coating Operations EU-13, EU17 and EU-18
(Continued from Previous Sheet)

Strip/Surface Emissions			
Aircraft	Particulate Emissions (lb/plane)	Planes per Year	PTE PM, PM_{10}, $PM_{2.5}$ (TPY)
757-HMV	156.10	35	2.73
767-HMV	156.10	24	1.87
737-HMV	154.13	96	7.40
		PTE (TPY)	**12.00**

Emissions from Other Operations			
Aircraft	Particulate Emissions (lb/plane)	Planes per Year	PTE PM, PM_{10}, $PM_{2.5}$ (TPY)
757-HMV	190.33	35	3.33
767-HMV	213.56	24	2.56
737-HMV	135.11	96	6.49
		PTE (TPY)	**12.38**

Emission Unit Total			
Operation	PTE (TPY)	Control %	Controlled PTE (TPY)
Hanger Floor	19.70	0%	19.70
Paint Room	13.85	95%	0.69
Strip/Surface	12.00	95%	0.60
Other	12.38	95%	0.62
Total PTE (TPY)	57.93		21.61

VOC and HAP Emissions

VOC Emissions			
Shop	Emissions (lb/plane)	Planes Per Year	PTE (TPY)
Interior Shop	64.33		18.54
All other Interior Shop	20.35		5.86
Machine Rework	2.15		0.62
Paint Shop Paint Booth	146.86		42.32
Other Shops in Paint Shop	8.48		2.44
Heat Exchanger	19.35		5.58
Metal Fabricator	38.47		11.09
All other indirect Shops	28.86	576.37	8.32
		PTE VOC (TPY)	**94.77**

HAP	Wt. % HAP in VOC Emissions	Total VOC (TPY)	HAP PTE (TPY)
Toluene	0.97%		0.92
Xylene	0.24%		0.23
Methyl Isobutyl Ketone	0.34%		0.32
Chromium	0.55%		0.52
Diisocyanate	0.01%		0.01
Methyl Chloroform	1.00%		0.95
Phenol	0.08%		0.08
Ethylbenzene	0.01%		0.01
Glycol	0.01%		0.01
Methylene Chloride	0.43%		0.41
Methanol	0.01%	94.77	0.01
		Total HAP (TPY)	**3.47**

Appendix A to the Technical Support Document - Emission Calculations
ASIG Large Reciprocating Internal Combustion Engines - Generator 017
Output Rating (>600 HP)

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road

Permit Reviewer: David Matousek

Date: December 10, 2014

Output Horsepower Rating (hp)	1256
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	628,000
Sulfur Content (S) of Fuel (% by weight)	0.300

	Pollutant						
	PM**	PM10*	PM2.5*	SO2	NOx**	VOC	CO**
Emission Factor in lb/hp-hr	8.82E-04	4.01E-04	4.01E-04	2.43E-03 *(.00809S)*	1.52E-02	7.05E-04	1.87E-02
Potential Emission in tons/yr	0.28	0.13	0.13	0.76	4.77	0.22	5.87

*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).

**PM, NOx and CO emission factors taken from 40 CFR 60, Subpart IIII

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	1.71E-03	6.18E-04	4.24E-04	1.73E-04	5.54E-05	1.73E-05	4.66E-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)	**3.46E-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 to the Technical Support Document - Emission Calculations
ASIG Tank Storage VOC losses

Collocated Sources:	Permit Numbers	Address - Indianapolis, Indiana 46241
Indianapolis Airport Authority (IAA)	T097-35016-00156	2825 West Perimeter Road and 7800 Col. H. Weir Cook Drive
Johnson Melloh Solutions (JMS)	T097-34078-00586	2745 South Hoffman Road, Suite 504
AAR Aircraft Services, Indianapolis (AAR)	T097-33261-00559	2825 West Perimeter Road
Chautauqua Airlines (CHA)	T097-35018-00668	2745 South Hoffman Road, Dock 67, Hng 7A-7B
ASIG Aircraft Services International Group	T097-35006-00667	2050 South Hoffman Road
Permit Reviewer:	David Matousek	
Date:	December 10, 2014	

Three identical above ground Jet A fuel storage tanks

TANKS 4.09d
Emissions Report - Summary Format

Tank	
Tank Identification	TK1
User Identification:	Jet A fuel storage tank
Type of Tank:	Vertical Fixed Roof Tank
Description:	Jet A fuel storage tank
Tank Dimensions	
Shell Height (ft):	40
Diameter (ft):	44.5
Liquid Height (ft):	38
Avg. Liquid Height (ft):	19
Volume (gal):	465,000
Turnovers:	54.46
Net Throughput (gal/yr):	25,342,500
Heated tank (y/n?)	n
Paint Characteristics	
Shell Color/Shade:	White
Shell Condition:	Good
Roof Color/Shade	White
Roof Condition	Good
Roof Characteristics	
Type	Cone
Height (ft):	2
Slope (ft/ft) (Cone Roof)	0.09
Breather Vent Settings	
Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03
Daily Liquid Surface Temp (F)	
Avg.:	54
Min.:	48.9
Max.:	59.1
Liquid Bulk Temp (F):	52.3
Vapor Pressure (psia):	
Avg.:	0.007
Min.:	0.0058
Max.:	0.0083
Vapor Molecular Wt.:	130
Molecular Wt.:	162

	Losses (lbs/yr)		
Components	**Working Loss**	**Breathing Loss**	**Total**
Jet A Fuel	**394.17**	**71.93**	**466.09**

Combined Losses (tons/yr) for 3 identical storage tanks		
Working Loss	**Breathing Loss**	**Total**
0.59	**0.11**	**0.70**

Methodology
Emission calculations based on EPA program "TANKS" Version 4.09d
Parameters per application

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Shawn McFarland
AAR Aircraft Services, Indianapolis
2825 W Perimeter Rd
Indianapolis, IN 46241

DATE: February 10, 2015

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Title V - Renewal Administrative Permit
097 - 33261 - 00559

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:
Troy Jonas, GM
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.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

February 10, 2015

TO: Wayne Township Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: AAR Aircraft Services, Indianapolis
Permit Number: 097 - 33261 - 00559

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 6/13/2013

Mail Code 61-53

IDEM Staff	LPOGOST 2/10/2015 AAR Aircraft Services, Indianapolis 097 - 33261 - 00559 /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		~~Shawn McFarland AAR Aircraft Services, Indianapolis 2825 W Perimeter Rd Indianapolis IN 46241 (Source CAATS)~~ Via USPS certified mail									
2		Troy Jonas GM AAR Aircraft Services, Indianapolis 2825 W Perimeter Rd Indianapolis IN 46241 *(RO CAATS)*									
3		Marion County Health Department 3838 N, Rural St Indianapolis IN 46205-2930 *(Health Department)*									
4		Indianapolis City Council 200 East Washington Street, Room E Indianapolis IN 46204 *(Local Official)*									
5		Marion County Commissioners 200 E. Washington St. City County Bldg., Suite 801 Indianapolis IN 46204 *(Local Official)*									
6		Wayne Township Public Library 198 South Girl School Rd. Indianapolis IN 46231 *(Library)*									
7		Matt Mosier Office of Sustainability City-County Bldg/200 E Washington St. Rm# 2460 Indianapolis IN 46204 *(Local Official)*									
8		Johan & Susan Van Den Heuvel 4409 Blue Creek Drive Carmel IN 46033 *(Affected Party)*									
9		Fairfield Builders Supply Corp PO Box 4427 Lafayette IN 47903 *(Affected Party)*									
10		Indiana Members Credit Union 5103 Madison Avenue Indianapolis IN 46227 *(Affected Party)*									
11											
12											
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